

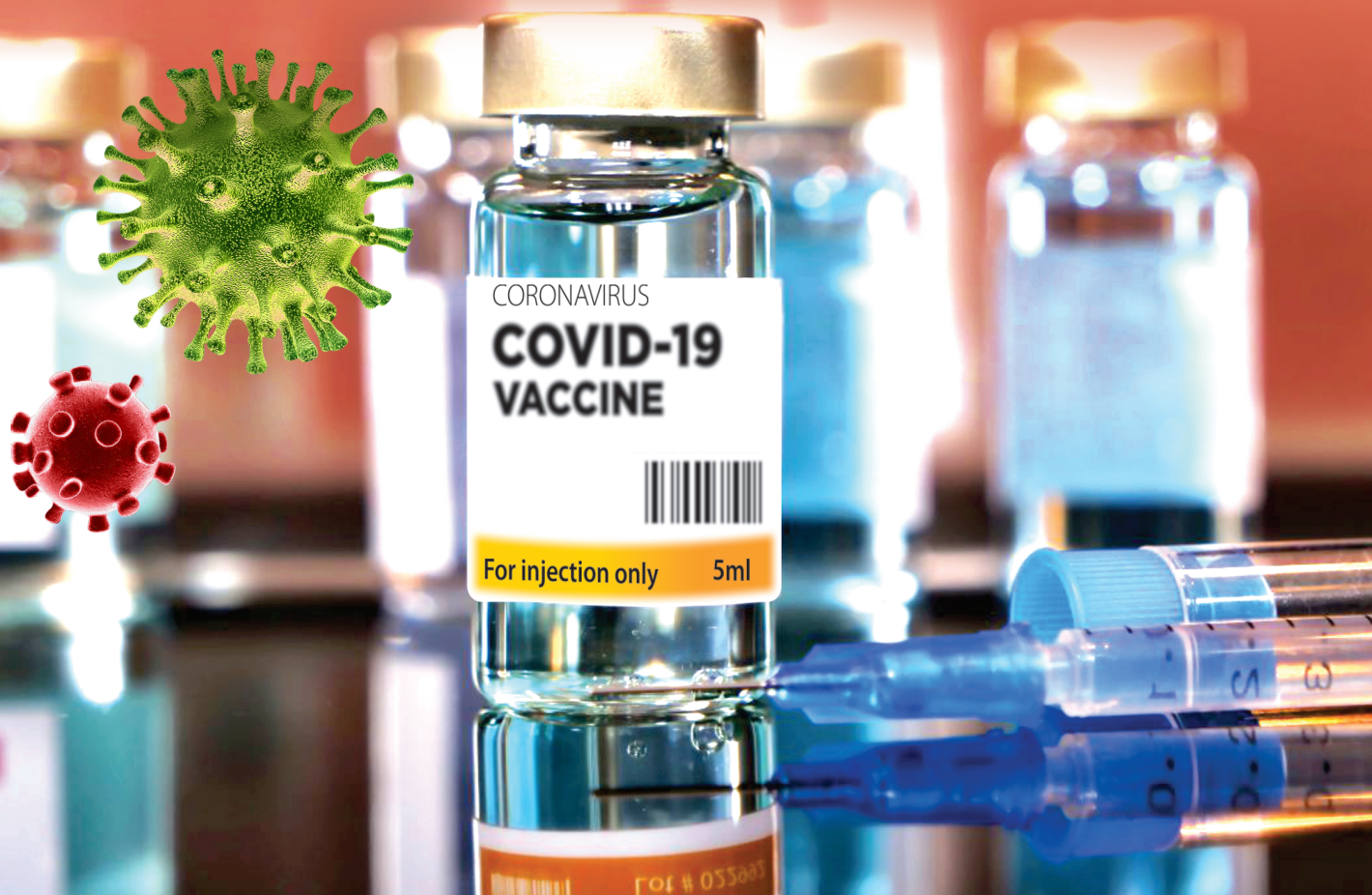
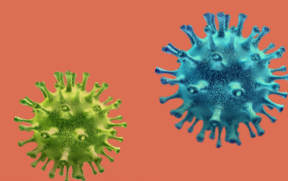
NEXT IAS

May, 2021

Current Affairs

"A MONTHLY MAGAZINE FOR UPSC CIVIL SERVICES EXAMINATION"

EVERYTHING YOU NEED TO KNOW ABOUT **COVID-19 VACCINES**



**Lokpal of India:
A Detailed Evaluation**

**Groundwater Depletion:
A Multifaceted Crisis**

**Indian Rhino
Vision 2020**

Current Affairs

May, 2021

Chief Editor

B. Singh (Ex. IES)

CMD, MADE EASY Group

Editor

Aniruddh Pratap Singh



MADE EASY Publications

Corporate Office: 44-A/4, Kalu Sarai, New Delhi-110016

Visit us at: www.madeeasypublications.org

☎ 011-45124660, 8860378007

E-mail: infomep@madeeasy.in

© Copyright 2021

MADE EASY Publications has taken due care in collecting the data before publishing this book. In spite of this, if any inaccuracy or printing error occurs then Made Easy Publications owes no responsibility. Made Easy Publications will be grateful if you could point out any such error. Your suggestions will be appreciated. © All rights reserved by MADE EASY PUBLICATIONS. No part of this book may be reproduced or utilized in any form without the written permission from the publisher.

Disclaimer: The views and opinions expressed in this magazine are those of the authors and do not necessarily reflect policy or position of CURRENT AFFAIRS Magazine or MADE EASY Publications. They should be understood as the personal opinions of the author/ authors. The MADE EASY assumes no responsibility for views and opinions expressed nor does it vouch for any claims made in the advertisements published in the Magazine. While painstaking effort has been made to ensure the accuracy and authenticity of the informations published in the Magazine, neither Publisher, Editor or any of its employee does not accept any claim for compensation, if any data is wrong, abbreviated, cancelled, omitted or inserted incorrect.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without either the prior written permission of the Publisher.

MESSAGE TO THE READERS

The May 2021 Issue of the Next IAS Current Affairs Magazine (hereafter called 'The Magazine'), covers news events from 1st April 2021 to 30th April 2021 (hereafter called 'Coverage Period'). The Magazine has comprehensive coverage of all the topics from current affairs neatly categorized into major sections like Economy, International Issues, Polity & Governance, and so on.

The May issue of the magazine has an in-depth analysis of issues from the coverage period viz. **'Everything to Know about COVID-19 Vaccines', 'Lokpal of India: A Detailed Evaluation', 'Groundwater Depletion: A Multifaceted Crisis', and 'Indian Rhino Vision 2020'**. The Magazine also covers the issue of **"Corals May Withstand Climate Change", "What is Blue Flag Certificate?",** and

"Effect of Asian Desert Dust on Indian Monsoon" and many other issues which have become relevant in the coverage period.

The Magazine works on the principle of learning by doing and testing the readers' understanding and retention via model question papers (included in the magazine) based on the lines of Prelims and Mains examinations of the Union Public Service Commission (UPSC) Civil Services Examination.

The Magazine is designed for the needs of the students who are preparing for UPSC Civil Services Examinations. However, it is also helpful for Engineering Services Examinations, Banking Examinations and other government or Public Sector Enterprises examinations.

Any suggestions for further improvement of the Magazine is welcome and may be e-mailed to currentaffairs@nextias.com

Team NEXTIAS

Contents

In-Depth

Everything You need to know about Covid-19 Vaccines	5
Lokpal of India: A Detailed Evaluation	8
Groundwater Depletion: A Multifaceted Crisis	11

Feature Articles

Indian Rhino Vision 2020	13
Corals May Withstand Climate Change	15
What is Blue Flag Certificate?	16
Effect of Asian Desert Dust on Indian Monsoon	17
National Mission for Sustaining Himalayan Ecosystem (NMSHE)	18
Efficiency of Pollution Control Boards	20
'Freedom Patrol' in Indian EEZ	22
Country Reports on Human Rights Practices	24
ARIES Facility	25
Chimera Research	27
National Rare Disease Policy 2021	28
Gender Bias and Inclusion in Advertising in India Report	30
World Health Day 2021	32
Autonomous State within Assam	33
The Tribunals Reforms Ordinance, 2021	34
Gangetic River Dolphin	36

1 Economy

Codex Committee on Spices and Culinary Herbs (CCSCH)	38
Madhu Kranti Portal and Honey Corners Initiative	39
First Farm-Based Solar Power Plant in Rajasthan	40
Powergrid Infrastructure Investment Trust (PGINVT)	41
Ways and Means Advance (WMA)	41
RBI to open up RTGS, NEFT for Payment System Operators	42
Eatsmart Cities Challenge and Transport4all Challenge	44
Subsidy Policy for Urea Produced by Coal Gasification	45
Production Linked Incentive Scheme for Food Processing Industries	46
Shaphari Scheme for Aquaculture	47
Startup India Seed Fund Scheme (SISFS)	48
Inflation Target Retained by Central Government	49
Unique Land Parcel Identification Number (ULPIN) Scheme	51
Emergency Credit Line Guarantee Scheme (ECLGS)	52

2 International Relations

Pakistan Freezes Plans to Open Imports from India	54
Armenian Genocide	55

China, Iran sign 25-year 'Strategic Pact'	56
Access to Covid-19 Tools (ACT) Accelerator	57
India - Seychelles Virtual Meet	58
Meeting of Education Ministers of E-9 Countries	59
US Put India on its Currency Practices Monitoring List	60
17th BIMSTEC Ministerial Meeting	61
Boao Forum for Asia (BFA) Annual Conference 2021	61
Death of Chad's President Idriss Déby	62

3 Internal Security

National Security Act (NSA)	63
Multilateral Maritime Exercise La Pérouse	63
Multinational Military Exercise Shantir Ogroshena	64
58 th National Maritime Day	65
ALH (Advanced Light Helicopter): Dhruv MK III	65
Exercise Varuna - 2021	66

4 Polity & Governance

Central Vigilance Commission Officers to be Transferred Every 3 Years ..	67
Star Campaigners: Eligibility and Related Issues	67
Person Acquitted due to Benefit of Doubt not Eligible for Public Employment	68
Plea in Supreme Court against Uniform Civil Law on Divorce and Alimony	69
Chandler Good Government Index	70
#FOSS4GOV Innovation Challenge	70
National Commissions on Minorities	72
Swamitva Scheme	72

5 Social Issues

Aahaar Kranti Mission	74
MANAS Mobile App	74
UNPFA Report - My Body is My Own	74
Tribal Health Collaborative- 'Anamaya'	76
Sankalp Se Siddhi	76

6 Environment

African Elephants Reclassified under IUCN	77
Earth Hour	78
Pilibhit Tiger Reserve	79
Ranthambore Tiger Reserve	80
Two new Seaweed Species	80
Dumping Inert Waste in Asola Bhatti Wildlife Sanctuary	81

Pench Tiger Reserve – Female cub of Maneater Tiger Avni Released.....	82
Free Inter-State Movement of Oxygen-Carrying Vehicles.....	83
Leaders Summit on Climate.....	83
Need for Protection Rules for Exotic Animals.....	85
Doomsday Glacier.....	85
Navegaon-Nagzira Tiger Reserve.....	86
National Climate Vulnerability Assessment Report.....	87
Great Indian Bustard Poaching In Pakistan.....	88
India's First Disk-Footed Bat.....	89
Sulphur Dioxide from Caribbean Volcano Reaches India: WMO.....	89
New Opium Cultivation Strategy.....	90
Sturgeon.....	91

7 Science & Technology

Crew-2 Mission.....	93
Baikal-GVD Telescope.....	93
ICAR-IVRI transfers Technology - CSF & Sheep Pox Vaccine through Agrinnovate.....	94
WHO: Global Diabetes Compact (GDC).....	95
Respond Programme: ISRO to Support Eight Joint Research Projects of IIT Delhi.....	96
Atal Innovation Mission - PRIME.....	97
Brucellosis Disease.....	97
Harlequin Ichthyosis: A Rare Disease.....	99
B.1.617 Variant and Its Effects in India.....	99
Gamma Ray Emitting Narrow Line Seyfert (NLS 1) Galaxy.....	100
Possibility of Covid-19 Re-Infection.....	101
Three New Initiatives by NIXI.....	102
Nasa's Ingenuity Mars Helicopter.....	103

8 Ethics

Ethical Challenges and Human Behavior during Pandemic.....	104
--	-----

9 Culture

Mahavir Jayanti 2021.....	106
130 th Birth Anniversary of Dr. B R Ambedkar.....	106
Babu Jagjivan Ram.....	107
Jallianwala Bagh Massacre.....	107
Shivakumara Swamigalu.....	108
Poet Sarala Das.....	109
Tika Utsav and Jyotirao Phule.....	109
World Cities Culture Forum.....	110
Lingaraja Temple.....	110
World Heritage Day 2021.....	111
New Year Festivals.....	112

10 Miscellaneous

India Energy Dashboards (IED) Version 2.0.....	113
World Press Freedom Index.....	113
Iconic Chenab Bridge.....	115

11 Test Yourself

Multiple Choice Questions.....	116
Subjective Questions.....	125

EVERYTHING YOU NEED TO KNOW ABOUT COVID-19 VACCINES

HCGO, India's mRNA based COVID 19 vaccine candidate, has received seed funding from the Government for its clinical studies.

About:

- Also, to maximize accessibility and availability of Vaccine to more population, SPUTNIK-V has been given approval by Drugs Controller General of India (DCGI) for emergency use.
- HCGO is first of its kind mRNA based COVID 19 vaccine candidate developed by Gennova Biopharmaceuticals Limited (Pune) and HDT Biotech Corporation (USA). It is in Phase - 1 and 2 clinical trials. Funding for the vaccine is provided under Mission COVID Suraksha. It remains stable at 2 degree celsius to 8 degree celsius, thereby making it simpler to transport to different places, even hard to reach places. It makes appropriate use of nano technology for vaccine development. It has already demonstrated its characteristics:
 - Safety
 - Immunogenicity
 - Neutralization antibody activity in rodent and non-human primate models. The neutralizing antibody response of both were comparable with the "sera" from convalescent protein of COVID-19.
 - It has all necessary tools to guide the host cells to make the antigen-spike protein of the virus, reported to interact with host cells' receptors.
 - It is supported by "Lipid Inorganic Nano Particle (LION)" as a delivery vehicle.

- This mRNA technique could bring a new era of vaccine development. It can be used to better the existing vaccines and create new ones for a range of diseases. It is non-infectious, non-integrating in nature. Highly effective because of their inherent capability to translate into protein structure in the cell cytoplasm. They are fully synthetic and don't require a host to grow.
- They are quickly manufactured in an inexpensive manner under cGMP conditions to ensure their availability and accessibility for mass vaccination on a sustainable basis. The vaccine formulations and trials also need to follow Drugs and Cosmetics (9th amendment) Rules, 2019. According to these 2 preclinical toxicity trials are must to establish safety of vaccine candidates.

Current Good Manufacturing Practice

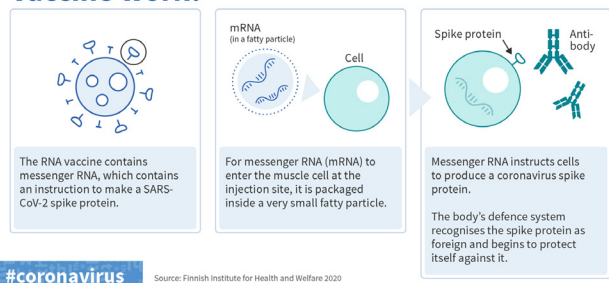
cGMP (Current Good Manufacturing Practice) Regulation for drugs contain minimum requirements for the methods, facilities and controls used in manufacturing, processing and packaging of a drug product. These regulations make sure that production is safe for use and has ingredients and strength it claims to have. The small "c" in cGMP stands for reminding manufacturers to have technologies and systems which are up to date in order to comply with regulation. Also, it keeps changing wrt the situations.

TYPES OF VACCINES

Conventional vaccines	mRNA
It takes months to produce	It can be produced in span of few days
It is developed from the weakened form of virus	It only requires the pathogen's genetic code. Made from the DNA template in a lab.
This is not possible.	DNA is synthesized from an electronic sequence that can be sent across the world in an instant by computer
It requires growing of large quantities of virus to make each vaccine thereby creating a situation of potential hazard	No virus is needed to make a batch of an RNA vaccine. Only small quantities of virus are used in gene sequencing and vaccine testing
Antigen is injected into the body. On recognizing this antigen, the immune system produces specific antibodies in preparation for next time the body encounters the pathogen.	RNA is injected to the body and enters cells, where it provides instruction to produce antigens. The cell then presents the antigens to the immune system, prompting T-Cells and antibodies responses that can fight the disease.
Each new vaccine requires a new (focused to the person) production process, including purification and testing.	It is anticipated to be scaled and standardized thereby enabling the replacement of the sequence encoding the target protein of interest for a new vaccine with minimal changes to the vaccine production process.

How does the mRNA coronavirus vaccine work?

thl



This recommendation has been accepted by GoI. it will help in easing availability for COVID vaccines.

- On the same line, the Subjects Expert Committee (SEC) reviewed the conditions for approval of SPUTNIK-V. The safety and immunogenicity data presented by the firm from Indian study is comparable with that of 3rd phase clinical trial interim data from Russia.

Sputnik-V:

- Developed by Gamaleya Institute, Russia
- It should be administered intramuscularly
- In 2 doses of 0.5ml each with a gap of 21 days in between
- Russian Direct Investment Fund (RDIF) has collaborated with other Indian companies, like Hetero Biopharma, Gland Pharma, to produce 850 million doses of the vaccine in the country every year.
- Sputnik V is to be stored at -18°C in its liquid form.
- Although, in its freeze-dried form, it can be stored at 2-8°C, in a conventional refrigerator without any need to invest in additional cold-chain infrastructure.
- Cost of 1 dose to be less than Dollar 10.

Background:

- SEC recommendation has been accepted by DGCI and approval given for import of the vaccine for emergency use.

4 TYPES OF VACCINES

Attenuated Live Virus: it is a weakened or altered form of virus. Here, the virus is passed through a series of cell cultures or animal embryos. This helps in growth of viruses in different embryos. The virus becomes better at replicating in animal cells but loses ability to replicate in human cells. Now it can't replicate but can still invoke an immune response so used as a vaccine.

- Advantage:** Creates strong and long lasting immune response.
- Disadvantage:** Can not be administered to those having weak immune systems, Secondary mutation can lead to reversion of the virus.
- Example:** Measles, Rubella, Rotavirus, Yellow Fever

Inactivated toxins generated by bacteria: some bacterial diseases are produced by toxins of bacteria and not the bacteria itself. Immunization is done by inactivating the toxin that causes disease symptoms

- Advantage:** No possibility of reversal of virus, Does not spread to un-immunized individual, Less susceptible to changes in temperature, light, humidity
- Disadvantage:** Not highly immunogenic unless controlled doses used else, it might make the antigen resistant to the vaccine
- Examples:** Diphtheria, Tetanus

Inactive or Killed organisms/virus: created by inactivating a pathogen using heat or chemicals like formaldehyde or formalin. It destroys replication property but keeps it intact so that the immune system can still respond to it after recognizing.

- Advantage:** Can not revert to more pathogenic phenotype, Unlikely to interfere with each other in combination
- Disadvantage:** Proper handling and mixing is very important.
- Examples:** Polio, Hepatitis A, Rabies

Segments of Pathogen (subunits/conjugate): It contains only pieces of pathogens they protect against - to provoke a response from the immune system. It is done by isolating a specific protein from a pathogen and presenting it as an antigen on its own. Gene coding for a vaccine protein is also created from this subunit. When carrier virus reproduces, the vaccine protein is also produced automatically.

- Advantages:** More safe than any other, Components only contains recombinant proteins, Generally no side effects induced at injection site, Has immunological memory thereby decreasing asymptomatic carriage
- Disadvantages:** Often requires multiple doses to provide long term immunity
- Examples:** Hepatitis B, Pertussis, Pneumococcal

- M/s Dr Reddy's Laboratories Ltd. (M/s DRL) applied for grant of permission for import and market Gam-COVID-Vac combined vector vaccine (also called SPUTNIK-V). It has been approved for phase 2 and 3 trial.

Vaccination in India:

- Central Government is fighting against COVID with a proactive and 'Whole of Government' Approach with focus on: Containment, Surveillance, Testing, Covid appropriate behavior and vaccination.
- Till April 25th, 2021, India's cumulative vaccine coverage is at 14.19cr (in just 100 days). Country wide vaccination started in January with 2 vaccines at hand:
 - ♦ **CoviShield** - manufactured by Serum Institute of India
 - ♦ **Covaxin** - manufactured by Bharat Biotech International Limited
- India has become the first nation in administering the highest number of daily doses of 41,69,609. Govt announced a Liberalized and Accelerated phase 3 strategy of COVID 19 Vaccination from 1st May of 2021:
 - ♦ Pricing
 - ♦ Procurement

- ♦ Eligibility and
- ♦ Administration of vaccines
- All has been made flexible in this phase of the world's largest vaccination drive. For registering to get vaccinated a platform has been created CO-WIN. It is a new mobile app and records vaccine data.
- **Types of Vaccine:** There are 4 types of vaccines being used in the world at present.

Way Forward:

- India's approach is built on scientific and epidemiological pillars, guided by global best practices, Standard Operating Procedures (SoPs) of WHO as well as NEGVAC's recommendations. Only, mass vaccination along with individual's responsibility for their own safety, can sail the country through this epidemic.
- Also, A nasal spray vaccine can be a gamechanger in the fight against Covid-19. The intranasal vaccine is a single-dose drug and has lesser side effects than other vaccine candidates. Hyderabad-based Bharat Biotech has started the clinical trial of the intranasal vaccine.

DEPARTMENT OF BIOTECHNOLOGY

- Under Ministry of Science and Technology.
- Promotes and accelerates the development of Biotechnology in India
- Encompasses all sectors like agriculture, health, animal science, environment

BIRAC:

- It is not for profit, section 8, schedule B, Public Sector Enterprise
- Set up by DBT, Govt
- It is an interface agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation addressing nationally relevant product development needs.

Gennova:

- HQ - Pune
- Bio-technology Company
- Dedicated to RnD, Production, Commercialization of bio-therapeutics to address life threatening diseases.

Mission COVID Suraksha:

- It is Indian Covid Vaccine Development Mission
- Launched in Nov 2020
- It will help in development process of around 5-6 COVID-19 vaccine candidates
- RnD, License for vaccines, introduction in market - all will be covered under this mission
- It will be responsible for checking if there are enough doses in supply chain
- Rs. 900 crores given in grant for the mission to DBT
- **Aim:** End to end passage to vaccine (i.e., pre-clinical to manufacturing stage)
- Department is supporting development of 10 vaccines and SPUTNIK-V is one of them.

NEGVAC:

- Chaired by NITI AAYOG member (Health) - Dr. V.K.Paul
- Provides guidance on all aspects of COVID 19 vaccination, including prioritization of population groups, procurement and inventory management, vaccine selection, vaccine delivery and tracking.

LOKPAL OF INDIA: A DETAILED EVALUATION

Recently, Lokpal of India organized Webinar on 'Bringing Synergies in Anti-Corruption Strategies'

About:

- The webinar was organized by the Lokpal of India to commemorate 2 years of its inception.
- It was presided over by the Chairperson of the Lokpal of India -Shri Justice Pinaki Chandra Ghose
- It was emphasized that all agencies should cooperate to eradicate corruption immediately and share information on real time basis.
 - ♦ It was decided to work on creating a web portal with restricted access that would enable sharing relevant information.
- The chairman said that Preventive corruption measure must be appreciated and adopted as "Prevention is better than cure".
- The following also participated in the webinar
 - ♦ Members of the Lokpal
 - ♦ Chief Vigilance Commissioner and Vigilance Commissioner
 - ♦ Secretary (Personnel), Govt. of India,
 - ♦ Director, Central Bureau of Investigation (CBI) and
 - ♦ Director (Enforcement)

Corruption:

- It can be defined as the abuse of entrusted power for private gain. It can impact a nation's development in various ways.

Impact of Corruption:

- The political costs of corruption are manifested in weakened public trust in political institutions, reduced political participation, perversion of the electoral process, restricted political choices available to citizens and loss of legitimacy of the democratic system.
- Corruption reduces economic efficiency by misallocation of resources in favour of rent seeking activities, increasing the cost of public transactions, acting as an additional tax on business thereby reducing investment, reducing genuine business competition.
- Corruption distorts the value systems and wrongly attaches elevated status to occupations that have rent seeking opportunities. This results in a disillusioned public, a weak civil society, which attracts unscrupulous leaders to political life.
- Environmentally devastating projects are given preference in funding, because they are easy targets for siphoning off

public money into private pockets.

- Corruption within security agencies can lead to a threat to national security, including through distortion of procurement, recruitment of ineligible persons, providing an easy route for smuggling of weapons and terrorist elements into the country and money laundering.

Framework to fight for corruption in India:

- **The Lokpal and Lokayuktas Act, 2013** provides for an establishment of an ombudsman for the central and state governments (Lokpal and Lokayuktas, respectively).
 - ♦ These bodies are required to act independently from the government and have been empowered to investigate allegations of corruption against public servants, which include the prime minister and other ministers.
- **The Central Vigilance Commission** though created in 1964, became an independent statutory body only in 2003 by an Act of Parliament. Its mandate is to oversee the vigilance administration and to advise and assist the executive in matters relating to corruption.
- **Prevention of Corruption Act, 1988** provides for penalties in relation to corruption by public servants and also for those who are involved in the abetment of an act of corruption. The act was amended in 2018 which criminalised both bribe-taking by public servants as well as bribe giving by any person.
- **The Prevention of Money Laundering Act, 2002** aims to prevent instances of money laundering and prohibits use of the 'proceeds of crime' in India. The offence of money laundering prescribes strict punishment, including imprisonment of up to 10 years and the attachment of property of accused persons.
- **The Foreign Contribution (Regulation) Act, 2010** regulates the acceptance and use of foreign contributions and hospitality by individuals and corporations.
- **The Companies Act, 2013** provides for corporate governance and prevention of corruption and fraud in the corporate sector.

Need of Lokpal:

- **There are several deficiencies in our anti-corruption systems** because of which despite overwhelming evidence against the corrupt, no honest investigation and prosecution takes place and the corrupt are hardly punished.

• Lack of Independence –

- ♦ Most of our agencies like CBI, state vigilance departments, Anti-corruption Branch of state police etc are not independent.
- ♦ In many cases, they have to report to the same people who are either themselves accused or are likely to be influenced by the accused.
- ♦ The CBI has been termed as a “caged parrot” and “its master’s voice” by the Supreme Court of India.

• Powerless bodies –

- ♦ Some bodies like CVC or Lokayuktas are independent, but they do not have any powers.
- ♦ They have been made advisory bodies. They can only advise to either impose departmental penalties on any officer or to prosecute him in court.
- ♦ However, their advice is rarely followed whenever any minister or a senior officer is involved.

• Lack of Transparency and internal accountability –

- ♦ Presently, there isn't any separate and effective mechanism to check if the staff of these anti-corruption agencies turns corrupt.
- ♦ Thus, despite so many agencies, corrupt people rarely go to jail due to their nexus with the staff of anti-corruption agencies.
- ♦ Corruption has become a high profit zero risk business.
- ♦ There is absolutely no deterrence against corruption

About Lokpal:

- The Lokpal was established under the provisions of Lokpal and Lokayuktas Act, 2013 on 23rd March, 2019.
- ♦ The Lokpal and Lokayuktas Act, 2013 provided for Lokpal at the centre having jurisdiction of trying cases of corruption against all Members of Parliament and central government employees.
- ♦ The Lokayuktas have functions similar to the Lokpal, but they function on a state level.
- It is a national anti-corruption ombudsman to inquire and investigate into allegations of corruption against public functionaries who fall within the scope and ambit of the above Act.
- **Structure of lokpal**
 - ♦ The institution of Lokpal is a statutory body without any constitutional backing.
 - ♦ It consists of a Chairperson and eight Members out of whom 50% are Judicial Members
 - ♦ 50% of the members of the Lokpal come from amongst the SCs, the STs, the OBCs, minorities and women.
 - ♦ The Chairperson and the Members are appointed by the President of India by warrant under his hand and seal.
 - ♦ The person who is to be appointed as the chairperson of the Lokpal should be either of the following:
 - Either the former Chief Justice of India Or
 - the former Judge of Supreme Court Or

A long-drawn debate

A short history of the Lokpal Bill from the 1960s to the present

1963: The idea of an Ombudsman first came up in Parliament during a discussion on budget allocation for the Law Ministry

1966: The First Administrative Reforms Commission recommended two independent authorities – one at the Centre and one at the



State level – to probe complaints against public functionaries, including MPs

1968: Lokpal Bill introduced in Parliament, but was not passed. Eight attempts were made till 2011 to pass the Bill, but all in vain

2002: The Constitution review commission headed by M.N. Venkatachaliah recommended appointment of the Lokpal and the Lokayuktas. It also recommended that the Prime Minister be kept out of the Lokpal's ambit

2005: The second ARC recommended that a Lokpal be established without delay

2013: Lokpal Act, 2013, passed in Parliament

2016: Lok Sabha agreed to amend the 2013 Act

2017: The SC on April 27 clarified that the Lokpal appointment process need not be stalled merely due to the absence of the Leader of the Opposition, who is a member of the Lokpal selection committee as per the 2013 Act

- ♦ an eminent person with impeccable integrity and outstanding ability, having special knowledge and expertise of minimum 25 years in the matters relating
 - to anti-corruption policy,
 - public administration,
 - vigilance,
 - finance including insurance and banking,
 - law and management.
- **Selection Committee** - The selection of the Chairperson and the members of Lokpal is done through a Selection Committee consisting of
 - ♦ Prime Minister
 - ♦ Speaker of the Lok Sabha
 - ♦ Leader of the Opposition in the Lok Sabha
 - ♦ Chief Justice of India or a sitting Supreme Court Judge nominated by the Chief Justice of India
 - ♦ An eminent jurist to be nominated by the President of India on the basis of recommendations of the first four members of the selection committee.
 - ♦ They hold office for a term of five years or until they attain the age of 70 years, whichever is earlier.
 - ♦ The salary, allowances and other conditions of services of the Chairperson are the same as that of Chief Justice of India.
 - ♦ The salary, allowances and other conditions of services of the Members are the same as that of a Judge of the Supreme Court.
- **Jurisdiction**
 - ♦ The Lokpal has jurisdiction to inquire into allegations of corruption against anyone who is or has been
 - Prime Minister, or
 - A Minister in the Union government, or
 - A Member of Parliament or
 - Any official of the Union Government under Groups A, B, C and D.
 - ♦ It also covers chairpersons, members, officers and directors of any board, corporation, society, trust or autonomous body either established by government.
 - ♦ It also covers any society or trust or body that receives foreign contribution above Rs 10 lakh.
 - ♦ **Lokpal jurisdiction over Prime Minister**
 - **Exceptions** - It includes the Prime Minister except on allegations of corruption relating to international relations, security, the public order, atomic energy and space
 - Full Bench of the Lokpal and at least two-thirds of members must approve an inquiry against Prime Minister
 - It will be held in-camera
 - If the Lokpal so desires, the records of the inquiry will not be published or made available to anyone

Advantages of Lokpal:

- The main advantage is it is aimed at tackling a major socio-political problem – corruption.
- It gives decision making power to highly qualified individuals who are neither bureaucrats nor politicians.
- The Lokpal Bill had been in the pipeline for almost 50 years before it became an Act.
 - ♦ It shows that people across generations had faith in this legislation and believed that they can change the system.
- **Speedy justice** –
 - ♦ It mandates that the trial should be completed within a year of filing the case; the time period can be extended to a maximum of 2 years.
 - ♦ It does not need prior sanction from the government to investigate a complaint

Limitations:

- **Political influence** - The appointing committee of Lokpal consists of members from political parties that put Lokpal under political influence.
- **There are no criteria to decide who is an 'eminent jurist'** or 'a person of integrity' which manipulates the method of the appointment of Lokpal.
- **Inquiry against the complainant** - The provision related to the initiation of inquiry against the complainant, in cases where the accused is found innocent, leads to discouraging people from making complaints.
- **Exclusion of judiciary** - One of the biggest lacunae is the exclusion of the judiciary from the ambit of the Lokpal.
- **No constitutional backing and No provisions for appeal** against the actions of Lokpal.
- **The states have complete discretion** with respect to the specific details in relation to the appointment of Lokayukta.
- **Ineffective after 7 years of committing of crime** - No complaint against corruption can be registered after a period of seven years from the date on which the mentioned offense is alleged to have been committed.

Way Forward:

- In order to tackle the problem of corruption, the Lokpal should be strengthened both in terms of functional autonomy and the availability of manpower.
- It must be financially, administratively and legally independent of those whom they are called upon to investigate and prosecute.
- Its appointments must be done transparently so as to minimize the chances of the wrong sorts of people getting in.
- Also, there is a need for a multiplicity of decentralized institutions with appropriate accountability mechanisms, to avoid the concentration of too much power in any one institution or authority.

GROUNDWATER DEPLETION: A MULTIFACETED CRISIS

A recent study points that India's winter crop acreage is threatened by groundwater depletion.

About:

- A study published in **Science Advances** by a team of researchers at University of Michigan points out that if Indian farmers lost access to groundwater in overexploited regions, without replacement by other sources, the country could lose up to 20% of winter crop acreage.
- India is the largest consumer of groundwater in the world, providing 60% of the nation's irrigation supply.

Details of the study:

- What is it about?** Using satellite and census data from India, the researchers quantified the impacts of groundwater depletion on cropping intensity, a crucial driver of agricultural production.
- Findings:** Given the current depletion trends, cropping intensity may decrease by 20% nationwide and by 68% in groundwater-depleted regions.
 - Even if surface irrigation delivery is increased as a supply-side adaptation strategy (widely promoted by the government), cropping intensity will reduce, become more vulnerable to interannual rainfall variability, and spatially uneven.
- Conclusion:** The study concluded that groundwater and canal irrigation are not substitutable and that additional adaptation strategies will be necessary to maintain current levels of production in the face of groundwater depletion.

RABI CROPS

- Rabi crops are sown in winter from October to December and harvested in summer from April to June.
- Crops:** Wheat, barley, peas, gram and mustard.
- States from the north and northwestern parts such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh are important for the production of wheat and other rabi crops.

Groundwater in India:

- In general, in large parts of the country, ground water is of good quality and suitable for drinking, agricultural or industrial purposes. India consumes a large amount of groundwater to meet irrigation needs. 85 % of rural population of the country uses ground water for drinking and domestic purposes.

- Tube wells:** In the 1960s, construction of tube wells increased rapidly and allowed farmers to increase cropping intensity or the number of seasons of crops planted in a year, by expanding into the dry winter and summer seasons.
- This contributed to the food production increase in the last 50 years.

GROUNDWATER MONITORING AGENCIES IN INDIA

- The Central Ground Water Board (CGWB)** monitors groundwater levels on a quarterly basis during January, April/ May, August and November through a large network of 15000 observation wells located all over the country to assess groundwater resources and changes in regimes.
- At the State level, State Ground Water Department/ Directorate/Cell, State Irrigation Department, Groundwater Survey Department/ Agency, Public Health Engineering Department monitor the groundwater level.

Central Ground Water Board (CGWB):

- It is a subordinate office of Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, GoI.
- It is the National Apex Agency entrusted with the responsibilities of providing scientific inputs for management, exploration, monitoring, assessment, augmentation and regulation of ground water resources of the country.
- It was established in 1970 by renaming the Exploratory Tube wells Organization under the Ministry of Agriculture and later merged with the Ground Water Wing of the Geological Survey of India in 1972.
- HQ:** Bhujal Bhavan, Faridabad (Haryana)

Central Ground Water Authority:

- It was constituted under sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 for regulating and controlling ground water development and management in the country for long-term sustainability.
- HQ:** New Delhi

Issues:

- Depleting aquifers:** Due to the high rate of extraction, the groundwater aquifers are becoming rapidly depleted across much of India, with the northwest and south predicted to have critically low groundwater availability by 2025.

- **Food production at risk-** India produces 10% of global agricultural production and is the second largest producer of wheat and rice. Groundwater stress will affect food production adversely.
- **Rural livelihood in danger-** India has nearly 600 million farmers and a reduction in groundwater will adversely affect agricultural production that will negatively affect household welfare.
 - ♦ Loss of rural income will increase rural poverty, reduce household dietary diversity.
- **Water use efficiency-** Groundwater depletion is further exacerbated by low water use efficiency in India and which is also heterogeneous across the country.
 - ♦ **Decreasing cropping intensity-** Groundwater depletion may reduce cropping intensity by up to 20% across all of India and by up to 68% in the regions projected to have low future groundwater availability in 2025.

CROPPING INTENSITY

- It refers to raising of a number of crops from the same field during one agricultural year.
 - $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$
 - Higher cropping intensity means that a higher proportion of the net sown area is being cropped more than once during one agricultural year and implies higher productivity per unit of arable land during one agricultural year.
 - It can be increased through irrigation, fertilizers, crop rotation, mixed cropping, relay cropping, selective mechanization, using fast-maturing varieties, adopting plant protection measures.
 - Although it varies spatially in India, cropping intensity is higher in northern plains and lower in dry, rain-fed regions of Rajasthan, Gujarat, Maharashtra and Karnataka.
- **Shortfalls of canal irrigation as a substitute:** Canal water irrigation is not equitable because farms located downstream of storage reservoirs within a canal network receive less water due to reduced downstream water flow caused by unregulated water use upstream, seepage, and evapotranspiration.
 - **Quality and contamination:** High incidence of fluoride (permissible limit 1.5 mg/l), arsenic (acceptable limit 0.01 mg/l), iron (1.0 mg/l), nitrate (permissible limit 45 mg/l), heavy metals etc have been reported in multiple states.
 - **Water logging and salinity-** Excessive surface water irrigation without considering groundwater status can cause water logging and soil salinity. Gradual rise of ground water levels with time has also resulted in water logging. Heavy evaporation in semi-arid regions lead to salinity problem in command areas.
 - ♦ Inland salinity is reported in arid and semi-arid regions of Rajasthan, Haryana, Punjab, Gujarat, Uttar Pradesh,

Delhi, Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu, rendering it non-potable.

- **Groundwater in coastal areas-** Salinity in coastal areas is found as follows- saline water overlying fresh water aquifer or vice versa or alternating sequence of both.
 - ♦ Problem of salinity ingress has been noticed in Minjur area of Tamil Nadu and Mangrol – Chorwad- Porbander belt along the Saurashtra coast.
- **Climate change** can speed up the rate of groundwater depletion.

Effects of groundwater depletion:

- **Deeper wells-** Falling groundwater levels will necessitate even deeper pumping of groundwater and increase pumping costs.
- **Large bodies of water become shallow-** Groundwater storage makes additional water flow into the rivers, lakes and seas. Decreasing groundwater levels over a time cause less water to enter them (while evaporation continues). This falling water surface level affects the aquatic and surrounding wildlife.
- **Sinkholes-** Falling water tables can cause sinkholes, which can damage buildings and infrastructure (as seen in Mexico City).
- **Land subsidence-** When water is taken out of the soil, the soil collapses, compacts, and drops, causing the land above to subside.

Solutions:

- **Switching to less water-intensive crops-** Instead of cultivating water guzzling crops like sugarcane in water-stressed areas, less water-intensive cereals can be cultivated to halt groundwater depletion.
- **Field level water-saving technologies-** Sprinkler and drip irrigation, may help use whatever limited groundwater resources are left more effectively.
- **Improving canal efficiency-** Current canal irrigation efficiency is sub-optimal. There must be proper study and adaptation of trade offs between canal vs. groundwater use while designing local and national water-use strategies.
- **Water-conservation investments by farmers and people-** Farmers must be sensitized and incentivized to adopt water-conservation practices at the field level. People must use groundwater judiciously.
- **Addressing contamination-** Groundwater contamination can be addressed by various in-situ and ex-situ measures such as groundwater removal, artificial recharge and rain-water harvesting (to dilute concentration), arsenic-free dug wells.
- **Regulating pumping-** Pumping of groundwater needs to be strictly regulated, especially in areas already facing groundwater scarcity.

INDIAN RHINO VISION 2020

The Indian Rhino Vision 2020 (IRV2020) has officially come to a close with the translocation of two rhinos in April 2021 to Manas National Park in Assam.

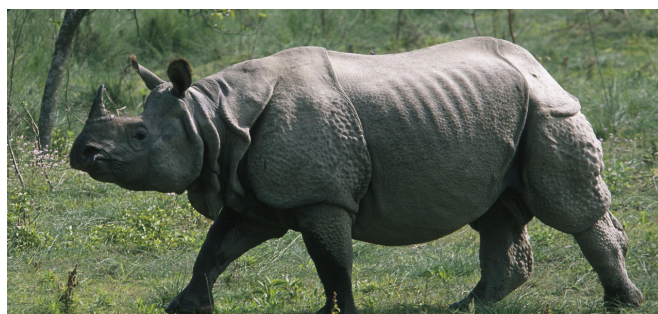
About:

- It was launched in 2005 by WWF-India, alongside the Bodoland Territorial Council and the Government of Assam.
- It was an ambitious effort to attain a wild population of at least 3,000 greater one-horned rhinos spread over seven protected areas in the Indian state of Assam by the year 2020.
 - ♦ Kaziranga National Park
 - ♦ Rajiv Gandhi Orang National Park
 - ♦ Pobitora National Park
 - ♦ Manas National Park
 - ♦ Laokhowa Wildlife Sanctuary
 - ♦ Burachapori Wildlife Sanctuary
 - ♦ Dibru-Saikhowa National Park
- Wild-to-wild translocations were an essential part of IRV2020 – moving rhinos from densely populated parks like Kaziranga NP, to ones in need of more rhinos, like Manas NP.
 - ♦ The translocated rhinos helped Manas National Park get back its World Heritage Site status in 2011.
- However, the plan didn't work out as rhinos are found only in four Protected Areas in Assam: Pabitora Wildlife Reserve, Rajiv Gandhi Orang National Park, Kaziranga National Park, and Manas National Park.
- IRV 2020 also aimed at reducing the risk to the rhino population, mainly from poachers by spreading the population in multiple parks with enough habitats to encourage population growth.

Rhinos in India:

- Assam has an estimated 2,640 rhinos in four protected areas.
 - ♦ Pabitora Wildlife Reserve,
 - ♦ Rajiv Gandhi Orang National Park,
 - ♦ Kaziranga National Park, and
 - ♦ Manas National Park.
- About 2,400 of them are in the Kaziranga National Park and Tiger Reserve (KNPTR).
- For long, rhinos have been an emotive issue for the people of the state.
- The projection of rhino as the pride of Assam began during the Assam Movement (1979-85).
- Rhino started emerging as a player in the political narrative of Assam as
 - ♦ **Its poaching was linked to** the control of indigenous people over land, resources and influx of immigrants

- ♦ The rhino is now seen as an **"Assamese resource"** and rhino protection as a "sign of good governance".
- ♦ **Records with the Assam Forest Department** say poaching has reduced by 86% in the last three years due to anti-poaching and anti-encroachment drives.



Greater One-Horned Rhino:

- The greater one-horned rhino (or "Indian rhino") is the largest of all the Asian rhino species.
- The Indian rhino has a single horn, which is present in both sexes.
- **Location:**
 - ♦ The Greater one-horned rhino can be found in **India and Nepal terai**, particularly in the foothills of the Himalayas.
 - ♦ **In India, it is** mainly found in Assam, northern West Bengal and Uttar Pradesh.
 - ♦ In the past, Greater one-horned rhinos roamed freely in the floodplains and forests alongside the Brahmaputra, Ganges and Indus River valley
- **Habitat:**
 - ♦ Tropical and Subtropical Grasslands, Savannas, Shrublands and Alluvial flood plains
 - ♦ **Greater one-horned rhinos are semi-aquatic** and often take up residence in swamps, forests and riversides, and anywhere that is near nutritious mineral licks
 - ♦ **The species is solitary**, except when adult males or rhinos nearing adulthood gather at wallows or to graze.
 - ♦ **Males have loosely defined home ranges** that are not well defended and often overlap
- **Diet:** They primarily graze, with a diet consisting almost entirely of grasses as well as leaves, branches of shrubs and trees, fruit, and aquatic plants.

- **IUCN Status** – Vulnerable.
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**: listed since 1975.
- **Wildlife Protection Act, 1972**: Schedule I.

A Conservation Success Story:

- **In the early 19th century**, the Greater one-horned rhino was almost hunted to extinction.
- **With strict protection from Indian and Nepalese wildlife authorities**, Greater one-horned rhino numbers have recovered from under 200 last century to around 3,580 today.
- **Indian Rhino Vision 2020 (IRV 2020)** - In 2005, WWF-India, alongside the Bodoland Territorial Council and the Government of Assam, came together to develop a long-term strategy called the "Indian Rhino Vision 2020".
 - ♦ It aimed to build a 3,000-strong wild population of Greater one-horned rhinos by 2020, spread across seven sites in the state of Assam.
 - ♦ Since 2008, several rhinos have been translocated to Manas National Park, six hours west of Kaziranga to achieve the targets.

Issues and Threats:

- **Human poaching and Hunting**
 - ♦ **The biggest threat** that Greater one-horned rhinos face is human harassment and poaching.
 - ♦ For centuries, rhinos have been hunted for sport and for their horn.
 - ♦ Poaching continues to remain high even today, and the success is unwarranted without continued and increased support for conservation efforts in India and Nepal.
 - ♦ As per RTI in 2019, as many as 102 one-horned rhinoceros have been poached and killed in the country since 2008.
- **Habitat destruction and Loss due to encroachment**
 - ♦ Greater one-horned rhinos live in areas with very fertile soil, people use the same land for farming purposes.
 - ♦ Large swathes of habitat continue to be lost to development, fragmenting the range of the species.
 - ♦ Their grassland habitats are threatened by invasive species and weeds.
- **Conflicts between humans and animals are inevitable**, and consequently damaging to the Greater one-horned rhino population.
- **The Coronavirus pandemic** has been a huge challenge for the IRV 2020

- ♦ It has caused a number of setbacks, after the final translocations (due in April 2020) had to be postponed.

Recent Initiatives:

- **DNA profile of all Rhinos**: In 2019, Ministry of environment, forest and climate change (MoEFCC) launched a project to create DNA profiles of all rhinos in the country by 2021.
- In 2019, India collaborated with Bhutan, Nepal, Indonesia and Malaysia to
 - ♦ **Increase the population of three species of Asian rhinos**, including the Greater one-horned rhinoceros found in the Indian sub-continent.
 - ♦ **The five rhino range nations signed a declaration** 'The New Delhi Declaration on Asian Rhinos 2019'.
- **National Conservation Strategy for one-horned rhino** – in 2020, Ministry of environment, forest and climate change had launched a National Conservation Strategy for one-horned rhino.
 - ♦ It calls for active engagement between India and Nepal to conserve the Greater one-horned rhinoceros.
- Though the government has been active and launched several initiatives to conserve Indian Rhino, several further steps need to be taken.

Way Forward:

- Improve security in all rhino areas in India.
- Expand the distribution of rhinos to reduce risk of stochastic catastrophes.
- Prevent loss of prime habitats.
- Reduce poaching and wildlife trade.
- Provide support to the forest department to address challenges like lack of equipment, shortage of adequate finance and trained staff to implement conservation measures at the grassroots level.

IMPORTANT FACTS

- **World Rhino Day** is held annually on 22nd September to raise awareness for **the five remaining rhinoceros species left in the wild**:
 - ♦ **Sumatran Rhino** - Asia
 - ♦ **Javan Rhino** - Asia
 - ♦ **Black Rhino** - Africa
 - ♦ **Greater one-horned Rhino**
 - ♦ **Southern White Rhino** - Africa.
- **Three species of rhino**—Black, Javan, and Sumatran—are critically endangered.

CORALS MAY WITHSTAND CLIMATE CHANGE

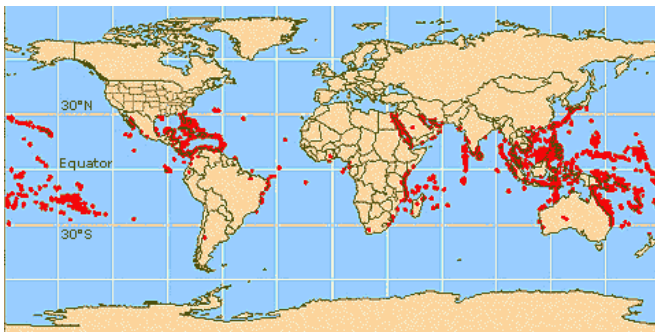
A new study found that corals may withstand the climate change stress.

About:

- A study by researchers at Rutgers University suggests that stony coral could survive climate change.
- The study was published in the Journal of the Royal Society Interface.

Corals and Climate Change:

- **What are corals?** Corals are invertebrate animals belonging to a large group of animals called Cnidaria (which also includes jellyfish and sea anemones). Each individual coral animal is called a polyp, and lives in large groups of genetically identical polyps that form a 'colony', which is formed by a process called budding.
- **Types:** 'Hard' corals, which build coral reefs and 'soft' corals that are devoid of calcareous skeleton and have eight tentacles and a feathery appearance.
 - ♦ Hard corals extract calcium from surrounding seawater and use this to create a hardened calcium carbonate structure for protection and growth.
 - ♦ Soft corals grow wood-like cores for support and fleshy rinds for protection.
- **Distribution:** Found throughout the oceans in deep, cold waters to shallow, tropical waters. Temperate and tropical reefs are formed only in a zone between 30°N to 30°S; the reef-building corals grow at depths shallower than 30 m (100 ft), or where the temperature range is between 16-32°C, and light levels are high.



- **Symbiotic relationship:** Coral polyps have developed this relationship with tiny single-celled plants, known as zooxanthellae. They live inside the tissues of each coral polyp, sharing space, gas exchange and nutrients to survive and gives corals their vibrant colours.

- Corals play an important role in protecting shorelines threatened by erosion and storms, provide nursery, spawning habitat and refuge to fish, and provide food and livelihood to people. They are called as 'rainforests' of the ocean due to their high productivity.
- **Threats:** Warming ocean waters due to climate change put corals at risk of mass bleaching (the zooxanthellae get expelled) and disease. Other threats include more acidic ocean waters, sea-level rise, unsustainable fishing, vessels that damage reefs, invasive species, marine debris and tropical cyclones.
- **Study on coral survival:** The researchers studied the spatial interactions of the proteins embedded within the skeleton of *Stylophora pistillata*, a common stony coral in the Indo-Pacific.
- How corals may survive climate change requires understanding of how they evolved over 400 million years, adapted to changing climate and how they build reefs by secreting calcium carbonate in a process called as biomineralization.
- **Biomineralization:** It is the process by which mineral crystals are deposited in the matrix of living organisms thereby forming organic-inorganic composites like shell, bones, teeth etc.
- **Coral structures** consist of a biomineral containing a highly organized organic mix of proteins that resembles what is in human bones. The study shows for the first time that several proteins are organized spatially - a process that's critical to forming a rock-hard coral skeleton.
- An intricate network of skeletal proteins interacts spatially, and this likely applies to all stony corals. Several proteins work together to create optimal conditions for biomineralization. These proteins are not located randomly but are well-organized spatially.
- The scientists revealed the spatial patterns as new mineral is formed between the living tissue of the animal and its base or an older skeleton.

Significance:

- The study throws light on how the stony corals have evolved over time and how they may be able to survive climate change stress based on the precision, robustness and resilience of corals' impressive process for forming rock-hard skeletons.
- For the first time, the study mapped the spatial organization of coral skeletal proteins.

WHAT IS BLUE FLAG CERTIFICATE?

Fishermen in Odisha opposed the plan for blue flag beach in Ganjam.

About:

- Odisha is planning for Blue Flag Certification of five beaches in three of its districts. The proposed beaches are Niladri in Puri district, Gopalpur and Pati-Sonapur in Ganjam district and Talasari-Udayapur in Balasore district.
- However, local fishermen of Ganjam district have opposed the move citing livelihood issue.

Blue Flag Certification for Beaches:

- What is it?** The 'Blue Flag' is a certification that can be obtained by a beach, marina, or sustainable boating tourism operator. It serves as an eco-label.
- Why?** The Blue Flag programme was started in France in 1985 and in areas out of Europe in 2001 to promote sustainable development in freshwater and marine areas through 4 main criteria- water quality, environmental management, environmental education and safety.
- It aims to connect the public with their surroundings and encourage them to learn more about their environment. Denmark-based non-profit Foundation for Environmental Education.
- How many Blue Flag beaches exist?** Around 47 countries have participated in the program, and 4,573 beaches, marinas, and boats have this certification. Spain has the maximum number of Blue-Flagged sites.
- Process of certification:** The certificate is awarded by an eminent international jury comprising of members of the United Nations Environment Programme (UNEP), United Nations World Tourism Organization (UNWTO), Foundation for Environmental Education (FEE) and International Union for Conservation of Nature (IUCN).

Blue Flag Certified beaches in India:

- At present, there are 8 such beaches in India and there is a plan to add a 100 more in the next 3-4 years.
 - Kappad (Kerala), Shivrajpur (Gujarat), Ghoghla (Diu), Kasarkod and Padubidri (Karnataka), Rushikonda (Andhra Pradesh), Golden (Odisha) and Radhanagar (Andaman & Nicobar Islands).
- The Central Government through an Extraordinary Gazette Notification had declared a list of permitted activities and facilities in the Coastal Regulation Zone (CRZ) of the above beaches, and these would be exempt from prior clearance

under the provisions of CRZ Notification, Island Protection Zone Notification and Island Coastal Regulation Zone Notifications.



Beach Environment and Aesthetics Management Service (BEAMS):

- BEAMS:** In order to achieve the Blue Flag status for 100 more beaches, the central government launched its own eco-label, Beach Environment and Aesthetics Management Service (BEAMS) under the Integrated Coastal Zone Management (ICZM) project.
 - Aim of BEAMS:** To abate pollution in coastal waters, promote sustainable development of beach facilities, protect & conserve coastal ecosystems & natural resources, and seriously challenge local authorities & stakeholders to strive and maintain high standards of cleanliness, hygiene & safety for beachgoers in accordance with coastal environment & regulations.
 - BEAMS is managed by the Society of Integrated Coastal Management (SICOM) under the aegis of the Ministry of Environment, Forests and Climate change, Government of India.
- It is launched in 10 coastal states.

Way Forward:

- While the Blue Flag certification is a welcome step in sustainable development of beaches, it must ensure that the fishermen community is not adversely affected and that the beaches are developed as public spaces that cater to needs of all stakeholders.

EFFECT OF ASIAN DESERT DUST ON INDIAN MONSOON

A new study has detailed the effects of desert swarms on Indian monsoon and vice-versa.

About:

- Dust is known to influence monsoons, hurricanes and even fertilize rainforests
- A new study has detailed how dust coming from the deserts in the West, Central and East Asia plays an important role in the Indian Summer Monsoon.
- **Reverse effect:** The study also explain how the Indian Summer Monsoon has a reverse effect and can increase the winds in West Asia to produce yet more dust.

Effect of desert swarms from west on Indian monsoon:

- **Dust swarms from the western desert** when lifted by strong winds can absorb solar radiation and become hot.
 - ♦ **Elevated Heat Pump:** This can cause heating of the surrounding atmosphere, change the air pressure and wind circulation patterns. This phenomenon is called **Elevated Heat Pump**.
 - ♦ **Strong winds and Increased Precipitation**
 - The Indian summer monsoon is characterized by strong winds in the summer.
 - This elevated heat pump will change the winds and thus influence moisture transport from the sea to Indian subcontinent and thereby increase precipitation and rainfall.
- **Effect of Iranian Plateau** - Not just the dust from the Middle East [West Asia], the Iranian Plateau can also influence the Indian Summer Monsoon.
 - ♦ Iranian Plateau is located between the Middle East and the Tibetan Plateau.
 - ♦ This region is at a higher elevation which makes it easier for solar radiation to reach its surface and increase its temperature.
 - ♦ The hot air over the Iranian Plateau can heat the atmosphere over the plateau, strengthen the circulation over the deserts of the Arabian Peninsula and increase dust emission from the Middle East [West Asia]
 - ♦ This increase in dust emissions can thus strengthen Indian monsoon.

Reverse effect:

- A monsoon can influence dust emissions.
 - ♦ A stronger monsoon will lead to heating of pattern of air in the upper atmosphere and will produce something like a wave.

- ♦ These waves have distinct parts facing either high pressure or low pressure and are responsible for transporting air back to the Middle East [West Asia].
- ♦ This air goes downwards and strikes the surface to pick up more dust particles, in turn starting the process again.
- **Positive feedback loop:** This increase in dust can then again influence Indian monsoon developing a positive feedback loop. Thus, the dust particles boost the power of Indian monsoons, and the monsoons increase the winds in the Middle East and subsequently produce more dust aerosols.

Effect of anthropogenic dust / aerosols from vehicles, mining, construction:

- **Difference of opinion**
 - ♦ Some studies have found that the anthropogenic aerosols emitted from the Indian subcontinent can decrease summer monsoon precipitation.
 - ♦ However, other studies found that absorbing aerosols such as dust can strengthen the monsoon circulation.
- This study explored the following mechanisms influencing the Indian summer monsoon.
 - ♦ **Snow-Darkening Effect** – Increase rainfall
 - ♦ Black carbon and dust particles suspended in the air—known as aerosols—land in snow-covered regions.
 - ♦ This in turn darkens the snow, reducing their reflectivity and leading to more absorption of sunlight.
 - ♦ The process increases the warming of the land and the troposphere above.
 - ♦ This leads to enhanced low-level south-westerly winds that amplify the dust accumulation over the Himalayas–Indo-Gangetic Plain leading to increase in rainfall.
- **Ice-Cloud Nuclei** – Increase rainfall
 - ♦ Aerosolized dust can serve as ice-cloud nuclei, also known as the seeds for rain droplets.
 - ♦ This phenomenon changes the amount or type of precipitation that falls from a cloud and can "alter the microphysical properties of ice clouds and consequently the Indian summer monsoon rainfall".
- **Solar-Dimming Effect** – Decrease rainfall
 - ♦ Aerosols block the solar radiation from reaching the land surface.
 - ♦ This causes the surface temperature to cool down which interferes with hydrological processes by reducing evaporation and in turn reducing rainfall.

May, 2021

NATIONAL MISSION FOR SUSTAINING HIMALAYAN ECOSYSTEM (NMSHE)

NMSHE's ICAR Team has been awarded for agricultural information dissemination in Leh, Ladakh.

About:

- **Agriculture Today, a National Agriculture Magazine** has awarded a team of scientists from Indian Council for Agricultural Research (ICAR) working under NMSHE.
- **From lab to farm:** The team has been awarded for Excellence in Dissemination of agricultural practices and technologies from Lab to Farm
 - ♦ Their work has been recognised for improving livelihood and subsistence production systems in remote areas like Leh.

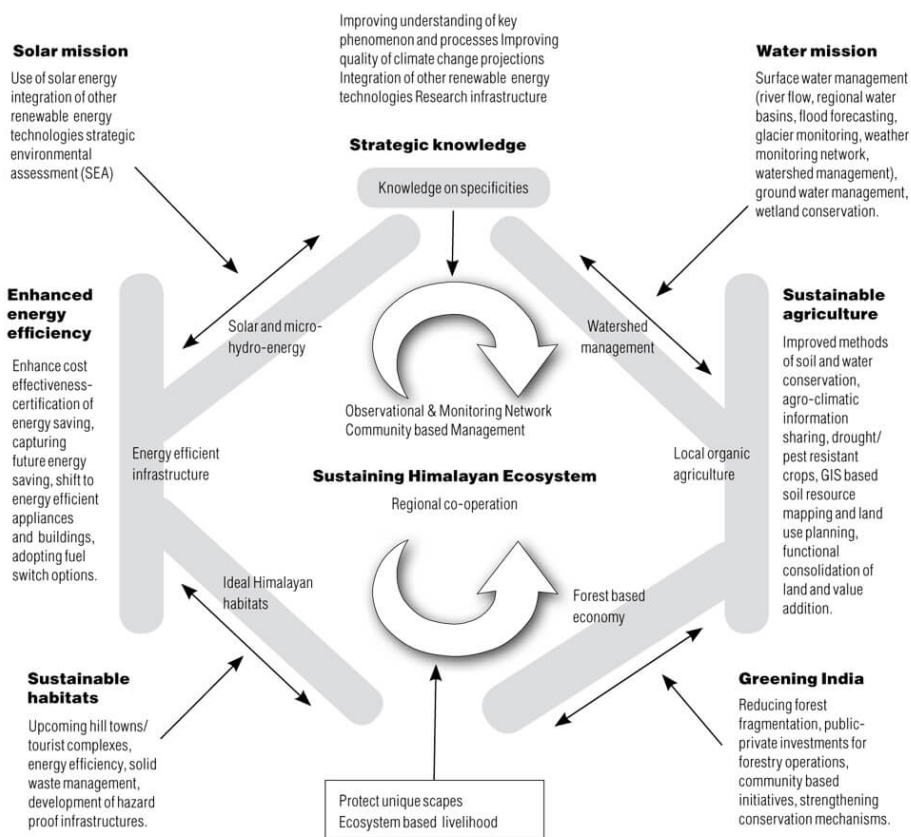
National Mission for Sustaining Himalayan Ecosystem (NMSHE):

- It is one of the eight missions launched in 2010 under the **National Action Plan on Climate Change (NAPCC)**. (Formally approved in 2014)
- It is aimed at scientific capacity building, evolving policy and management measures for sustaining and safeguarding the Himalayan glaciers and mountain ecosystem.
- **It is the only mission with a geographical focus** as against the other national missions under NAPCC which are focused on sectors such as energy, water and agriculture.
- Its primary objective is to
 - ♦ Develop a sustainable national capacity in a time-bound manner to continuously assess the health status of the Himalayan ecosystem and
 - ♦ Enable policy formulation to assist Himalayan states to implement sustainable development programmes
- The mission includes enhanced monitoring and assessing of the Himalayan ecosystem through
 - ♦ establishment of the monitoring network,
 - ♦ promoting community-based management,
 - ♦ human resource development and
 - ♦ strengthening regional cooperation

- The Government has prepared guidelines entitled "Governance for Sustaining Himalayan Ecosystem", (G-SHE) to implement this mission.
 - ♦ These has been shared with all the State Governments and Union territories (UTs) in the Himalayan region.
- **Ministry of Science and Technology** has been given the nodal responsibility of coordinating this mission.
- **Coverage:** The Mission covers Himalayan states and Union Territories
 - ♦ **2 UTs:** Jammu and Kashmir and Ladakh
 - ♦ **11 States:** Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam and West Bengal

National Action Plan on Climate Change (NAPCC):

- The NAPCC was launched in June 2008 to deal with issues related to climate change.



- The plan identifies measures that promote development objectives while also yielding co-benefits for addressing climate change effectively.
- There are eight “National Missions” which form the core of the National action plan.
 - ♦ They focus on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.
- Each mission is anchored under a Ministry, which is responsible for its implementation, budgetary provisions, and its actionable priorities.
- **The Ministry of Environment, Forest and Climate Change (MoEF)** is the coordinating Ministry of NAPCC.
- The broad policy initiatives of the Central Government are supplemented by actions at the level of state governments and Union Territories.



Other Missions:

- **National Solar Mission:** Started in 2010, it aims to promote the development and use of solar energy for power generation and other uses with the ultimate objective of making solar competitive with fossil-based energy options.
- **National Mission on Enhanced Energy Efficiency:** Approved in 2009 and implemented by Ministry of Power, it calls for
 - ♦ Mandating specific energy consumption decreases in large energy-consuming industries, with a system for companies to trade energy-savings certificates;
 - ♦ Energy incentives, including reduced taxes on energy-efficient appliances; and
 - ♦ Financing for public-private partnerships to reduce energy consumption through demand-side management programs in the municipal, buildings and agricultural sectors.
- **National Mission on Sustainable Habitat:** Approved in 2011 and implemented by Ministry of Housing and Urban Affairs, it aims to make habitats more sustainable through
 - ♦ Improvements in energy efficiency of buildings in residential and commercial sector
 - ♦ Management of Municipal Solid Waste (MSW)
 - ♦ Promotion urban public transport.
- **National Water Mission:** Approved in 2011 and implemented by Ministry of Jal Shakti, it is aimed at
 - ♦ Conservation of water, minimizing wastage and ensuring its more equitable distribution through integrated water resources management.
 - ♦ Increasing the water use efficiency by 20%
 - ♦ Tackling variability in rainfall and river flows through enhancing surface and underground water storage, rainwater harvesting and more efficient irrigation systems like sprinklers or drip irrigation.
- **National Mission for a Green India:** Approved in 2014 and implemented by Ministry of Environment and Forests
 - ♦ It aims at protecting, restoring and enhancing India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures.
 - ♦ It envisages a holistic view of greening and focuses on multiple ecosystem services, especially, biodiversity, water, biomass, preserving mangroves, wetlands, critical habitats etc. along with carbon sequestration as a co-benefit
- **National Mission for Sustainable Agriculture:** Approved in 2010 under Ministry of Agriculture and Farmers Welfare
 - ♦ It has been formulated for enhancing agricultural productivity especially in rainfed areas focusing on integrated farming, water use efficiency, soil health management and synergizing resource conservation.
 - ♦ The plan aims to support climate adaptation in agriculture through the development of climate-resilient crops, expansion of weather insurance mechanisms, and agricultural practices.
- **National Mission on Strategic Knowledge for Climate Change:** Approved in 2010 and implemented by Ministry of Science and Technology
 - ♦ It seeks to build a dynamic and vibrant knowledge system that informs and supports national policy and action for responding effectively to climate change challenges, while not compromising on the nation's growth goals.

EFFICIENCY OF POLLUTION CONTROL BOARDS

The National Green Tribunal (NGT) has directed Haryana State Pollution Control Board (HSPCB) to strengthen its capacity.

About:

- NGT has asked HSPCB to strengthen its capacity, both in terms of human resource and setting up of modern laboratories.
 - ♦ The order was to ensure better monitoring for improved compliance of environmental norms.
- NGT also directed the Central Pollution Control Board (CPCB) to
 - ♦ prepare uniform recruitment rules to be followed by all states
 - ♦ mechanism for annual performance audit of SPCBs or pollution control committees (PCC)
- In February 2021 also, NGT had asked all the states and Union territories to fill up vacant posts, commission and upgrade laboratories using environmental compensation funds.

Reasons for the order:

- **Poor groundwater quality:** Earlier reports of the Central Ground Water Board (CGWB) had established deterioration of the ground water quality in Haryana.
 - ♦ The situation is similar across the country in other states too.
- **No effective monitoring mechanism of projects:** Comptroller and Auditor General (CAG) of India's 2016 report also recorded ineffectiveness of monitoring mechanism
 - ♦ It showed operation of several projects without valid consent to establish or consent to operate (CTO) certificates.
 - ♦ There was large-scale violation of environmental norms and units also have provisions for auto-renewal of CTO.
 - ♦ Also relaxed inspection policy with inspection intervals for 'highly polluting', 'red' and 'orange' category industries of 3, 5 and 7 years, respectively
- **Other issues with CPCBs and SPCBs**
 - ♦ **Non-Update of rules of CPCBs and SPCBs:** The existing SPCBs recruitment rules have not been updated for decades.
 - ♦ Old recruitment rules are narrowly framed as they do not even allow to hire a communication officer or health officer if needed.
 - ♦ The salary structure mentioned in decade old recruitment rules is not appropriate even for the position of the clerk, forget about qualified graduates and engineers.
- **Lack of qualified human resource** at SPCB and CPCB has always been a major concern

- ♦ Employees barely gain technical expertise in the working of SPCBs where paperwork, litigation and an acute shortage of staff exacerbates the situation.
- ♦ Regional offices are not provided with legal assistants and thus scientists and engineers have to take up the role of lawyers.
- ♦ This work load severely disturbs work-life balance and the mental peace of employees and takes the focus away from working on R&D and effective implementation.
- **Poor Laboratories and sampling equipment across all SPCBs**
 - ♦ There are very few labs available in different State Pollution Control Boards (SPCB) across the country and they cannot be said to be qualified to use 'state-of-the-art' as an adjective.
 - ♦ There is a non-availability of transportation and preservation facilities for samples thereby resulting in a flawed analysis.
 - ♦ Lack of training for field officers and field assistants culminates in improper sampling that further affects the analysis.
- **Undermining powers of pollution boards:** In the name of 'ease of doing business', powers and authorities of SPCB have always been compromised.

Highlights of the order:

- Inspection at higher frequencies of industries
- Capacity enhancement of SPCBs/PCCs with consent funds
- Capacity enhancement of CPCB utilising environment compensation funds
- Annual performance audit of state PCBs/PCCs
- CPCB to prepare a format containing qualifications, minimum eligibility criteria and required experience for key positions.

Significance:

- The NGT have tried to erase the bottlenecks, which were being used to halt the strengthening of environmental regulatory
- The order acts as a fresh start to the long-delayed initiative of strengthening CPCB/SPCBs/PCCs.
- It would empower the control pollution boards to ensure effective checks on environmental degradation.

Way Forward:

- The NGT orders should be implemented at the earliest to strengthen the capacities of SPCBs across the country

- An impartial panel need to be setup to evaluate to hire experts that are competent and capable of fulfilling their duties and have enough knowledge about environmental problems.
- The CPCB should be made an autonomous organization that is not regulated by the MoEFCC or the Central Government.
 - ♦ It will prevent the conflict of interests of government where the government usually chooses economic growth over environmental protection.
- The laboratories, instruments and standards being used currently for measuring and monitoring air quality need to be updated to the changing times and their quality need to be enhanced.
- The CPCB should set norms for emissions for the entire country to avoid discrepancy in reports submitted by the State Boards.
- Real time data monitoring mechanisms could be put in place, to ensure that the data submitted by various States is not tampered with.

NATIONAL GREEN TRIBUNAL (NGT)

- It is a statutory body established in 2010 under the National Green Tribunal Act 2010
- It was set up for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources
- It can enforce any legal right relating to environment and **give relief and compensation** for damages to persons and property and for matters connected therewith or incidental thereto.
- **Six months limit:** It is mandated to make disposal of applications or appeals finally within 6 months of filing of the same.
- It is not bound by the procedure laid down under the Code of Civil Procedure, 1908, and guided by principles of natural justice.
- **Members**
 - ♦ It has a full-time chairperson and up to 20 judicial and expert members each
 - The tribunal is not supposed to have less than 10 members.
 - They are appointed for a term of 5 years and are not eligible for reappointment
 - ♦ The chairperson of the panel is appointed by the government in consultation with the chief justice of India.
 - ♦ The members, judicial and expert, are picked by the government on the recommendation of a selection committee constituted for the purpose.
- **It has 5 places of sitting:** New Delhi is the Principal Place of Sitting of the Tribunal. Bhopal, Pune, Kolkata and Chennai are the other four.
- **7 laws:** It has the jurisdiction to try civil cases under the following seven laws which are concerned with the environment:
 - ♦ The Water (Prevention and Control of Pollution) Act of 1974
 - ♦ The Water (Prevention and Control of Pollution) Cess Act of 1977
 - ♦ The Forest (Conservation) Act of 1980
 - ♦ The Air (Prevention and Control of Pollution) Act of 1981
 - ♦ The Environment (Protection) Act of 1986
 - ♦ The Public Liability Insurance Act of 1991
 - ♦ The Biological Diversity Act of 2002

CENTRAL POLLUTION CONTROL BOARD (CPCB)

- It is a statutory organization constituted in 1974 under the Water (Prevention and Control of Pollution) Act, 1974.
 - ♦ It was later entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.
- It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986.
- **Principal Functions**
 - ♦ to promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution, and
 - ♦ to improve the quality of air and to prevent, control or abate air pollution in the country.
- **State Pollution Control Boards** are also formed under Water act 1974 on similar lines at various state capitals of the country to advise respective state governments to control and protect environment.

'FREEDOM PATROL' IN INDIAN EEZ

India has protested against the U.S. naval patrol in the Indian Exclusive Economic Zone (EEZ).

About:

- The United States recently conducted patrols in the Indian Exclusive Economic Zone (EEZ), without India's preliminary consent, to assert its 'navigational right and freedoms'.
- The US Navy's 7th fleet carried out the patrols near the Lakshadweep Islands.
 - ♦ US Navy's 7th fleet is infamous in India for sailing into the Bay of Bengal in 1971 when the war for liberation of Bangladesh was underway.

US Stand:

- **US challenged India's "excessive maritime claims"** and said its Freedom of Navigation Operations (FONOP) were consistent with the international law (United Nations Convention on the Law of the Sea (UNCLOS) 1982).
- **US is not a signatory to UNCLOS** but believes that the law lists freedoms in the high seas, including freedom of navigation, implying that this applies to the EEZ.
 - ♦ Thus, it believes US navy have the freedom to operate in the EEZ
- Also, the United States does not recognise India's 2009 Gazette notification but has never specifically protested the straight baselines around Lakshadweep.
 - ♦ **According to UNCLOS, only archipelagic states**, like Indonesia, can use straight baselines to enclose island groups rather than continental states like India.
 - ♦ But India has drawn baseline around Lakshadweep
- US has been regularly conducting FONOPs in Indian EEZ and against several other countries but its first time it publicly acknowledged that a military ship has entered India's EEZ.

India's stand:

- India has strongly protested against US patrol and said it is violative of UNCLOS and India's domestic law (Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, 1976).
- While ratifying the UN Convention of the Law of the Sea (UNCLOS) in 1995, India clearly declared that in its understanding
 - ♦ The treaty does not allow other countries to carry out military exercises or manoeuvres in its exclusive economic zone without prior permission from Indian authorities.
- Thus, as per Indian domestic rules

- ♦ India requires military ships of all nations to obtain prior consent when entering its EEZ, extending up to 200 nautical miles from shore.
- ♦ While innocent passage of foreign ships, including navies, through EEZ is allowed by India, no commercial or research activities, including fishing, is allowed
- Also, India had notified its baselines through a 2009 gazette notification
 - ♦ **It included straight baselines around Lakshadweep** to declare a new area of the sea as part of the country's waters.
 - ♦ It consists of the strategic nine-degree channel that goes through the Lakshadweep group of islands and is part of the international shipping lane connecting the Gulf of Aden to South East Asia.

United Nations Convention on the Law of the Sea (UNCLOS) 1982:

- It is a body of public international law governing the geographic jurisdictions of coastal States and came into force in 1994.
- **The convention, described as a "constitution for the oceans,"** represents an attempt to codify international law regarding territorial waters, sea-lanes, and ocean resources
 - ♦ It is also sometimes referred to as the Law of the Sea Convention or the Law of the Sea treaty.
 - ♦ It enshrines the notion that all problems of ocean space are closely interrelated and need to be addressed as a whole.
- It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. It divides marine areas into five main zones namely-
 - ♦ **Internal Waters** (waters that fall landward of the baseline, such as lakes, rivers, and tidewaters) –
 - Coastal States have the same sovereign jurisdiction over internal waters as they do over other territory.
 - **There is no right of innocent passage** through internal waters.
 - ♦ **Territorial Sea (from baseline to 12 nautical miles) –**
 - Coastal States have sovereignty and jurisdiction
 - **Other States have right to innocent passage** through the territorial sea and transit passage through international straits.

- ♦ **No right of innocent passage for aircraft** flying through the airspace above
- **Contiguous Zone (up to 24 nm from the baseline)**
 - ♦ State has the right to both prevent and punish infringement of fiscal, immigration, sanitary, and customs laws within its territory and territorial sea.
 - ♦ It only gives jurisdiction to a State on the ocean's surface and floor
 - ♦ It does not provide air and space rights.
- **Exclusive Economic Zone (EEZ) (up to 200 nm from baseline)**
 - ♦ Coastal State has the exclusive right to exploit or conserve any resources found within the water, on the sea floor, or under the sea floor's subsoil including offshore energy generation.
 - ♦ It does not give a coastal State the right to prohibit or limit freedom of navigation or overflight, subject to very limited exceptions.
 - ♦ **Continental shelf:** States are allowed to conduct economic activities for a distance of 200 nautical miles from the baseline, or the continental margin where it extends beyond 200 nautical miles.
 - ♦ **High Seas (beyond 200 nm):** They are to be open and freely available to everyone, governed by the principle of equal rights for all.
- The Convention has created three new institutions on the international scene:
 - ♦ the International Tribunal for the Law of the Sea,
 - ♦ the International Seabed Authority,
 - ♦ the Commission on the Limits of the Continental Shelf.

THE TERRITORIAL WATERS, CONTINENTAL SHELF, EXCLUSIVE ECONOMIC ZONE AND OTHER MARITIME ZONES ACT, 1976

- It says that the rights over the land, minerals, and such resources found beneath the ocean, inside the territorial waters, continental shelf, and exclusive economic zones of the nation are vested in the Central Government of India.
- It focuses on India's specific rights and jurisdiction over the maritime zones and such boundaries shared by other neighbouring countries.
- Under this act, an agreement is required to determine the perfect maritime boundaries between India and any State with their coast just adjacent to India according to the territorial waters, contiguous zones, continental shelves, exclusive economic zones, and other maritime zones.
- It provides the right of innocent passage to all foreign ships (other than warships including sub-marines and other underwater vehicles) through the territorial sea.
 - ♦ It requires foreign warships to enter or pass through the territorial waters after giving prior notice to the Central Government and they are also required to navigate on the surface and show their flag
- The contravention of the provisions of the Act is punishable with an imprisonment term extending to three years, or with a fine, or both.

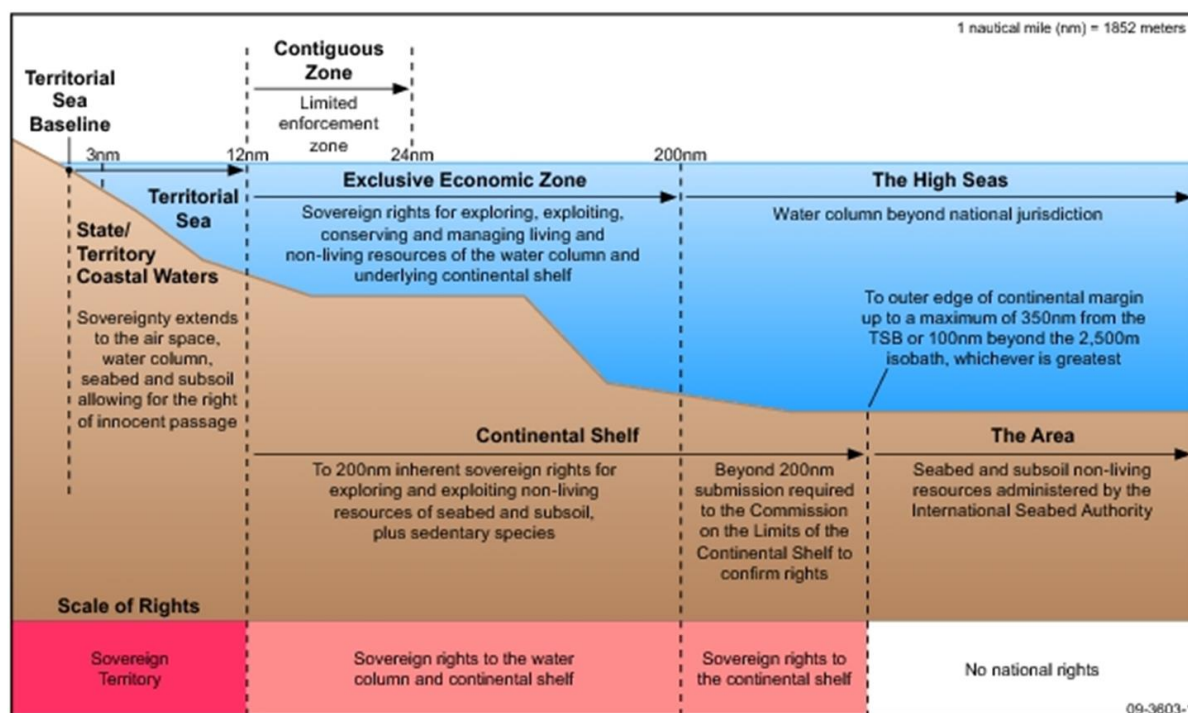


Figure 1: Offshore extent of the maritime zones recognized under international law

COUNTRY REPORTS ON HUMAN RIGHTS PRACTICES

The Report is released by US State Department.

About:

- The 2020 Country Reports on Human Rights Practices (The Human Rights Reports) was compiled by the US State Department and submitted to the US Congress.
- The annual country-wise reports cover internationally recognized individual, civil, political, and worker rights, as set forth in the Universal Declaration of Human Rights and other international agreements.
- The reports are compiled for countries receiving assistance from USA and all United Nations member states in accordance with the Foreign Assistance Act of 1961 and the Trade Act of 1974 of the US Congress.

Highlights of the Report for India:

- **Free and fair elections:** The Report mentions that observers considered the parliamentary elections, which included more than 600 million voters, to be free and fair, although there were reports of isolated instances of violence.
- **Security forces:** According to the Report, while civilian authorities maintained effective control over the security forces, members of the security forces committed some abuses.
- **Accountability:** Government has tried to address the issue of abuses but the lack of accountability for official misconduct persists at all levels of the government, resulting in widespread impunity.
- **Convictions:** Lax enforcement, a shortage of trained police officers, and an overburdened and under-resourced court system contributes to a low number of convictions.
- **Insurgents and terrorists:** Separatist insurgents and terrorists in the Union Territory of Jammu and Kashmir, the Northeast, and Maoist-affected areas committed serious abuses, including killings and torture of armed forces personnel, police, government officials, and civilians, and recruitment and use of child soldiers.
- **Jammu and Kashmir:** The government continued taking steps to restore normalcy in Jammu and Kashmir by gradually lifting some security and communications restrictions, releasing political activists from detention, restoring internet access (although 4G and high-speed mobile internet restrictions continued in certain parts), redrawing of electoral constituencies, conduct of local district council elections (in which Kashmiri opposition coalition parties has won majority seats).

Human rights issues highlighted-

- Unlawful and arbitrary killings, including extrajudicial killings perpetrated by police;
- Torture and cases of cruel, inhuman, or degrading treatment or punishment by some police and prison officials;
- Arbitrary arrest and detention by government authorities;
- Harsh and life-threatening prison conditions;
- Political prisoners or detainees in certain states;
- Restrictions on freedom of expression and the press, including violence, threats of violence, or unjustified arrests or prosecutions against journalists, use of criminal libel laws to prosecute social media speech, censorship, and site blocking;
- Overly restrictive rules on nongovernmental organizations;
- Restrictions on political participation;
- Widespread corruption at all levels in the government;
- Lack of investigation of and accountability for violence against women;
- Tolerance of violations of religious freedom;

UNIVERSAL DECLARATION OF HUMAN RIGHTS

- The Declaration was proclaimed by the United Nations General Assembly in Paris in December 1948 (General Assembly resolution 217 A) as a common standard of achievements for all peoples and all nations.
- For the first time, it set out fundamental human rights to be universally protected.
- It contains a set of 30 Articles, which have inspired more than seventy human rights treaties at global and regional levels. India played a crucial role in drafting the UDHR.

Way Forward:

- The report cites data from various national and international organizations, government data, national Acts, Supreme Court rulings and directives etc.
- India has rejected similar reports in the past.
- The Fundamental Rights (Art 12-35), Directive Principles of State Policy (Art 36-51), National Human Rights Commission, Protection of Human Rights Act, 1993 (amended in 2019), independent judiciary etc. are some of the many provisions in Indian polity which continue to nurture and protect human rights in India. India also recognizes the UDHR.

ARIES FACILITY

ARIES facility (Aryabhata Research Institute for Observational Sciences) will host the support centre for Aditya-L1 mission, which is to be launched next year (2022).

About:

- **History:** Aditya was conceptualised in January 2008 by the Advisory Committee for Space Research. It was initially envisaged as a small 400 kg, low-Earth orbiting satellite with a coronagraph to study the solar corona. The scope of the mission has since been expanded and it is now planned to be a comprehensive solar and space environment observatory to be placed at the Lagrangian Point L1, so the mission was renamed "Aditya-L1".
- **Aditya-L1** is an India's First scientific mission **to study the Sun**. It has been designed and will be built in collaboration between the **Indian Space Research Organisation (ISRO)** and various Indian research institutes.
- **Aditya-L1** mission is categorised as a 400 kg- class satellite carrying one payload, the Visible Emission Line Coronagraph (VELC) and was planned to launch in a 800 km low earth orbit that will be launched using the PSLV-XL (Polar Satellite Launch Vehicle) from Sriharikota.
- A Satellite, placed in the halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system, has the major advantage of continuously viewing the Sun without any occultation/eclipses.
- The Aditya-1 mission has now been revised to "Aditya-L1 mission" and will be inserted in a halo orbit around the L1, which is 1.5 million km from the Earth.
- The satellite carries additional six payloads with enhanced science scope and objectives to Study the Sun's Corona, Solar Emission, Solar Winds and Flares and Coronal Mass Ejections (CME).

Importance of Studying the Sun:

- Every planet, including Earth and the exoplanet beyond the Solar System, evolves and this evolution is governed by its parent star.
- Every Storm that emerges from the Sun And heads towards Earth passes through L1 and a Satellite placed **in the halo orbit around L1** of the Sun- Earth system has the major advantages of continuously viewing the Sun **without any occultation/eclipses**.
- Sun affects the Weather of the entire system. Variations in this weather can change the orbits of satellites or shorten their lives. **Knowledge of Solar events is Key to understanding Space Weather.**

- To learn about and track **Earth-directed storms**, and to predict their impact, continuous solar observations are needed.

Aditya-L1 Support Centre (ASC):

- It will provide training through regular workshops for the guest user and it will also provide **ready to use python and java apps** for the satellite data & demos & handouts to facilitate the guest user.
- It also developed several advanced image processing algorithms to detect fine scale structures in the solar atmosphere.
- It also developed an algorithm to study the accelerating solar eruptions in lower corona called CME Identification in inner solar corona (CIISCO) where CME stands for coronal mass ejection.
- Such techniques are important to capture dynamics at different spatial and temporal scales.

Challenges in Launching the Mission:

- **Scientific challenge:** Due to huge distance between Sun and Moon (approximately 15 crore kms on average, compared to the only 3.84 lakh kms to the Moon).
- **Risk of Collision:** AdityaL1 will have some moving components while payloads in earlier ISRO missions have largely remained stationary in space.
- Super Hot Temperature and Radiation in the solar atmosphere.

Others Missions to Sun:

- **Nasa's Parker Solar Probe:** It's aim is to trace how energy and heat move through the **Sun's corona** and to study the source of the solar wind's acceleration. It is part of **NASA's 'Living with a Star' programme**.
- **Nasa's EZEI Mission** (Electrojet Zeeman Imaging Explorer): It would study the atmosphere of the earth and electric currents in it, which link the aurora **to the magnetosphere**.
- **Japan's Solar-C EUVST** (Extreme Ultraviolet High-Throughput Spectroscopic Telescope Epsilon): It would be studying the **solar wind** released by the **solar atmosphere**, as well as studying how this atmosphere **drives solar material eruption**.

ARYABHATA RESEARCH INSTITUTE OF OBSERVATIONAL SCIENCES (ARIES)

ARIES:

- **Aryabhata Research Institute of Observational Sciences (ARIES)** is a leading research institute in Nainital Uttarakhand which specializes in Astronomy, Solar Physics, Astrophysics and Atmospheric Sciences. It is an autonomous body under the Department of Science and Technology (DST), Government of India, the institute is situated at Manora Peak about 9 km from Nainital, a popular hill station.

Lagrangian Point 1:

- Lagrange Points, named after Italian-French mathematician **Joseph-Louis Lagrange**, are positions in space where the gravitational forces of a two-body system (like the Sun and the Earth) produce enhanced regions of attraction and repulsion.
- It is used by spacecraft to **reduce fuel consumption** needed to remain in position.
- Satellite placed in the halo orbit around the Lagrangian point 1(L1) has the major advantage of continuously viewing the Sun **without any occultation/eclipses**.
- The L1 point is home to the Solar and Heliospheric Observatory Satellite(SOHO), an international collaboration project of National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA).
- L1 refers to Lagrangian/Lagrange Point 1, one of 5 points in the orbital plane of the Earth-Sun system. It is **about 1.5 million km from earth**, or about 1/100th of the way to the Sun.

Solar Winds and Flares:

- The **solar wind** is a stream of charged particles released from the upper atmosphere of the Sun that flows out in all directions.
- The composition of the solar wind plasma also includes a mixture of materials found in the solar plasma trace amounts of heavy ions and atomic nuclei C, N, O, Ne, Mg, Si, S, and Fe.
- The solar wind is observed to exist in two fundamental states, termed the slow solar wind and the fast solar wind, though their differences extend well beyond their speeds.
- The strength of the solar wind varies depending on the activity on the surface of the sun.
- The Earth is protected from the solar wind by its strong magnetic field. However some types of activity like solar flares, which can be dangerous to astronauts & can cause damage to satellite.

Corona:

- A corona is an aura of plasma that surrounds the sun and other celestial bodies.
- A corona is a Latin word meaning "CROWN" from the ancient Greek.
- The Sun's corona extends millions of km into space and is most easily seen during a Total Solar Eclipse.
- The Sun's corona is much hotter than the visible surface of the sun. The intense temperature of the sun's corona is due to the presence of highly ionized ions.

Coronal Mass Ejection:

- A **coronal mass ejection (CME)** is a significant release of plasma and accompanying magnetic field from the **solar corona**.
- They often follow **solar flares** and are normally present during a **solar prominence** eruption.
- The plasma is released into the **solar wind**, and can be observed in coronagraph imagery.
- An ARIES team has recently developed an algorithm to study the accelerating solar eruptions in the lower corona called **CMEs Identification in Inner Solar Corona (CIISCO)**.

Way Forward:

- Aditya-L1 project will enable a comprehensive understanding of the dynamical processes of the sun and address some of the outstanding problems in solar physics.
- Aditya-L1 with additional experiments can now provide observations of Sun's Corona (soft and hard X-ray, Emission lines in the visible and NIR), Chromosphere (UV) and photosphere (broadband filters).
- Particle payloads will study the particle flux emanating from the Sun and reaching the L1 orbit.
- The magnetometer payload will measure the variation in magnetic field strength at the halo orbit around L1.
- To study the variation of solar wind properties as well as its distribution and spectral characteristics.
- To understand the composition of solar wind and its energy distribution.
- To monitor the X-ray flares for studying the heating mechanism of the solar corona.

CHIMERA RESEARCH

Recently, scientists in Chimera Research have for the first time grown human cells in monkey embryos.

About:

- **Project:** Researchers at the Salk Institute for Biological Studies in the US have **for the first time grown human cells in monkey embryos**.
- By integrating human cells into the embryos of macaque monkeys, researchers have created what is called a chimeric tool.
- **NOTE:** Chimeras are organisms that are made up of the cells of two distinct species, in this case humans and monkeys.
- If this hybrid embryo was placed in the womb of a monkey, it could possibly grow into a new kind of an animal (however this was not the aim of this study).
- In this study, the monkey embryos containing human stem cells **stayed alive and grew outside the body for a period of 19 days**.

PAST EXPERIMENT

- **Objective:** To create organs that could be transplanted to humans
 - ♦ Previously, in 2017 study researchers **integrated human cells into pig tissues** as they thought that pigs, whose organ size, physiology and anatomy are similar to that of humans, could **help them in creating organs that could ultimately be transplanted to humans**.
- **Result:** But this experiment failed and they believe it is because of the large evolutionary distance between pigs and humans (about 90 million years). Therefore, after this experiment, they decided to pick a species that was more closely related to humans, hence Macaque Monkeys were chosen.

in a human cell.

- It can help in studying the course of disease progression using the engineered cells in a chimeric model, which may be able to tell them more about the disease than results obtained from an animal model.

WHAT ARE THE ETHICAL CONCERNS ABOUT THIS?

- **It against the naturally and unintentional cross Breeding:**
 - ♦ Some rare hybrid animals exist naturally and were probably the result of unintentional cross breeding between animals of different species.
 - ♦ In 2014, a rare hybrid animal called “Geep” was born in an Irish farm. Geep was a hybrid between a goat and a sheep, a result of the two mating. However, the birth of this geep was not artificially induced and the cross-breeding is believed to have happened unintentionally.
 - ♦ Mules are another example of a hybrid animal that are the result of mating between a female horse and a male donkey. These hybrid animals are the result of intentional breeding by humans, which they first undertook in the ancient times.
 - ♦ While mules can live a long healthy life, generally, different species don't cross-breed and if they do, their offspring don't survive for long and are prone to infertility.
- **It against the “the philosophical and ethical issue of moral status:** how should we treat other life forms?
 - ♦ Chimera research has the potential to worsen injustice against animals and also point out the fairness in using part-human animals to meet human needs.

The Purpose of Chimeric research:

- To grow cells of two different species together offers scientists a powerful tool for research and medicine.
- It could help in drug evaluation and address the critical need for organ transplantation.
- It could help in advancing current understanding about early human development, disease onset and progression and ageing.
- Chimeric tools provide a new platform to study how certain diseases arise. For instance, a particular gene that is associated with a certain type of cancer could be engineered

Way Forward:

- Genetic modification like chimera studies continues to be a subject of major debate. In developing countries like India, genetically modified crops are also a contentious topic.
- Before any experiments are performed on live-born chimeras, or their organs extracted, it is essential that their mental capacities and lives are properly assessed.
- Importantly, there are many systems based on human embryonic stem cells to study human development that are ethically acceptable and can be used.

NATIONAL RARE DISEASE POLICY 2021

The Union Health Minister has recently approved National Rare Disease Policy 2021

About:

- Rare diseases are defined differently in various countries. Till now India has no specific definition for the same because of the high population.
- **Organization for Rare Diseases India (ORDI) has defined it for India** - any disease that affects 1 in 5000 people will be considered a rare disease.
- **The World Health Organization (WHO) defines rare disease** as often debilitating lifelong disease or disorder with a prevalence of 1 or less, per 1000 population.
- **Three elements are generally used to define a rare disease:**
 - ♦ Total number of people having the disease
 - ♦ How much prevalent it is
 - ♦ Non availability of treatment for the same
- Thus, a country should have its own definition for Rare Diseases based on its:
 - ♦ Population
 - ♦ Health care infrastructure
 - ♦ Other resources like funding etc

National Rare Disease Policy 2021:

- It is a comprehensive policy for prevention and management of rare diseases.
- **The policy aims at:**
 - ♦ lowering the incidence and prevalence of rare diseases based on an integrated and comprehensive preventive strategy
 - ♦ reducing the high cost of cure of rare diseases with increased indigenous Research and development for medicines.
 - ♦ awareness generation,
 - ♦ premarital, post-marital, pre-conception and post-conception screening and counselling programmes to prevent births of children with rare diseases,
 - ♦ Judicious utilization of resources
 - ♦ Proper timely funding for RnD of same
 - ♦ competing health care priorities,
 - ♦ enable access to affordable health care to patients of rare diseases which are amenable to one-time treatment or relatively low-cost therapy.

- **Categorization:** The policy categorises rare diseases in three groups:
 - ♦ **Group 1:** Disorders amenable to one-time curative treatment.
 - ♦ **Group 2:** Those requiring long term or lifelong treatment.
 - ♦ **Group 3:** Diseases for which definitive treatment is available but challenges are to make optimal patient selection for benefit, very high cost and lifelong therapy.
- **Financial Support:** In the National Policy for Rare Diseases 2021, there is a provision for financial support upto Rs. 20 lakhs under the Umbrella Scheme of **Rashtriya Arogya Nidhi** for treatment, of those rare diseases that require a one-time treatment (diseases listed under Group 1 in the rare disease policy).
 - ♦ Beneficiaries for such financial assistance would not be limited to BPL families, but the benefit would be extended to about 40% of the population, who are eligible under Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (PMJAY).
- **Crowdfunding:** Besides, the Rare Diseases Policy also envisages a crowdfunding mechanism in which corporates and individuals will be encouraged to extend financial support through a robust IT platform for treatment of rare diseases.
 - ♦ Funds so collected will be utilized by Centres of Excellence for treatment of all three categories of rare diseases as a first charge and the balance financial resources can also be used for research.
- **Implementation conundrum:** Its implementation faced issues due to reluctance of states in joining because of lack of clarity on Central Government's support in the field of tertiary care. Public health and hospitals being a state subject, so implementation was very much in the hands of the state government.

Challenges and problems:

- **Early diagnosis** of rare diseases is a challenge owing to multiple factors that include lack of awareness among primary care physicians, lack of adequate screening and diagnostic facilities.

- **Traditional genetic testing** includes tests that can only address a few diseases.
- **There is a lack of awareness** about rare diseases in general public as well as in the medical fraternity. Rare diseases lack published data on long-term treatment outcomes.
- **Commercially unviable:** As the number of persons suffering from individual rare diseases is small, they do not constitute a significant market for drug manufacturers to develop and bring to market drugs for them. For this reason, rare diseases are also called 'orphan diseases' and drugs to treat them are called "orphan drugs". Thus, the prices are extremely high for this treatment.
- **Lack of Data:** Data on how many people suffer from different diseases that are considered rare globally, is lacking in India. The lack of epidemiological data on incidence and prevalence of rare diseases impedes understanding of the extent of the burden of rare diseases and development of a definition.

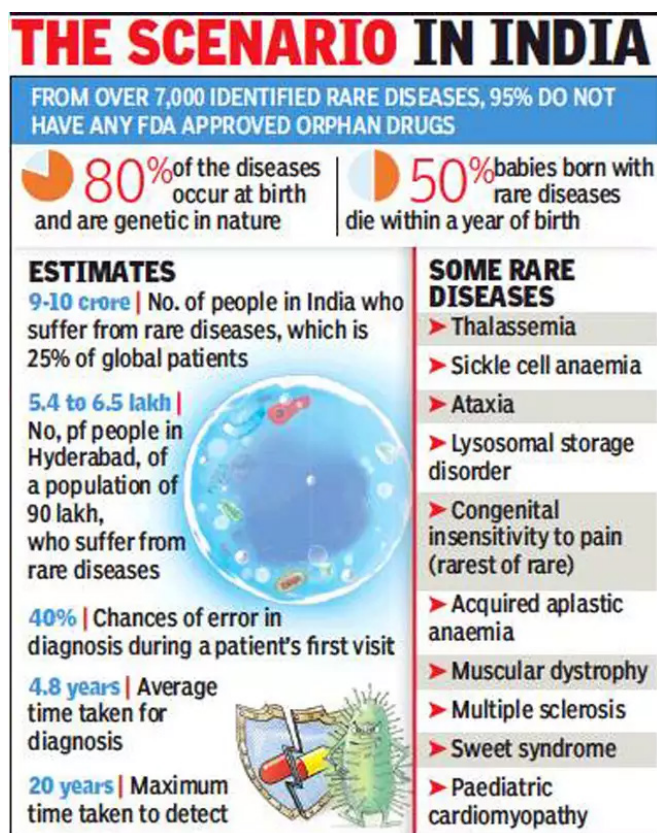
Registry for Rare Diseases has been initiated by ICMR by involving centers across the country that are involved in diagnosis and management of Rare Diseases. This will yield much needed epidemiological data for rare diseases. In the absence of epidemiological data on diseases considered as rare in other countries, it is not possible to prescribe threshold prevalence rates to define a disease condition as rare.

Best Practices:

- **In the United States of America**, development of drugs for rare disease is sought to be encouraged through the Orphan Drugs Act, which incentivises industry by way of market exclusivity, grants to researchers and tax incentives on expenditure incurred during evaluation of drugs for their therapeutic potential.
- **The European Joint Programme on Rare Disease** mostly focuses on research. National Health Service (NHS) England, for example, provides that the treatment for Spinal Muscular Atrophy (SMA) will be made available to the youngest and most severely-affected (SMA Type 1) patients immediately by Biogen (The pharmaceutical company that manufactures treatment for SMA), with NHS England offering funding on 11 National Institute for Health and Care Excellence (NICE) publication of final guidance.
- **In Singapore**, a fund - Rare Disease Fund – has been created to fund five medicines to treat three rare disease conditions.
- **In Malaysia and Australia** subsidized access for eligible patients is provided for expensive and lifesaving drugs.

Way Forward:

- The landscape of rare diseases is constantly changing, as there are new rare diseases and conditions being identified and reported regularly in medical literature. Apart from a few rare diseases, where significant progress has been made, the field is still at a nascent stage.
- Therefore, any policy on rare diseases needs to be considered in the context of the available scarce resources and the need for their utmost judicious utilization for maximizing the overall health outcomes for the whole of society measured in terms of increase of healthy life years.
- **There is a strong need to have a unified global definition for the "Rare Disease"** and for the world to come together to work for inventing treatments for rare diseases. All research institutions work together and gather knowledge about new emerging and old recurring such diseases.



- **National Registry for Rare Diseases:** To overcome the lack of medical data for rare diseases, a hospital based **National**

May, 2021

GENDER BIAS AND INCLUSION IN ADVERTISING IN INDIA REPORT

The Report was released by UNICEF and Geena Davis Institute on Gender in Media

About:

- United Nations Children's Fund (UNICEF) and Geena Davis Institute on Gender in Media jointly released an analysis report titled 'Gender Bias and Inclusion in Advertising in India'.
- The report analyzed the level and type of stereotyping found in Indian advertisements and presents an analysis of top 1000 most viewed ads in India in 2019 on television and YouTube.
- Most ads in the dataset were TV ads (82%) and 18% were digital ads.

Highlights of the Report:

- The Report finds that women are well represented in the most viewed Indian advertisements during 2019, however, the ads promoted many stereotypes in potentially harmful ways.
- **Gender and prominence:** Female characters are just as likely to appear in ads as male characters (49.6% compared with 50.4%) and dominate screen time (59.7%) and speaking time (56.3%) in Indian ads.
- **Diversity:** There are more young boys (ages 1 – 12) than girls in ads (20.5% compared with 13.1%). Female characters are more likely to be depicted in their 20s (38.2%) than male characters (26.7%), and most older characters are male.
 - ♦ Lesser representation of young girls in ads might promote the idea that their presence is not as important in the society.
- **Physical attributes:** Two-thirds of female characters (66.9%) have light or medium-light skin tones than male characters (52.1%).
 - ♦ Female characters are four times as likely to have a small body type than male characters (41.8% compared with 9.4%).
 - ♦ This may seem to promote the idea that females have lesser options of meeting standards of appearance, must occupy less space physically or figuratively, whereas men have more freedom in terms of how they look and still be socially acceptable.
- **Sexualization and stereotypes:** Female characters are nine times more likely to be shown as 'stunning'/very attractive' (5.9%) than male characters (0.6%), with preference for lighter skin tones.
 - ♦ Females are also more likely to be objectified, shown in revealing attire as compared to men.
- The most common gender tropes/stereotypes for female characters are "The Subservient Wife" and "The Pushy Aunt", and for men, the "Domineering/Controlling Male" and a man who does not help with domestic activities.
- Objectification of women dehumanizes their existence and may cause personal harm.
- **Work and Leadership:** Male characters are twice as likely to be shown with a paid occupation than female characters (25.2% compared with 11.6%), with more males shown as leaders (26.3%) compared to females (19.3%).
 - ♦ This might negatively impact children's perception that corporate sector is mainly a male domain and they might grow a bias towards women leadership in corporate sector or ballot box.
- **Personal traits:** Male characters are more likely to be shown as smart than female characters (32.2% compared to 26.2%) and funnier (male- 19.1%, female- 11.9%).
 - ♦ This might percolate a notion that women are less funny or intelligent as compared to men.
- **Gender Roles:** More females are depicted as married (11%, males- 8.8%), more males are shown to be making decisions about future (7.3%, females- 4.8%).
 - ♦ Females are depicted three times more in caretaking roles (18.3%, males- 5.2%), more as a parent and also as an excellent parent as compared to males.
 - ♦ Advertisers can bring about a profound shift in the real world simply by presenting men and women as co-caretakers of the household.
- **Activities:** Females are more likely to be shown doing shopping, cleaning, and being involved in doing purchasing or preparation of meals.
- **Settings:** Female characters are more likely to be shown in living room, bedroom whereas a male character is more likely to be shown in an office, an outdoor place or sports event.
 - ♦ This may promote a notion that public spaces are not women-friendly or safe, even if public spaces are gender-neutral spaces.
- A small number of male characters in Indian advertisements are featured as supporting gender equity (4.4%).
- Girls and women are sexualized at the same rates in Indian ads and the global baseline.

Depictions and Criteria	Female Characters	Male Characters
Prominence	49.6%	50.4%
Screen Time	59.7%	56.3%
Children 1-12 yr	13.1%	20.5%
Age in 20s	38.2%	26.4%
Paid Occupation	11.6%	25.2%
Shown Actually Working	9.3%	16.4%
Shown as Leaders	19.3%	26.3%
Married	11.0%	8.8%
Parents	18.7%	5.9%
Shown as Excellent Parent	10.1%	3.2%
Future Decision Making	4.8%	7.3%
Household Decision Making	4.9%	2.0%
Shopping	4.1%	2.3%
Cleaning	4.8%	2.2%
Caretaking Role	18.3%	5.2%
Meal Purchase/Preparations	5.4%	3.9%
Smartness & Intelligence	26.2%	32.2%
Sense of Humour	11.9%	19.1%
Light/Medium Skin Tone	66.9%	52.1%
Stunning/Attractive	5.9%	0.6%
Sexual Objectification	4.7%	0.9%
Partial Nudity	7.6%	1.6%

Recommendations of the Report:

- Increase representation of women and girls across age, social class, skin tone and other diversity indicators.
- Promote diverse templates of beauty and avoid regressive beauty norms of women and girls being only fair and thin.
- More women and girls should be portrayed as leaders, especially in the public sphere. Promotion of positive gender norms around body and attitudes towards healthy eating.

Significance:

- **First such study:** For the first time a public study systematically analyzed gender representations in ads in India to serve as a benchmark for making advertising more gender-sensitive in the country.
- **Quality:** The Report highlights that while women have achieved more representation in ads, but the quality of this representation is worrisome.
- **Role of advertisements in gender socialization:** Advertising and marketing play a powerful role in the process of gender socialization.

WHAT IS GENDER SOCIALIZATION?

- The process of gender socialization means expected gender roles are learned from birth and intensified throughout childhood and adolescence with messages received from society.
- Media, advertisement and marketing play a role in influencing children's self-perception about gender norms, stereotypes, roles.
- Correcting negative gender socialization is critical to achieving gender equality.

- **SDG:** Sustainable Development Goal 5 aims to achieve gender equality and empowerment of all women. Promoting positive gender roles in marketing and advertising is critical for achieving this goal.
- Advertisement and marketing have an immense potential to promote women's and girls' empowerment.

Way Ahead:

- Gender equitable portrayals and practices are needed to inspire girls and boys of their possibilities, unrestrained by gender stereotypes.
- More gender sensitive approach must be adopted in advertising and marketing.
- Advertisers must also address the more serious issues of child marriages, female school dropout, female foeticide/infanticide, forced marriages, employment opportunities for women etc.
- Women must be shown more in leadership roles to inspire other women and girls, thereby demonstrating multiple templates of working women both inside and outside homes.

United Nations Children's Fund (UNICEF)

- It is active in more than 190 countries and works to protect children's rights everywhere, to help them survive, thrive and fulfill their potential, from early childhood through adolescence.
- **HQ-** New York, USA
- UN Economic and Social Council elects United Nations Member States from the five regions to serve as members of the Executive Board of the UNICEF, who usually serve a 3-year term from the following calendar year after election.
- **Areas of work:** Vaccination, child health and nutrition, safe water and sanitation, quality education, skill building, HIV prevention and treatment for mothers and babies, protection of children and adolescents from violence and exploitation.
- **Report:** State of the World's Children is published annually by UNICEF.

WORLD HEALTH DAY 2021

World Health Day 2021 was celebrated on April 7 under the auspices of WHO.

About:

- As per the SRS-based Abridged Life Tables 2014-18 of the Census Commissioner and Registrar General of India, a child born on April 7, 2021 will live for 69 years in India, whereas the world average life span is 72.81 years.
- The theme for this year's World Health Day is 'Building a fairer, healthier world for everyone.'

Health status in India:

- **Life Expectancy:** It is defined as the number of years of life a person can expect at given age. It is calculated from a life table on the basis of age and sex. It reflects the health standards and socio-economic living standard of people in a country.
 - ♦ In India, there is a remarkable range gap of life expectancy between national average and States' average.
 - ♦ In last 50 years there is an increase of approximately 20 years of life span for every Indian.
- **Urban-rural divide:** Rural India's life span for a child born on April 7 2021 is 68 years whereas for urban India it is 72.6 years of life expectancy. The gap of life expectancy between rural and urban India has been narrowing down.
- **Male vs. female:** Females are projected to have higher life expectancy than males. An average life expectancy of female is 70.7 years and for male it is 68.2 years.
- **Toxic air:** According to Status of Global Air 2020, India topped the list for highest concentration of PM 2.5 in 2019 and as per the IQAir's World Air Quality Report, 35 of the top 50 countries with highest air pollution are in India.
 - ♦ The quality of life for children born in UP and MP will suffer and the average life span will reduce by 2 years and 6 months on account of polluted air.
- **Infant Mortality:** For every 1000 children born in India today, 33 do not survive to see their first birthday. This rate is higher in Madhya Pradesh (47), Assam (44), Arunachal Pradesh (42) and Uttar Pradesh (42).
- **Stunting and wasting:** The National Family Health Survey 5 (2019-20) warns that children who survive beyond the first 1000 days of their lives in India are likely to be stunted (low height for age) and wasted (low weight for height).
 - ♦ In 2026, every second of the 10 children born in India will

be stunted by the time s/he is five years old.

- ♦ About half of Meghalaya's children and around 44% of Bihar's children will not have adequate growth.
- **Climate change:** According to the Ministry of Earth Sciences in its assessment of climate change over Indian region, climate change is a threat to public health and economy. Therefore, every child born now must adapt to changing climate over the century as temperatures could rise by 4.4° C by 2100.

Sample Registration System (SRS):

- The SRS provides annual estimates of (a) population composition, (b) fertility, (c) mortality, and (d) medical attention at the time of birth or death, based on a system of dual recording of births and deaths in fairly representative units of samples spread all over the country.
- The main objective of SRS is to provide reliable estimates of birth rate, death rate and infant mortality rate at the natural division level for the rural areas and at the state level for the urban areas.
- The SRS data life tables have been prepared for the periods 1970-75, 1976-80, 1981-85 and 1986-90 at every five yearly intervals, and after that annually on a five yearly moving average basis so as to form a continuous series.
- It is one of the four major sources of vital statistics in India, other three being Civil Registration System (CRS), indirect estimates from the decennial census and indirect estimates from the National Family Health Surveys (NFHS).
- The demographic data is important for understanding and implementing socioeconomic development, population control, family planning, maternal and reproductive health, immunization programs in India.
- **Use:**
 - ♦ It is a conventional method of expressing the most fundamental and essential facts about the age distribution of mortality and is a powerful tool for measuring the probability of life and death of various age groups.
 - ♦ It enables us to understand the implication of age-specific mortality rate in terms of average life expectancy. In India, it has been the practice to construct life tables using age composition of the population from successive population censuses.

AUTONOMOUS STATE WITHIN ASSAM

Recently, a memorandum was submitted to the Centre seeking the implementation of Article 244A which provides for creation of an autonomous state within Assam.

About:

- A group of Bharatiya Janata Party lawmakers from Assam had submitted a memorandum to the Centre for the implementation of Article 244A which provides for the creation of an autonomous State within Assam.
- **22nd Amendment of the constitution:** Article 244 A was inserted by constitution's 22nd amendment Act.
- It sought for creation of an autonomous state within Assam comprising of certain tribal areas amalgamated into a single unit. These tribal areas will include the hill districts of Dima Hasao, Karbi Anglong and West Karbi and the Bodo Territorial Region.
- **Separate legislature and executive:** It also provides for a separate legislature and council of ministers in order to make laws and implement it.
- The executive will also be responsible for local administration of areas under it.

How are these tribal areas governed currently?

- The constitution has provided separate rules and regulations for administration of tribal areas under its Fifth and Sixth Schedule.
- **Sixth Schedule:** The administration of tribal areas in four states i.e. Assam, Meghalaya, Tripura and Mizoram are covered under sixth schedule of the constitution.
- This schedule includes that tribal population which has not amalgamated in modern societies and has distinct social and cultural practices.
- Hence, Sixth schedule covers tribal areas of those states which are inhabited by aboriginals.
- **Creation of autonomous regions:** Article 371 B has provided for formation of autonomous districts which can further be divided into several autonomous regions.
- According to this three autonomous districts have been created in Assam. These are:
 - ♦ North Cachar Hills District,
 - ♦ Karbi Anglong District and
 - ♦ Bodoland Territorial Areas District.
- **Governing councils and powers:** Each autonomous district consists of 30 members in which four are nominated by the governor and the remaining 26 are elected.
- **Legislative Powers:** The district and regional councils administer the areas under their jurisdiction and make laws on

certain specified matters such as land, forests, canal water, shifting cultivation, village administration, , social customs etc.

- All such laws require the assent of the governor.
- **Executive Powers:** Council can also establish, construct or manage primary schools, dispensaries, markets, ferries, fisheries, roads e.t.c.
- They are also empowered to assess and collect land revenue and to impose certain specified taxes.

Changes be brought by implementation article 244 A:

- **Unified Legislature and executive for all tribal areas:** The demand will provide for creation of a separate legislature and council of ministers.
- This will provide a unified legislature having more powers and subjects to make and implement laws.
- **Law and Order:** It will provide control of laws and order over tribal areas to the proposed autonomous state which is currently controlled by state legislature.
- **Limits the power of governor:** The creation of new autonomous states will also limit the powers of governor being exercised under Sixth Schedule of the constitution.

Limitations of the demand of an autonomous state:

- **Centralization of power:** Currently, the areas under Sixth Schedules are governed by respective district councils.
- These district councils have different compositions as these comprise of different tribal population.
- Unification into single autonomous legislature will centralize legislative and executive powers enjoyed by these councils.
- **Surge in insurgency:** Different insurgent groups bear tribal identities but are controlled by central forces and state police having different identities.
- Passing law and order into hands of different tribes will promote separatist tendencies.

Way Forward:

- Although creation of 'Autonomous State within a state' will provide for 'Self -Rule' for tribal districts by providing more autonomy but at the same time it can alienate them from mainstream political spectrum.
- Further, passing them more powers and limiting the role of governor will lead to increase in their faith in democratic credentials of the nation.

THE TRIBUNALS REFORMS ORDINANCE, 2021

Recently, the President promulgated Tribunal Reforms (Rationalization and Conditions of Service) Ordinance 2021.

About:

- **Powers of appellate bodies given to High Courts:** Through this ordinance, the Centre has replaced the existing appellate authorities and vested those powers in the High Courts.
- **Impact of ordinance on Finance Act, 2017:** The Finance Act, 2017 empowered the central government to notify rules on: (i) qualifications of members of tribunals, (ii) terms and conditions of their service, and (iii) composition of search-cum-selection committees for 19 tribunals (such as the Customs, Excise, and Service Tax Appellate Tribunals). The Ordinance amends the 2017 Act as follows:
 - ♦ The act vests power into central government to notify rules on qualifications of members, terms and conditions of their service.
 - ♦ It also provides powers to central government regarding composition of search and selection committees for 19 tribunals such as Customs, Excise, and Service Tax Appellate Tribunal.
 - ♦ The ordinance has been promulgated in accordance with second provision.
- **Impact of the Ordinance on different laws:** The laws which have been impacted by ordinance are:

TRIBUNALS AND CONSTITUTIONAL PROVISIONS REGARDING

- **Quasi judicial bodies:** Tribunals are Quasi-Judicial constitutional bodies which are setup in accordance with Article 323-A and 323-B of the Constitution of India.
- **Powers and domain:** These tribunals are constituted in order to deal with adjudicating disputes, determining rights between contesting parties, making an administrative decision, reviewing an existing administrative decision.
- **42nd Amendment Act:** Tribunals were recommended by Swaran Singh Committee. In accordance with that, the 42nd Constitution Amendment Act, 1976 was enacted which added the two new articles in the Indian Constitution i.e. Article 323-A & 323-B to deal cases by setting up tribunals.
- **Article 323-A:** It deals with setting up of tribunals for subjects related to the recruitment and service conditions of persons engaged in public service. These tribunals are called administrative tribunals.
- **Article 323-B:** It deals with setting up of tribunals for subjects related to Taxation, Industrial and labour, Foreign exchange, import and export, Land reforms, Food, Ceiling on urban property, Elections to Parliament and state legislatures, Rent and tenancy rights.

TRANSFER OF FUNCTIONS OF KEY APPELLATE BODIES AS PROPOSED UNDER THE ORDINANCE

Acts	Appellate body	Proposed entity
The Cinematograph Act, 1952	Appellate Tribunal	High Court
The Trade Marks Act, 1999	Appellate Board	High Court
The Copyright Act, 1957	Appellate Board	Commercial Court or the Commercial Division of a High Court*
The Customs Act, 1962	Authority for Advance Rulings	High Court
The Patents Act, 1970	Appellate Board	High Court
The Airports Authority of India Act, 1994	Airport Appellate Tribunal	Central government, for disputes arising from the disposal of properties left on airport premises by unauthorised occupants. High Court, for appeals against orders of an eviction officer.
The Control of National Highways (Land and Traffic) Act, 2002	Airport Appellate Tribunal	Civil Court
The Geographical Indications of Goods (Registration and Protection) Act, 1999	Appellate Board	High Court

Why is there a need for Tribunals?

- **The inadequacy of judicial system:** Traditional judicial system may prove to be inadequate in presiding over every conflict that needs to be resolved. Also, it is slow, complex, costly, lacks expertise and is very formal.
- **Overburdened Judicial System:** It has been burdened excessively and one cannot expect a fast execution in all matters. Various other factors need to be taken into consideration and for that one needs a body of experts.
- **The judicial system is conservative, rigid and technical:** The conventional judicial system delivers justice always by the book. Tribunals on the other hand can do away with technicalities. Tribunals are not held by stern rules of evidence and procedure. They make use of practical aspects to settle practical issues.
- **Provisions for preventive measures:** Unlike ordinary courts, administrative authorities can take preventive measures such as licensing and rate-fixing even before the parties in dispute appear.
- **Need for expertise:** Disputes are naturally technical sometimes. It is not expected of the judicial system to preside over such technicalities and decide them.
- **Others:** To add to all of it, tribunals may prove to be inexpensive, fast and flexible.

Issues related to functioning of the tribunals:

- **Scarcity of Judges:** there is a dearth of judges in such Tribunals. Appointments take months to be made which in turn leads to pendency of cases. Moreover, frequent adjournments cause more delay.
- **Appeals against the tribunals in HC:** Initially the design was such that many tribunals such as CAT were treated at par with the High Court and appeals against them were to be taken to Supreme Court alone. However, after the judgment in L. Chandrakumar, the Supreme Court made it clear that such appeals shall lie only before the High Courts. This had many implications.
 - ♦ Firstly, it did not help to reduce the burden of service matters as far as their appeals are concerned.
 - ♦ Secondly, since tribunals now serve as lower than High Courts, many states considered it better to abolish them because now they would be redundant.
- **Discrepancy in Selection Procedure:** The selection committees are responsible for recommending names to the Central government for the purposes of being appointed to a tribunal and are composed of a mix of judicial and executive members.
 - ♦ Executive members are generally from the political background or the ones appointed by the government.
 - ♦ This leads to politicization of the tribunals as a whole.
- **Compromising with Independence and transparency:**

Generally retired judges are appointed in tribunals as judicial members in different tribunals.

- ♦ These are further reappointed due to their political patronage and hence compromise the independence of the tribunals.
- ♦ Generally, sitting judges and tribunal chairpersons are likely to give orders favorable to the Central government to appease them for continued or future posting.
- **Non-uniformity of service conditions:** There is a problem of non-uniformity across tribunals with respect to service conditions, tenure of members, and varying nodal ministries in charge of different tribunals.

Recommendations:

- The Law Commission has recommended that for appointments to important posts in a tribunal, a Committee led by the CJI should be formed.
- The committee should include the Chairman, Vice-Chairman and Judicial Members of the various central tribunals.
- It has also suggested that tribunals be monitored by a single nodal agency under the aegis of the Ministry of Law and Justice to ensure uniformity in affairs.
- National Tribunals Commission can be formed to oversee the working of tribunals across the country.

Significance::

- **Shielding political interference:** Transferring the cases related to tribunals to respective high courts will help to nullify the political patronage and interference.
- **Increased transparency:** This will further help to infuse transparency in the litigation process and reduce complexities in terms of procedures which is common across all high courts.

Limitation:

- **Over-burdened Judicial system:** Currently, India's judiciary is overburdened by a large volume of pending cases.
 - ♦ Further addition of large volume of cases from tribunals will result in inefficiency of judicial system.
- **Delay in disposal of cases:** Although there are many discrepancies in functioning of tribunals, these are efficiently working across the country.
 - ♦ The disposal rates of tribunals in comparison to filing of cases per year are overwhelming 94%, which is excellent.
 - ♦ However, efficiency of High Courts across the country is very less as compared to it.
 - ♦ The move will hamper justice delivery system as it will delay the disposal of cases in courts.

Way Forward:

- Tribunals are needed for a specialized and effective hearing of technical matters that may at times miss the eye of law in the conventional courts.

GANGETIC RIVER DOLPHIN

Odisha has released the final data on the dolphin census conducted in January and February this year

About:

- **Population doubled** - The population of dolphins in Chilika lake and along the Odisha coast has doubled this year compared with 2020.
- **Three species** were recorded during the census - Irrawaddy, bottle-nose and humpback dolphins.
- The highest growth has been noticed in the case of humpback dolphins found in Rajnagar mangrove jumping from 2 in 2020 to 281 in 2021.
- There has also been sizeable growth in the population of endangered Irrawaddy dolphins, which are mostly found in Chilika lake (India's largest brackish water lake).
 - ♦ The rise can be attributed to the eviction of illegal fish enclosures.
 - ♦ Irrawaddy dolphins are also sighted in the Rajnagar mangrove (Odisha).

Dolphins in India:

- There are only two subspecies of South Asian river dolphin found in India, Ganges river dolphin and Indus river dolphin.
- **National Aquatic Animal** - **The Ganges river dolphin** is the national aquatic animal of India and also selected as city animal for the Indian city of Guwahati.
- The Ganges river dolphin is found in the Ganges and Brahmaputra rivers and their tributaries
 - ♦ Assam and Bihar are two best places in India to spot Ganges river dolphins.
- Rest of the place are famous for oceanic dolphins, Irrawaddy dolphin and Bottlenose dolphins.

- **Significance of Dolphins** - Aquatic life is an indicator of the health of river ecosystems.

- ♦ As the Gangetic dolphin is at the top of the food chain, protecting the species and its habitat ensures conservation of aquatic lives of the river.

Gangetic River Dolphin:

- It is one of the four freshwater dolphin species in the world.
 - ♦ The other three are found in the Yangtze river in China (now extinct), the Indus river in Pakistan and the Amazon river in South America.
- **Habitat:**
 - ♦ It inhabits the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh
 - ♦ They live in a zone where there is little or no current, helping them save energy.
 - ♦ They swim from the no-current zone to the turbulent waters at the edges to hunt for fish and return
- It is blind and finds its way and prey in the river waters through echoes. They feed on several species of fishes, invertebrates etc. The breeding season of the Gangetic dolphin extends from January to June.
- **Wild Life (Protection) Act 1972:** Schedule I
- **IUCN status:** Endangered
- **CITES:** Appendix 1 (most endangered)

Declining habitat of Gangetic river Dolphin:

- Decreasing water level in the Ganga is a big threat to dolphins because their habitat is the deep water in the river.



- Rise in salinity in the eastern and central region of Sundarbans has affected the habitat of Gangetic river dolphins.
 - ♦ Rising salinity level seems to be conducive for marine cetaceans like Indo-Pacific humpbacked and Irrawaddy dolphins as these species can thrive in saline waters
- Other potential threats to the dolphin habitats are excessive fishing, use of vulnerable fishing gears, noise from motorised boats and lack of awareness among local communities.
- Large-scale discharge of industrial and municipal waste, poaching for dolphin oil, damming and siltation, mechanised boats and global warming further adds to the problem.

Conservation measures for Gangetic River Dolphin:


- The efforts to save Gangetic river dolphins were started in the mid-1980s, but the estimates suggest the numbers have not risen as a result.
- **Wildlife Act Protection:**
 - ♦ After the launch of Ganga Action Plan in 1985, Gangetic dolphins were included in the First Schedule of the Indian Wildlife (Protection), Act 1972 in 1986.
 - ♦ It was aimed at checking hunting and providing conservation facilities such as wildlife sanctuaries.
 - ♦ For instance, Vikramshila Ganges Dolphin Sanctuary was established in Bihar under this Act.
- **Conservation Plan:**
 - ♦ The government prepared The Conservation Action Plan for the Ganges River Dolphin 2010-2020,
 - ♦ It identified threats to Gangetic Dolphins and impact of river traffic, irrigation canals and depletion of prey-base on Dolphins populations.
- **National Aquatic Animal:**
 - ♦ It was declared national aquatic animal in 2009 to highlight its importance and conserve it.
 - ♦ National Mission for Clean Ganga celebrates October 5 as National Ganga River Dolphin Day.
- **Project Dolphin –**
 - ♦ India in 2020 proposed Project Dolphin on the lines of Project Tiger to take special conservation programmes to increase the Dolphin population.
 - ♦ The project will focus on both types of dolphins living in the rivers and in the seas.
 - ♦ It will also give a boost to biodiversity, tourism and create employment opportunities.


Way Forward:

- Community participation and regional cooperation along with scientific interventions is the need of the hour to ensure dolphin conservation.
- Empower the stakeholders like the river-dependent population in reducing river pollution and allowing sustainable fishery and river-based other livelihood options through scientifically oriented conservation methods.


PROJECT DOLPHIN

PRESERVING OUR UNDERWATER FRIENDS







10-YEAR PROJECT TO FOCUS ON BOTH RIVER AND SEA DOLPHINS




AIM TO STRENGTHEN BIODIVERSITY, CREATE EMPLOYMENT OPPORTUNITIES AND ATTRACT TOURISM




KILLING, HABITAT FRAGMENTATION BY DAMS AND BARRAGES AND INDISCRIMINATE FISHING HAS REDUCED THE GANGES RIVER DOLPHIN POPULATION FROM TENS OF THOUSANDS TO AROUND 3,700 OVER THE LAST CENTURY



GANGES RIVER DOLPHIN, A SPECIES OF FRESHWATER DOLPHINS, IS PRIMARILY FOUND IN GANGA AND BRAHMAPUTRA RIVERS, AND THEIR TRIBUTARIES IN INDIA, BANGLADESH AND NEPAL



IN INDIA, THESE DOLPHINS ARE SIGHTED IN DEEP RIVERS IN ASSAM, BIHAR, JHARKHAND, MADHYA PRADESH, RAJASTHAN, UTTAR PRADESH AND WEST BENGAL



GANGES RIVER DOLPHIN, OFFICIALLY DISCOVERED IN 1801, CAN LIVE ONLY IN FRESHWATER

TYPES OF DOLPHINS

Irrawaddy Dolphins:

- They are found in coastal areas in South and Southeast Asia, and in three rivers: the Ayeyarwady (Myanmar), the Mahakam (Indonesian Borneo) and the Mekong.
- The Mekong River Irrawaddy dolphins inhabit a 118-mile stretch of the river between Cambodia and Lao PDR.
- **IUCN:** Endangered
- **Wildlife protection act 1972:** Schedule 1

Bottle-Nose Dolphins:

- It is recognized today as two distinct species—the common bottlenose dolphin and the Indo-Pacific bottlenose dolphin.
- **The common bottlenose dolphin** can be found around the world in tropical and temperate oceans. IUCN- Least concern.
- **Indo-Pacific bottlenose dolphin** generally occur in shallow coastal waters of the Indian Ocean, Southeast Asia and Australia. IUCN – Near threatened.

Humpback Dolphins:

- Humpback dolphins are found in relatively shallow nearshore waters throughout their range which includes most of the coastlines in Australia, Africa and Asia.
- **Indian Ocean humpback dolphin** ranges between South Africa and India. IUCN status - Endangered.

■■■■



ECONOMY

CODEX COMMITTEE ON SPICES AND CULINARY HERBS (CCSCH)

India hosted the Fifth session of Codex Committee on Spices and Culinary Herbs virtually.

About:

- Food Safety and Standards Authority of India (FSSAI) inaugurated Fifth session of Codex Committee on Spices and Culinary Herbs established under Codex Alimentarius Commission (CAC) in which Spices Board India served as the secretariat of Committee.
- More than 300 experts from 50 countries have taken part in the deliberations.
- The agenda of the meeting was to debate on unscrupulous and intentional adulteration of spices through substitution due to their high economic value.
- The committee considered the quality Standards for dried or dehydrated forms of Ginger, Cloves, Saffron and two culinary herbs, Oregano & Basil at step seven, besides Nutmeg and Chilli peppers & Paprika at step four in the Codex procedure of elaboration of food standards.

The Codex Committee on Spices and Culinary Herbs (CCSCH):

- It was established in 2013 under Codex Alimentarius Commission (CAC).

CODEX ALIMENTARIUS COMMISSION (CAC)

- It is an intergovernmental body established jointly by the UN's Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO) in 1963, within the framework of the Joint Food Standards Programme.
- The Secretariat of the CAC is hosted at FAO headquarters in Rome.
- It was established to protect the health of consumers and ensure fair practices in the food trade.
- It meets in regular session once a year alternating between Geneva and Rome.
- Currently, it has 189 Codex Members made up of 188 Member Countries and 1 Member Organization (The European Union).
- India is a member.

- **International Standard:** This standard is adopted by different nations of the world including institutions such as World Trade Organisation while importing and exporting food products and agricultural commodities.
- Codex standards are based on sound science provided by independent international risk assessment bodies or ad-hoc consultations organized by FAO and WHO.

- It aims to elaborate worldwide standards for spices and culinary herbs in their dried and dehydrated state in whole, ground, and cracked or crushed form;
- It also envisages consulting with other international organizations in the standards development process to avoid duplication.

State of production, consumption and export of spices in India:

- India is the world's largest producer, consumer and exporter of spices.
- It produces about 75 of the 109 varieties listed by the International Organization for Standardization (ISO).
- It also accounts for half of the global trading in spices and produces more than 2.7 million tonnes of spices out of which it exports about 8-10%.
- India's share in world trade of spices is about 40-50% in volume terms and 25% in value terms.

Significance of the Codex Committee on Spices and Culinary Herbs in India's perspective:

- **Safeguarding spice economy:** Being the largest producer of spices in the world, India has responsibility to check adulteration of the species.
- It will help India to safeguard its economic interests as spices are significant source of revenue.
- **Export oriented agricultural commodities:** Hosting such meetings will strengthen India's food processing infrastructure as per CODEX standards and hence will help to produce export oriented agricultural products.

Way Forward:

- Being the spice capital of the world, India has opportunity to promote cultivation, processing and export of spices.
- Active participation in such summits will help India to maintain quality of its food in accordance with global standard.

- This will help India to achieve its aim of doubling the farmer's income by 2022 and agricultural export by 2024, as envisaged by its 'Agriculture Export Policy'.

MADHU KRANTI PORTAL AND HONEY CORNERS INITIATIVE

Union Minister for Agriculture and Farmers Welfare has launched Madhu Kranti portal and Honey Corners Initiative.

About:

- **Nodal Agency:** Madhu Kranti Portal is an initiative of National Bee Board (NBB), Ministry of Agriculture and Farmers Welfare under National Beekeeping & Honey Mission (NBHM).
 - ♦ **National Bee Board (NBB):** Small Farmers' Agribusiness Consortium (SFAC) registered the NBB as a society under the Societies Registration Act, 1860 in 2000 and it was reconstituted (with the secretary as chairman) in June 2006.
 - ♦ Its objective is to seek overall development of beekeeping by promoting scientific beekeeping in India to increase the productivity of crops through pollination and increase the honey production for increasing the income of the beekeepers/farmers.
 - ♦ Presently NBB is implementing National Horticulture Mission (NHM) and Horticulture Mission for North East and Himalayan State (HMNEM)
- The Portal is being developed for online registration to achieve traceability source of Honey and other beehive products on a digital platform in association with Indian Bank which is its technical banking partner.
- It will also help in checking the quality and the source of adulteration of honey.
- It will assist the honey mission in increasing the income of the farmers, boosting exports and employment generation.
- Currently, 10,000 Beekeepers/Beekeeping & Honey Societies/Firms/ Companies with 16 lakhs honeybee colonies registered with NBB have been uploaded on Madhu Kranti Portal.

About Honey Corners Initiative:

- National Agricultural Cooperative Marketing Federation (NAFED) has developed Honey Corners in each NAFED Bazaar in order to provide marketing support to all Farmers Producer Organizations (FAOs).
- The honey corners initiative aims to setup honey corners at major 200 NAFED Stores to promote market support for honey & other beehive products.
- The initiative will further explore the possibilities of online marketing of honey and honey products.

NATIONAL AGRICULTURAL COOPERATIVE MARKETING FEDERATION OF INDIA LTD. (NAFED)

- NAFED is registered under the Multi State Co-operative Societies Act.
- It was setup in 1958 with the object to promote Co-operative marketing of agricultural produce to benefit the farmers.
- Agricultural farmers are members of NAFED. Its main aim is to organize, promote, and develop marketing and storage of agricultural and forest produce.
- It also provides technical advice in agricultural production.
- It also undertakes purchase, sale and supply of agricultural, marketing and processing requirements such as manure, seeds, fertilizers etc. It also facilitates the construction of warehouses as per the Warehousing Act.

SWEET REVOLUTION IN INDIA: STATE OF HONEY PRODUCTION

- Honey production in India has increased from 76,150 MTs (2013-14) to 1,20,000 MTs (2019-20) which is 57.58 % increase.
- Export of honey has also increased from 28,378.42 MTs (2013-14) to 59,536.74 MTs (2019-20) which is 109.80 % increase.
- Recently, National Beekeeping & Honey Mission (NBHM) has been launched as part of Atmanirbhar Bharat Abhiyaan.
- It aims to achieve the goal of 'Sweet Revolution' in India.
- China is currently the leading producer of honey in the world.

Significance of initiatives taken in apiculture sector:

- **Alternative source of income:** Apiculture with cropping will provide an alternative source of income to farmers in India. It is a best suited in a country like India where mixed farming is most prevalent.
- **Initiative against Adulteration:** Recently, adulteration of honey was unearthed which was prevalent in market with all leading brands such as Dabur, Patanjali, Baidyanath, Zandu, Hitkari and Apis Himalaya.
 - ♦ These all brands failed Nuclear Magnetic Resonance (NMR) test but passed all other tests.
 - ♦ The adulterant came out to be Chinese Sugar Syrup which passed all types of tests except NMR. The Madhu Kranti Portal will help to check adulteration by identifying FPOs from where honey is emerging.
- **Ushering Sweet Revolution in India:** Owing to significant growth in agricultural and horticultural sector in terms of volume, apiculture sector growth has potential to bring 'Sweet Revolution'.

WHAT ARE FARMERS PRODUCER ORGANIZATIONS?

- A Producer Organization (PO) is a legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen.
- It can be a producer company, a cooperative society or any other legal form which provides for sharing of profits/benefits among the members.

Way Forward:

- Apiculture in India can be clubbed with existing mixed farming culture to supplement farmer's income.
- Owing to growth of market for honey due to demand across the world, the sector has potential to 'Double the farmer's income' by 2022 apart from contributing in agricultural export.

FIRST FARM-BASED SOLAR POWER PLANT IN RAJASTHAN

The Plant was set up under the PM KUSUM Scheme.

About:

- The first farm-based solar power plant under the Prime Minister's Kisan Urja Suraksha Evum Utthan Mahabhiyan (KUSUM) scheme was set up in Kotputli, Jaipur.

Details of the project:

- The 1 MW plant was set up on 3.5 acres of land, producing 17 lakh units of electricity every year.
- It is the first of the 623 farm-based solar power projects selected by the Rajasthan Renewable Energy Corporation Limited (RRECL) for generating 722 MW capacity in the State under the scheme's first phase.
- Signed for a 25-year contract period, it will result in Rs. 50 lakhs annual earnings for the farm owner.
- The DISCOM will purchase the electricity at Rs. 3.4/unit.

Significance:

- **Energy security-** The KUSUM scheme will ensure an uninterrupted supply of electricity for the farmers as well as meet the existing demand.
- **Revenue generation-** Barren land can be converted into a solar power plant unit and provide income security to the developer.
- **Employment generation-** Such projects can generate jobs in the periphery.
- **Clean energy-** Renewable, less-polluting energy will be available for use.

- **Doubling Farmer's income-** The scheme is stepping stone in achieving the goals of doubling farmer's income by 2022.

PRIME MINISTER'S KISAN URJA SURAKSHA EVUM UTTAN MAHABHIYAN (KUSUM)

- **Objective-** To provide financial and water security to farmers.
- **3 components-**
 - ♦ **Component-A:** 10,000 MW of Decentralized Ground Mounted Grid Connected Renewable Power Plants.
 - ♦ **Component-B:** Installation of 17.50 lakh standalone Solar Powered Agriculture Pumps.
 - ♦ **Component-C:** Solarization of 10 Lakh Grid-connected Solar Powered Agriculture Pumps.
- **Target-** Under the scheme, the 3 components aim to add 25750 MW of solar power by 2022.
- **Launched by-** Ministry of New and Renewable Energy, Gol.
- **Financial support-**
 - ♦ Component A- Procurement Based Incentive (PBI) at 40 paise/kWh or Rs. 6.60 lakhs/MW/year, whichever is less, will be provided for the first 5 years by MNRE to DISCOMs, for buying the power from farmers/developers
 - ♦ For both Component-B and Component-C, central financial assistance (CFA) of 30% of the benchmark cost or the tender cost, whichever is lower, will be provided.
 - ♦ State Government subsidy- 30%;
 - ♦ Remaining 40% will be provided by the farmer.
 - ♦ Bank finance may be made available for meeting 30% of the cost and the remaining 10% will be provided by the farmer.
 - ♦ Higher CFA of 50% will be provided for North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Lakshadweep and A&N Islands with state government subsidy of 30% and remaining 20% to be borne by farmer.
- The solar plant can be set up on barren, fallow and agricultural land, pastureland and marshy land by individual farmers/group of farmers/ cooperatives/ panchayats/Farmer Producer Organizations (FPO)/Water User associations (WUA).
- To support small farmers, states may allow 500kW projects.
- The scheme supports solarization of existing grid-connected agriculture pumps to make farmers independent of grid supply.
- DISCOMs will buy surplus power from farmers at a per-determined rate to be decided by the respective State/ SERC.
- **Benefits-** The Scheme is likely to save 27 million tonnes of CO₂ emission per annum, 1.2 billion liters of diesel per annum and associated savings in the foreign exchange due to reduction of import of crude oil and provide 6.31 lakh job years for skilled and unskilled workers.

POWERGRID INFRASTRUCTURE INVESTMENT TRUST (PGINVT)

Recently the state-owned PowerGrid Corporation of India Ltd launched the public offer of Infrastructure Investment Trusts (InvITs).

About:

- Power Grid Corporation of India (PGCIL) has launched its first Infrastructure Investment Trust (InvIT) named PowerGrid Infrastructure Investment Trust (PGInvIT).
- This is the first time a state-owned entity (PGCIL) is monetizing its infrastructure assets through the InvIT route.
- This will be only the third InvIT to be listed in the Indian markets, after IRB InvIT and India Grid Trust, both of which went public in 2017.
- The InvIT route was proposed by the Centre as an alternative fundraising route for state-run companies to manage funding requirements without having to depend on govt. support.

What is a Infrastructure Investment Trust?

- InvITs are collective investment vehicles similar to a mutual fund.
- **An InvIT consists of four elements:**
 - ♦ Trustee has the responsibility of inspecting the performance of an InvIT.
 - ♦ Sponsor(s) are promoters of the company that set up the InvIT.
 - ♦ Investment Manager is entrusted with the task of supervising the assets and investments of the InvIT.
 - ♦ Project Manager is responsible for the execution of the project.
- Units of InvITs can be listed and traded on a stock exchange, providing them liquidity.
- Or they can be private and unlisted, in which case they are not publicly traded and largely invested in by institutional investors.
- It enables direct investment of money from individual and institutional investors in infrastructure projects to earn a small portion of the income as return.
- It enables developers of infrastructure assets to monetize their assets by pooling multiple assets under a single entity (trust structure).
- **Sectors Covered:** InvITs invests in infrastructure projects in sectors such as transport (road, bridges, railways), energy (electricity generation, transmission, distribution), communication, etc.
- **Eligibility and minimum investment:** Anyone from person or firms different sectors of economy is eligible for investment in InvITs. The minimum subscription limit of InvITs is Rs.1 lakh.

- ♦ These assets have long-term contracts with strong counterparties that provide a steady cash flow over the long term – typically 15-20 years.

- **Regulation:** In India, InvITs are regulated by Securities and Exchange Board of India (SEBI). SEBI (Infrastructure Investment Trusts) (Amendment) Regulations, 2016 provides powers to SEBI to regulate in matters of InvITs.
- **Other InvITs in India:** Digital Fibre Infrastructure Trust, India Grid Trust, India Infrastructure Trust Indian Highway Concessions Trust e.t.c. are other InvITs which have been listed in India.

Significance of Infrastructure Investment Trust:

- **Rapid Investment tool:** InvITs are fast becoming a preferred route for private equity investors to hold operating infrastructure assets and for infrastructure developers to monetize their investments in these projects.
- **Capital recycling:** InvITs help infrastructure developers to recycle capital locked in long term infrastructure projects such as roads, transmission lines or renewable assets.
- It enables raising long-term debt through refinancing, by tapping a different set of investor class such as pension funds, insurance companies and sovereign wealth funds.
- **Safe investment tool:** It suits the investors who invest in long term equities and looks for higher yield but safe investment opportunities. Credit ratings of InvITs in India is remarkable and at highest safety level (AAA). This makes it a potential investment destination.

Way Forward:

- Setting up of such investment mechanism in different public sector entities will help India to attract investments envisaged by National Infrastructure Pipeline.

WAYS AND MEANS ADVANCE (WMA)

RBI has recently decided to continue Ways and Means Advances (WMA) scheme with limit of Rs. 51,560 crore.

About:

- Reserve Bank of India has decided to continue the existing interim WMA limit of ₹ 51,560 crore for all States/ UTs for six months.
- The decision was taken by RBI based on the recommendations of the Advisory Committee on Ways and Means Advances (WMA) to State Governments, 2021.
- The decision has been taken by RBI in lieu of second wave of pandemic which has crippled India's economy again.
- Further, RBI has opined that it will review WMA limit thereafter, depending on the course of the pandemic and its impact on the economy.

- ♦ The limits for WMA (for Centre) are decided by the government and RBI mutually and revised periodically.
- ♦ A higher limit provides the government flexibility to raise funds from RBI without borrowing them from the market.
- **Other decisions taken by RBI:** The Special Drawing Facility (SDF) availed by State Governments/UTs shall continue to be linked to the quantum of their investments in marketable securities issued by the Government of India, including the Auction Treasury Bills (ATBs).
 - ♦ **Auction Treasury Bills:** These are money market instruments issued by the Government of India as a promissory note with guaranteed repayment at a later date.
 - ♦ Funds collected through such tools are typically used to meet short term requirements of the government, hence, to reduce the overall fiscal deficit of a country.
- The annual incremental investments in Consolidated Sinking Fund (CSF) and Guarantee Redemption Fund (GRF) shall continue to be eligible for availing of SDF.

About Ways and Means Advance (WMA):

- The WMA scheme was introduced in 1997 in order to meet mismatches in the receipts and payments of the government.
- According to the mechanism, the government can avail immediate cash from the RBI which has to be returned within 90 days with an interest charged equal to prevailing repo rate.
- **Statutory provisions:** The mechanism of WMAs work in accordance to Section 17(5) of the RBI Act, 1934.
- It authorizes the central bank to lend to the Centre and state governments subject to repayment "not later than three months from the date of the making of the advance".
- **In case of default in repayment:** If the banks could not pay the sum within 90 days, the sum is treated as an overdraft and the interest rate increases by 2 percentage points over the Repo Rate.
- **Types of WMAs:** There are two types of Ways and Means Advances (WMAs). They are normal and special.
 - ♦ A Special WMA or Special Drawing Facility is provided against the collateral of the government securities held by the state.
 - ♦ After the state has exhausted the limit of SDF, it gets normal WMA.
 - ♦ The interest rate for SDF is one percentage point less than the repo rate.
 - ♦ The number of loans under normal WMA is based on a three-year average of actual revenue and capital expenditure of the state.

Significance of WMAs:

- **Useful in crisis management:** WMA mechanism allows centre and states to borrow from Reserve Bank of India during economic crisis and fulfill their needs in an urgent basis.
- Hence, it acts as shock absorber during crisis such as COVID-19 pandemic.
- **Short term debt mechanism:** The mechanism also provides short term debt to central and state government in times of need.

TYPES OF FUND

- **A Guarantee Redemption Fund (GRF)** has been established in the Public Account of India from 1999-2000 for redemption of guarantees given to Central Public Sector Enterprises (CPSEs), Financial Institutions, etc. by the Union Government whenever such guarantees are invoked.
- The fund is fed through budgetary appropriations with an annual provision in the Budget Estimates (BE).
- **Consolidated Sinking Fund:** CSF was set up in 1999-2000 by the RBI to meet redemption of market loans of the States.
- Initially, 11 States set up sinking funds. Later, the 12th Finance Commission (2005-10) recommended that all States should have sinking funds for amortisation of all loans.
- The fund should be maintained outside the consolidated fund of the States and the public account and should not be used for any other purpose, except for redemption of loans.

Way Forward:

- Ways and Means Advances have emerged as true crisis management instruments during current crisis.
- It has amplified the current crisis management process during first and second wave of COVID-19 pandemic.

RBI TO OPEN UP RTGS, NEFT FOR PAYMENT SYSTEM OPERATORS

The Reserve Bank of India has proposed to enable regulated payment system operators to take direct membership in Central Payment Systems such as RTGS and NEFT.

About:

- **Key highlights:**
 - ♦ To enable, in a phased manner, payment system operators like mobile wallets regulated by the central bank to take direct membership in RTGS and NEFT.

- ♦ To minimise settlement risk in the financial system and enhance the reach of digital financial services to all user segments.
- ♦ These entities will, however, not be eligible for any liquidity facility from RBI to facilitate settlement of their transactions in these CPSs (Centralised payment system).
- ♦ This will be subjected to an overall Limit of Rs. 2 lakh for Non Banks.
- **To allow the facility of cash withdrawal:**
 - ♦ The RBI has now proposed to allow the facility of cash withdrawal, subject to a limit, to non-bank entities — full-KYC PPIs of non-bank PPI issuers.
 - ♦ Currently, cash withdrawal is allowed only for full-KYC PPIs issued by banks and this facility is available through ATMs and PoS terminals.
 - ♦ Holders of such PPIs, given the comfort that they can withdraw cash, are less incentivised to carry cash and consequently more likely to perform digital transactions.
 - ♦ The RBI now allowing non-banks to withdraw cash (subject to the limit of Rs 2 lakh), dependence on banks is likely to come down.

Significance:

- **Enables financial inclusion and increased tax revenues:** A cashless economy mandates all citizens to have bank accounts. This will ensure a higher financial inclusion rate. It will also guarantee transparency in the transaction of money within the economy – minimizing the possibility of tax evasion exponentially. Even the beneficiaries of various government schemes can easily be identified and taken care of by the government.
- **Cash is expensive:** A significant amount of time and money is needed to print the currency. RBI has spent Rs.32.1 billion on printing the currency. The effort is also needed to steer the money through the system and to the consumers. Also, there is the cost for the setting up of and maintaining of the ATMs. Furthermore, the paper currencies have shelf-life after which it needs to be replaced. It is estimated that the direct cost of running a cash-based economy is about 0.25% of India's GDP.
- **Increase Digital Transactions:** Experts say that just as use of UPI increased over the last 4-5 years since it was opened to third-party aggregators, opening the payment system to non-banks would increase digital payments and transactions significantly bringing in better transparency, scalability and accountability.
- **Help to build a credit profile:** Youngsters using FinTech platforms have no or less financial assets and yet they are borrowing and spending. This will allow them to have a digital trail and build a credit profile.

CENTRALISED & DECENTRALISED PAYMENT SYSTEMS

- **The centralised payment systems** will include Real Time Gross Settlement (RTGS) System and National Electronic Fund Transfer (NEFT) system and any other system as may be decided by RBI from time to time.
- **RTGS:** It enables real-time transfer of funds to a beneficiary's account and is primarily meant for large-value transactions. Real time means the processing of instructions at the time they are received and gross settlement implies that settlement of funds transfer instructions occurs individually.
- **NEFT:** It is an electronic fund transfer system in which the transactions received up to a particular time are processed in batches. It is generally used for fund transfers of up to Rs. 2 lakh.
- **The decentralised payment systems** will include clearing houses managed by RBI (Cheque Truncation System (CTS) centres) as well as other banks (Express Cheque Clearing System (ECCS) centres) and any other system as decided by RBI from time to time.

NON BANK FINANCIAL INSTITUTIONS (NBFI)/NON BANK FINANCIAL COMPANIES (NBFCs)

- Nonbank banks are financial institutions that are not considered full-scale banks because they do not offer both lending and depositing services.
- A Non-Banking Financial Company (NBFC) is a company registered under the Companies Act, 1956.
- An NBFC company can acquire shares, stocks, bonds, debentures and securities from Government as well as local authority or any other marketable securities.
- Nonbank banks can engage in credit card operations or other lending services, provided they do not also accept deposits.
- **NOTE:** Many nonbank banks that allow deposits are insured by the Federal Deposit Insurance Corporation FDIC, and reserve requirement restrictions will apply to these institutions.
- The RBI will now allow non-bank entities — Prepaid Payment Instrument (PPI) issuers, Card Networks, White Label ATM operators, Trade Receivables Discounting System (TReDS) platforms — to become members of CPS.
- Mobile wallets like Google Pay, Mobikwik, PayU, Ola Money, PhonePe and Amazon Pay can provide NEFT and RTGS facilities to their customers.
- Transfer will be allowed only to KYC (know your customer)-compliant entities.

- **Increase in Market Size:** "Interoperability of the PPI (Prepaid Payment Instrument) wallet will expand the market size and will be beneficial to the end consumers. The RBI has also relaxed the norms for the membership of Central Payment Systems, which was earlier available to only banks and a few other institutions.

Challenges:

- The opening up of fund transfer and cash withdrawal through non-banks is certainly a sign of a changing banking horizon.
- Traditional brick-and-mortar banking is slowly disappearing with non-banks entering the space.
- The RBI says India is on the way to becoming Asia's top FinTech (Financial Technology) hub with an 87% FinTech adoption rate as against the global average of 64%.
- The FinTech market in India was valued at Rs 1.9 lakh crore in 2019 and is expected to reach Rs 6.2 lakh crore by 2025 across diversified fields such as digital payments, digital lending, peer-to-peer (P2P) lending, crowd funding, block chain technology, distributed ledgers technology, big data, Reg Tech and Sup Tech.
- Commercial banks adapt to the technological changes and work in tandem with these entities so that in future they are part of the ecosystem rather than competing with FinTech companies for business.

Way Forward:

- The trajectory of growth in UPI-based transactions, as well as overall retail digital transactions, has been impressive both in value and volume terms, according to the RBI's Report on Trends and Progress of Banking in India.
- Social distancing requirements during the pandemic led to the digital mode of transactions being preferred over cash.
- Thus it is important that commercial banks adapt to the technological changes and work in tandem with these entities.

EATSMART CITIES CHALLENGE AND TRANSPORT4ALL CHALLENGE

The challenges have been launched by the Ministry of Housing and Urban Affairs.

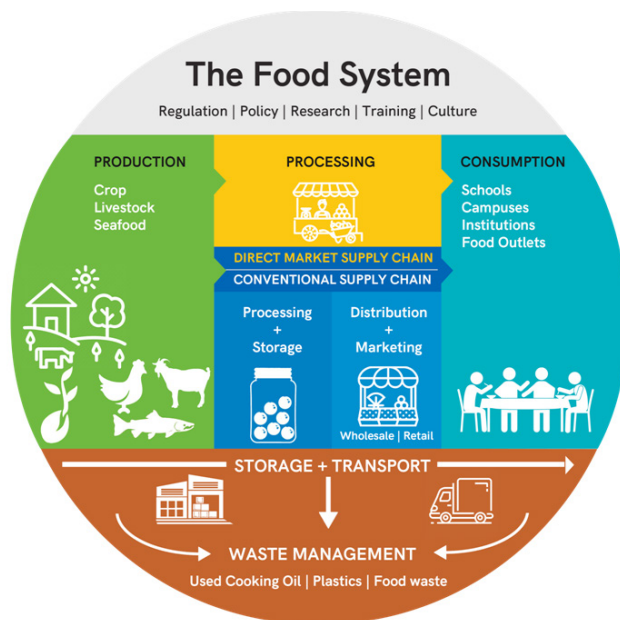
About:

- Shri Hardeep S Puri, MoS (I/C), Housing and Urban Affairs launched the EatSmart Cities Challenge and Transport 4 All Challenge.

EatSmart Cities Challenge:

- **What is it?** It has been launched to nudge the urban populace to make the right food choices and help build a healthier and happier nation.

- It will complement the Smart Cities Mission.
- **Aim-** It aims to motivate Smart Cities to develop a plan that supports a healthy, safe and sustainable food environment supported by institutional, physical, social, and economic infrastructure along with the application of 'smart' solutions to combat food related issues.
- **Who can participate?** The challenge is open to all Smart cities, capital cities of States /UTs, and cities with a population above 5 lakh.
- It will involve a competition among cities to recognize their efforts in adopting and scaling up various initiatives under Eat Right India.
- **Food Safety and Standards Authority of India (FSSAI)** under the aegis of Ministry of Health and Family Welfare had launched the 'Eat Right India' movement earlier and has now collaborated on the 'EatSmart Cities' challenge.
- **Significance-** The EatSmart Cities challenge will motivate the urban population to eat right, create a social and behavioural change towards food safety, hygiene and nutrition, strengthen the food safety and regulatory environment, build awareness among the consumers and urge them to make better food choices in India's major cities and set an example for other cities to follow.
- India will get an opportunity to play a pioneering role in developing the concept of integrating food systems work into city planning and development.



Transport 4 All (T4All) Challenge:

- **What is it?** The challenge aims to overcome the mobility crisis in transport on account of the COVID-19 pandemic and develop digital solutions that will make public transport safe, affordable, comfortable, and reliable for all.

- It has been launched in collaboration with The Institute for Transportation and Development Policy (ITDP).
- Three Stages:** The Transport4All through Digital Innovation Challenge comprises three stages:
 - ♦ **Stage I Problem Identification:** Cities, with the support of NGOs, identify key recurring problems that citizens and public transport operators face.
 - ♦ **Stage II Solution Generation:** Start-ups develop prototypes of solutions to improve public transport with inputs from cities and NGOs.
 - ♦ **Stage III Pilot Testing:** Cities engage start-ups for large-scale pilots and refine the solutions based on citizen feedback.
- Transport4All Task Force (TTF):** Cities will form TTF comprising of key stakeholders vis. Municipal Corporation, Smart City SPV, city bus undertaking, metro and suburban rail, regional transport office, traffic police, road owning agencies, Intermediate Public Transport (IPT) unions, NGOs, and academic institutes working in the field of sustainable transport.

- ♦ **Who can participate?** All the Smart Cities Mission cities, capitals of states and union territories (UTs), and all cities with a population of over 5 lakhs—are eligible for the Challenge.
- ♦ **Significance-** The challenge will usher digitization in urban mobility, make formal and informal transport safe, convenient and affordable for all and support digital innovation.

SUBSIDY POLICY FOR UREA PRODUCED BY COAL GASIFICATION

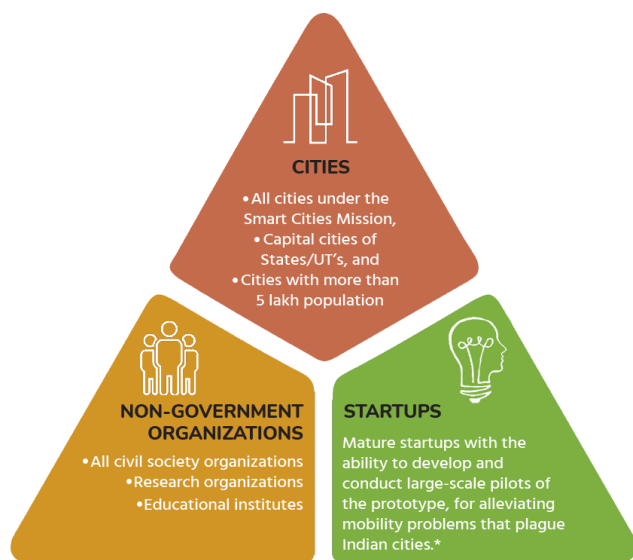
Cabinet has recently approved an exclusive subsidy policy for urea produced through coal gasification.

About:

- Talcher Fertilizers which is a joint venture of Coal India, GAIL (India), Rashtriya Chemicals and Fertilizers and Fertilizer Corporation of India is setting up the 1.27 million tonne per annum capacity urea plant.
- The plant is based on coal gasification technology in Odisha with an estimated investment of Rs 13,277 crore.
 - ♦ This will be the only plant to produce the nitrogenous soil nutrient (urea) through coal gasification route.
- Cabinet has approved an exclusive subsidy policy for urea produced through coal gasification by Talcher Fertilizers Limited.
 - ♦ Urea is a widely used fertiliser in India.
- Use of Clean-Coal Technology:** The Talcher Fertilizers Limited produces urea from coal gasification by clean-coal technology which emits negligible sulphur dioxide, nitrogen dioxide, and free particulate emissions as compared to directly coal fired processes.

About Coal gasification:

- Gasification of coal is a process in which coal is partially oxidized by air, oxygen, steam or carbon dioxide under controlled conditions to produce a fuel gas.



*The eligibility criteria will be announced after the problem statements have been identified.

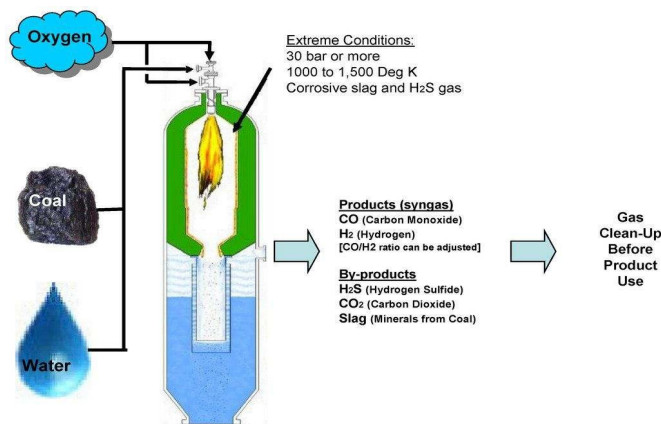


Fig: Process of coal gasification

- The hot fuel gas is cooled in heat exchangers, with the production of steam, and cleaned before combustion in a gas turbine.
- After the process of coal gasification, Syn gas is produced which is essentially a mixture of carbon monoxide (CO), hydrogen (H₂), carbon dioxide (CO₂), natural gas (CH₄), and water vapour (H₂O).
- The syngas can be used in a variety of applications such as in the production of electricity and making chemical products, such as fertilisers.
 - ♦ The hydrogen obtained from coal gasification can be used for various purposes such as making ammonia, powering a hydrogen economy.
 - ♦ The ammonia is reacted with the carbon dioxide to produce urea melt.
- **In-situ gasification of coal–or Underground Coal Gasification (UCG)**–is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.
- India has set the target that by 2030 it will gasify 100 million tonne of coal under four major projects with an overall investment of Rs. 20,000 crore.

Production of fertilizer by coal gasification:

- Nitrogenous fertilizers can be only produced through burning and reforming natural gas or by gasifying coal.
- The Air Separation Unit (ASU) separates oxygen and nitrogen from the air. The Syn Gas is produced from coal gasification.
- Nitrogen from the ASU and hydrogen from the gas cleaner are combined to produce ammonia, in the catalytic reaction. $[3H_2 + N_2 \rightarrow 2NH_3]$
- Ammonia and carbon dioxide are combined to produce liquid urea. $[2NH_3 + CO_2 \rightarrow (NH_2)_2CO + H_2O]$
- Liquid urea is usually dried and shipped in granular form.

Significance of providing subsidy to urea production through coal gasification:

- **Clean Technology:** The technology which has been adopted by Talcher Fertilizers is clean technology.
 - ♦ It produces sync gas through clean-coal technology and thus it is a carbon neutral mechanism.
 - ♦ The provision of subsidy will promote use of clean technologies and thus will help India to achieve its Intended National Domestic Contribution (INDC) targets.
- **Reduces Import of Urea and natural gas:** Currently, India is heavily dependent upon import of Urea and 55% of its domestic consumption comprises of Urea.
 - ♦ In last financial year alone, India imported 9 million tonnes against about 22 million tonnes of domestic production.
 - ♦ Most of the urea which has been produced in India

currently is from natural gas.

- ♦ India has a 45.3% import dependence for natural gas/ LNG.
- ♦ Setting up of plants based on Syn gas for urea production will help India to reduce import dependency in dual manner.

Fertiliser Consumption in India:

- India's fertiliser consumption in FY20 was about 61 million tonne and is estimated to have increased by 5 million tonne in FY21.
- Since non-urea (MoP, DAP, complex) varieties cost higher, many farmers prefer to use more urea than actually needed.
- The government has taken a number of measures to reduce urea consumption. It introduced neem-coated urea to reduce illegal diversion of urea for non-agricultural uses. It also stepped up the promotion of organic and zero-budget farming.
- **Subsidy on Urea:** The Centre pays subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant and the units are required to sell the fertiliser at the government-set Maximum Retail Price (MRP).
- **Subsidy on Non-Urea Fertilisers:** The MRPs of non-urea fertilisers are decontrolled or fixed by the companies. The Centre, however, pays a flat per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels".
 - ♦ Examples of non-urea fertilisers: Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP).

Way Forward:

- Provision of subsidy to coal gasification based urea production plant will help India to achieve multiple targets related to climate change, energy security and 'Self-reliance' (Aatma Nirbhar Bharat).
- It will also help India to promote climate resilient industries and thus achieve sustainable development goals such as SDG 13 (Climate change) and SDG 12 (Responsible consumption and production).

PRODUCTION LINKED INCENTIVE SCHEME FOR FOOD PROCESSING INDUSTRIES

The Cabinet has recently approved an outlay of Rs 10900 Cr for the scheme.

About:

- The Cabinet approved the Central Sector Production Linked Incentive Scheme for Food Processing Industries (PLISFPI) with an outlay of Rs. 10900 Cr.

About Production Linked Incentive Scheme for Food Processing Industries (PLISFPI):

- **Aim:** To support creation of global food manufacturing champions commensurate with India's natural resource endowment and support Indian brands of food products in the international markets.
- The Scheme has been formulated based on the Production Linked incentive scheme of NITI Aayog under "AatmaNirbhar Bharat Abhiyaan for Enhancing India's Manufacturing Capabilities and Enhancing Exports".
- **Objectives-**
 - ♦ Support Food manufacturing entities with stipulated minimum sales and willing to make minimum stipulated investment for expansion of processing capacity and branding abroad to incentivize emergence of strong Indian brands;
 - ♦ Support creation of global food manufacturing champions;
 - ♦ Strengthen select Indian brand of food products for global visibility and wider acceptance in the international markets;
 - ♦ Increase employment opportunities of off-farm jobs,
 - ♦ Ensure remunerative prices of farm produce and higher income to farmers.
- **Salient features of the scheme-**
 - ♦ First component aims to incentivize manufacturing of four major food product segments viz. Ready to Cook/ Ready to Eat (RTC/ RTE) foods including Millets based products, Processed Fruits & Vegetables, Marine Products, Mozzarella Cheese as well as Innovative/ Organic products of SMEs including Free Range - Eggs, Poultry Meat, Egg Products.
 - ♦ The selected applicant will be required to undertake investment, as quoted in their Application (subject to the prescribed minimum) in Plant & Machinery in the first two years i.e. in 2021-22 & 2022-23. Investment made in 2020-21 will also be counted.
 - ♦ The conditions of stipulated Minimum Sales and mandated investment will not be applicable for entities selected for making innovative/ organic products.
 - ♦ The second component relates to support for branding and marketing abroad to incentivize emergence of strong Indian brands.
 - ♦ For promotion of Indian Brand abroad, the scheme envisages grant to the applicant entities for - in store Branding, shelf space renting and marketing.
 - ♦ Scheme will be implemented over a six-year period from 2021-22 to 2026-27.
- **Who can apply?** (i) Proprietary Firm or Partnership Firm or Limited Liability Partnership (LLP) or a Company registered in India (ii) Co-operatives; and (iii) SME and making an application for seeking approval for coverage under the Scheme.
 - ♦ The applications will be made under three Categories, based on the benefits they seek to avail.
 - ♦ The Applicants covered under the proposed scheme will be permitted to avail services under other schemes. Coverage under the PLI Scheme will not affect eligibility under any other scheme and vice versa.
- A **National level portal** would be set-up wherein the applicant enterprise could apply to participate in the Scheme.
- **Project Management Agency-** The scheme will be rolled out on an All-India basis and implemented through a Project Management Agency (PMA), which would also be responsible for appraisal of applications/ proposals, verification of eligibility for support, scrutiny of claims eligible for disbursement of incentive.
- The scheme is "fund-limited", i.e. cost shall be restricted to the approved amount and this will not be exceeded irrespective of the performance.
- **Target-** Generate processed food output of Rs 33,494 crore and create employment for nearly 2.5 lakh persons by the year 2026-27.
- **Implementation-** The Scheme would be monitored at Centre by the Empowered Group of Secretaries chaired by the Cabinet Secretary.
 - ♦ Inter-Ministerial Approval Committee (IMAC) would approve selection of applicants for coverage under the scheme, sanction and release of funds as incentives.
 - ♦ The Ministry will prepare Annual Action Plan covering various activities for implementation of the scheme.
 - ♦ A third-party evaluation and mid-term review mechanism would be built in the programme.

Significance:

- **Employment generation-** The scheme will generate employment for nearly 2.5 lakh people associated with the food processing industry.
- **Expansion of food processing capacity:** The scheme will help increase the food processing output valued at Rs. 33494Cr.
- **Competitive advantage-** The scheme builds upon India's competitive advantage in terms of resource endowment, large domestic market and scope for promoting value added products as well as enhance existing competitive strength.

SHAPHARI SCHEME FOR AQUACULTURE

The certification scheme for aquaculture products was launched by the Marine Products Exports Development Authority (MPEDA).

About:

- Marine Products Export Development Authority (MPEDA) developed a certification scheme 'Shaphari' for aquaculture products.
- Shaphari in Sanskrit means superior quality of fishery products fit for human consumption.

About Shaphari Scheme:

- The Shaphari scheme is based on the United Nations' Food and Agriculture Organization's technical guidelines on aquaculture certification and will have two components-
 - ♦ Certifying hatcheries for the quality of their seeds and,
 - ♦ Separately, approving shrimp farms that adopt the requisite good practices.
- **Need:** Container shortages and incidents of seafood consignments being rejected because of food safety concerns.
 - ♦ Consignments sourced from Indian shrimp farms have been rejected due to the presence of antibiotic residue and this is a matter of concern for exporters.
- **Aim-** To establish farm certification system for production of antibiotic residue free shrimp to enhance the consumer confidence, meet international standards and promote hassle free export.
- **Certification process and validity-** The certification process will be online and after clearing multiple audits of operations, the certificate will be awarded for 2 years.
- **Shrimp production in India-** Andhra Pradesh, West Bengal, Odisha, Gujarat and Tamil Nadu are India's major shrimp producing States, and around 95% of the cultured shrimp produce is exported. Frozen shrimp is the largest exported seafood item of India.
- **Prohibited residues in food production-** As per the Ministry of Commerce and Industry notification 5 antibiotics viz chloramphenicol, furazolidone, neomycin, nalidixic acid and sulphamethaxazole are banned and no residues should be left in the animal body.
 - ♦ There are 9 substances included in other regulations that may not be used in food producing species because no safe level of residue can be determined: chloramphenicol, chloroform, chlorpromazine, colchicine, dapsone, dimetridazole, metronidazole, nitrofurans (including furazolidone) and ronidazole.

Significance:

- **Identify good quality seed producers-** The certification of hatcheries will help farmers easily identify good quality seed producers.
- **Adopting good practices-** The scheme ensures a market-based tool for hatcheries to adopt good aquaculture practices

and help produce quality antibiotic-free shrimp products to assure global consumers.

- **Meeting international standards-** Certified aquaculture products will help exporters to export their consignments to markets under stringent food safety regulations without the fear of getting rejected.
- **Online process of certification** will ensure that human errors are avoided and credibility and transparency is maintained.
- **Better returns for farmers and exporters-** The certification scheme will ensure that farmers get better returns on their produce and the exports are hassle free.
- **Improve consumer confidence-** Certification will improve confidence of consumers of aquaculture products in the quality of the produce.

MARINE PRODUCTS EXPORT DEVELOPMENT AUTHORITY (MPEDA)

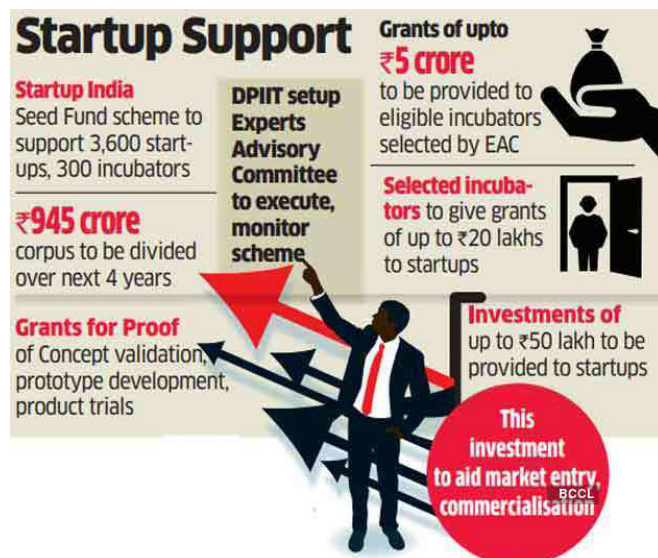
- The Marine Products Export Development Authority (MPEDA) is the nodal agency for development of seafood sector in India and was set up by an Act of Parliament in 1972.
- **Mandate-** To promote the marine products industry with special reference to exports from the country.
- **MPEDA is empowered** to regulate exports of marine products, ensure measures for sustained, quality seafood exports, prescribe for itself any matters which the future might require for protecting and augmenting the seafood exports from the country, carry out inspection of marine products, its raw material, fixing standards, specifications, carry out training and marketing the seafood overseas.
- **HQ-** Kochi, Kerala.

STARTUP INDIA SEED FUND SCHEME (SISFS)

Minister of Commerce & Industry has recently launched the Startup India Seed Fund Scheme (SISFS).

About:

- The scheme was earlier announced by the Prime Minister Narendra Modi in January 2021 during 'Prarambh: StartupIndia International Summit'.
- The Prarambh summit marked the five-year anniversary of the Startup India initiative (launched in 2016) and aimed to
 - ♦ Attain attention of global capital for startups in India,
 - ♦ Mobilize domestic capital,
 - ♦ Provide opportunities for accessing international markets to our startups and
 - ♦ Evolve enabling policy provisions.



Startup India Seed Fund Scheme (SISFS):

- **Aim:** SISFS aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialisation.
- **Virtual incubation:** It also envisions to promote virtual incubation for startups by enabling 300 incubators to support startups from all corners of the country.
- **Corpus:** Rs. 945 Crore corpus will be allocated over the next 4 years for providing seed funding to eligible startups through eligible incubators across India.
 - ♦ It is expected to support an estimated 3,600 startups.
- **Online Portal:** An online portal has been created by Department for Promotion of Industry and Internal Trade (DPIIT) for the scheme to allow incubators to apply for funds under it.
- **Implementation authority:** An Experts Advisory Committee (EAC) has been created by DPIIT (Ministry of Commerce and Industry) to execute and monitor the Startup India Seed Fund Scheme.
 - ♦ EAC will evaluate and select incubators for allotment of Seed Funds, monitor progress, and take all necessary measures for efficient utilization of funds
- **Grants:**
 - ♦ Grants upto ₹5 crore shall be provided to the eligible incubators selected by the EAC.
 - ♦ The selected startups shall be provided grants of up to ₹20 lakh for validation of proof of concept, prototype development or product trials to startups.
 - ♦ Furthermore, investments of up to ₹50 lakh shall be provided to the startups for market entry, commercialisation, or scaling up through convertible debentures or debt-linked instruments.

SEED FUNDING

- It typically represents the first official money that a business venture or enterprise raises. It helps a company to finance its first steps, including things like market research and product development.
- There are many potential investors in a seed funding situation: founders, friends, family, incubators, venture capital companies and more.

• Eligibility:

♦ For startups:

- A startup, recognized by DPIIT, incorporated not more than 2 years ago at the time of application.
- Startup should not have received more than Rs 10 lakh of monetary support under any other Central or State Government scheme.
- Shareholding by Indian promoters in the startup should be at least 51% at the time of application

♦ For Incubators:

- **If government funded** – Must be operational for at least 2 years and must have at least 5 startups undergoing incubation physically.
- **If privately funded** - Must be operational for at least 3 years and must have at least 10 startups undergoing incubation physically.

Significance of the scheme:

- It would secure seed funding, inspire innovation, support transformative ideas, facilitate implementation, and start a startup revolution.

ABOUT STARTUP INDIA INITIATIVE

- It envisages building a robust Startup ecosystem in the country for nurturing innovation and providing opportunities to budding entrepreneurs. It was launched in 2016.
- The action plan of this initiative focuses on following three areas: Simplification and Handholding, Funding Support and Incentives and Industry-Academia Partnership and Incubation.
- It would create a robust startup ecosystem, particularly in tier 2 and tier 3 towns of India, which are often deprived of adequate funding.

INFLATION TARGET RETAINED BY CENTRAL GOVERNMENT

The Central government has retained the inflation target of 4%, with a tolerance band of +/- 2 percentage points for Monetary Policy Committee (MPC) for the next five years.

About:

- Earlier, the RBI in its Currency and Finance (RCF) report for the year 2020-21 also recommended the inflation target to be kept same as 4% +/-2% for next 5 years.
- The six-member MPC, headed by the RBI governor, decides on the monetary policy based on the inflation target.
 - ♦ MPC was recommended by RBI-appointed committee in 2014 led by the then deputy governor Urjit Patel.
- The inflation targets for the period April 1, 2021, to March 31, 2026, under the Reserve Bank of India Act, 1934, has been kept at the same level as it was for the previous five years.

SET FOR 2ND TIME

➤ This is the second time that inflation target has been set since the monetary policy framework was put in place five years ago



➤ While RBI has largely been able to manage inflation within prescribed band, it had missed the target for three consecutive quarters, something that requires an explanation

➤ Central bank officials have argued that inflation data for the lockdown period is inaccurate

About Monetary Policy and Inflation Targeting:

- Monetary Policy refers to the use of monetary instruments under the control of the central bank (i.e., Reserve Bank of India) to regulate magnitudes such as interest rates, money supply and availability of credit with a view to achieving the ultimate objective of economic policy.
- The Reserve Bank of India (RBI) is vested with the responsibility of conducting monetary policy.

- This responsibility is explicitly mandated under the Reserve Bank of India Act, 1934.
- **Inflation Targeting – The major goal of monetary policy:** The central bank and the government agreed in 2015 on a policy framework that stipulated a primary objective of monetary policy to maintain price stability while keeping in mind the objective of growth.
- In May 2016, the Reserve Bank of India (RBI) Act, 1934 was amended to provide a statutory basis for the implementation of the flexible inflation targeting (FIT) framework.
 - ♦ The Act allows the Centre to set the inflation target in consultation with the RBI once every five years.
 - ♦ On that basis, India's inflation target was set at 4% with a tolerance band of +/- 2 percentage points.
 - ♦ The Consumer Price Index (CPI) was chosen as the key parameter for measuring inflation.
- According to the mandate, if the RBI fails to keep inflation within 2-6 per cent for three consecutive quarters, it has to write to the government to justify the reasons for it.
- **Monetary Policy Process:** The amended RBI Act, 1934 provides for an empowered six-member monetary policy committee (MPC) to be constituted by the Central Government.
 - ♦ The MPC determines the policy interest rate required to achieve the inflation target.
 - ♦ The decision of the Monetary Policy Committee shall be binding on the Bank.
 - ♦ The Reserve Bank's Monetary Policy Department (MPD) assists the MPC in formulating the monetary policy.
- **Composition of MPC** – It comprises six members - three officials of the Reserve Bank of India and three external members nominated by the Government of India.
 - ♦ The Governor of the Bank—Chairperson, ex officio;
 - ♦ Deputy Governor of the Bank, in charge of Monetary Policy—Member, ex officio;
 - ♦ One officer of the Reserve Bank of India to be nominated by the Central Board—Member, ex officio
 - ♦ Three persons to be appointed by the Central Government—Members. They hold office for a period of four years or until further orders, whichever is earlier.

Open and Transparent Monetary Policy Making:

- **Transparency in functioning of MPC** –
 - ♦ The MPC is required to meet at least four times in a year.
 - ♦ The quorum for the meeting of the MPC is four members.
 - ♦ Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.
 - ♦ On the 14th day, the minutes of the proceedings of the MPC are published highlighting the resolution adopted and vote and views of each member.

- Once in every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report to explain:
 - ♦ the sources of inflation; and
 - ♦ the forecast of inflation for 6-18 months ahead.

Instruments of Monetary Policy:

- There are several direct and indirect instruments that are used for implementing monetary policy.
- **Repo Rate:** The (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).
- **Reverse Repo Rate:** The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF.
- **Liquidity Adjustment Facility (LAF):** The LAF consists of overnight as well as term repo auctions.
 - ♦ **The aim of term repo** is to help develop the inter-bank term money market, which in turn can set market-based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy.
 - ♦ The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.
- **Marginal Standing Facility (MSF):** A facility under which scheduled commercial banks can borrow additional amount of overnight money from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest.
 - ♦ This provides a safety valve against unanticipated liquidity shocks to the banking system.
- **Corridor:**
 - ♦ It refers to the area between the reverse repo rate and the MSF rate.
 - ♦ Reverse repo rate will be the lowest of the policy rates whereas Marginal Standing Facility is something like an upper ceiling with a higher rate than the repo rate.
 - ♦ The daily movement in the weighted average call money rate will vary in this range.
- **Bank Rate:** It is the rate at which the Reserve Bank is ready to buy or rediscount bills of exchange or other commercial papers.
 - ♦ This rate has been aligned to the MSF rate and, therefore, changes automatically as and when the MSF rate changes alongside policy repo rate changes.
- **Cash Reserve Ratio (CRR):** The average daily balance that a bank is required to maintain with the Reserve Bank as a share of such per cent of its Net demand and time liabilities (NDTL)

that the Reserve Bank may notify from time to time in the Gazette of India.

- **Statutory Liquidity Ratio (SLR):** The share of NDTL that a bank is required to maintain in safe and liquid assets, such as, unencumbered government securities, cash and gold.
 - ♦ Changes in SLR often influence the availability of resources in the banking system for lending to the private sector.
- **Open Market Operations (OMOs):** These include both, outright purchase and sale of government securities, for injection and absorption of durable liquidity, respectively.
- **Market Stabilisation Scheme (MSS):**
 - ♦ It was introduced in 2004.
 - ♦ Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills.
 - ♦ The cash so mobilised is held in a separate government account with the Reserve Bank.

TYPES OF INFLATION TARGETING

- **Strict Inflation Targeting:** It is adopted when the central bank is only concerned about keeping inflation as close to a given inflation target as possible, and nothing else.
- **Flexible Inflation Targeting:** It is adopted when the central bank is to some extent also concerned about other things, for instance, the stability of interest rates, exchange rates, output and employment.

UNIQUE LAND PARCEL IDENTIFICATION NUMBER (ULPIN) SCHEME

The Centre plans to issue a 14-digit identification number to every plot of land in the country within a year's time.

About:

- The ULPIN scheme has been launched in ten States this year and will be rolled out across the country by March 2022.
- **Aim:** It aims to integrate the land records database with revenue court records and bank records.
 - ♦ One can also link land records with Aadhaar numbers on a voluntary basis.
- **Methodology:** A 14-digit Alpha-numeric unique ID would identify every surveyed parcel of land.
 - ♦ The identification will be based on the longitude and latitude coordinates of the land parcel.
 - ♦ It will be dependent on detailed surveys and geo-referenced cadastral maps.

- **Ministry:** It has been launched by the Department of Land Resources, Ministry of Rural Development.
- It is the next step in the Digital India Land Records Modernisation Programme (DILRMP).



Benefits of ULPIN Scheme:

- **Updated land records** - It will ensure uniqueness in all transactions and keep the land records always up-to-date.
- **Prevent land frauds** - It will prevent land frauds by establishing a link of all property transactions.
 - ♦ It is significant in the hinterlands of rural India, where land records are outdated and often disputed.
- **Single window system** - It will help in delivery of citizen services of land records through the single window by sharing of land records data across departments, financial institutions and all stakeholders.
 - ♦ Standardization at data and application-level would bring in effective integration and interoperability across departments.
- **Integrated land Information** - Proper land statistics and land accounting through ULPIN will help develop land bank and lead towards Integrated Land Information Management System (ILIMS).

DIGITAL INDIA LAND RECORDS MODERNISATION PROGRAMME (DILRMP)

- It is a Central Sector scheme launched by Department of Land Resources in 2008.
 - ♦ It was the result of merger of two schemes - Computerisation of Land Records (CLR) & Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR).
- The main aims of DILRMP are to usher in a system of
 - ♦ updated land records
 - ♦ automated and automatic mutation
 - ♦ integration between textual and spatial records
 - ♦ inter-connectivity between revenue and registration
 - ♦ to replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.
- It attempts to build upon the commonalities that exist in the arena of land records in various States to develop an appropriate Integrated Land Information Management System (ILIMS) across the country.

- ♦ Different States can also add State-specific needs as they may deem relevant and appropriate.
- The DILRMP has 3 major components
 - ♦ Computerization of land record
 - ♦ Survey/re-survey
 - ♦ Computerization of Registration.
- Implementation:
 - ♦ The State Governments/UT Administrations implement the programme with financial and technical supports from the Dept. of Land Resources.
 - ♦ The district has been taken as the unit of implementation, where all activities under the programme converge.

Other initiative taken under DILRMP:

National Generic Document Registration System (NGDRS)

- It aims to provide, one Nation one software for registration of documents & properties to 'empower citizens'.
- It would thus help in
 - ♦ Reduced process and time of document registration at Sub Registrar level as per reports from two state governments.
 - ♦ Reduction of land disputes and check on fraudulent transactions.

EMERGENCY CREDIT LINE GUARANTEE SCHEME (ECLGS)

The government has extended the ₹3-lakh-crore emergency credit line guarantee scheme till June 30, 2021 and also widened its scope.

About:

- The new sectors, including hospitality, travel and tourism have become the part of expanded scheme.
- The Emergency Credit Line Guarantee Scheme (ECLGS) was launched as part of Centre's Covid-19 relief package called the Aatmanirbhar Bharat Abhiyan.
- The objective was to support small businesses struggling to meet their operational liabilities due to the imposition of a nationwide lockdown.
- It aims to provide 100% guarantee coverage to banks and NBFCs to enable them to provide collateral-free emergency credit facilities worth Rs 3 lakh crore to MSMEs to meet their working capital requirements.
 - ♦ MSMEs for the purpose of this Scheme include
 - MSMEs/ Business Enterprises which are constituted as Proprietorships, Partnerships, Registered Companies, Trusts and Limited Liability Partnerships (LLPs)
 - Interested borrowers under Pradhan Mantri MUDRA Yojana (PMMY).

- The credit facility is guaranteed by the National Credit Guarantee Trustee Company Ltd (NCGTC).
- The validity of entire ECLGS – ECLGS 1.0, ECLGS 2.0 and ECLGS 3.0 – have been extended up to June 30, 2021 or till guarantees for an amount of ₹ 3 lakh crore are issued.

ECLGS 1.0 (May 2020):

- An emergency credit line is offered to MSMEs and other businesses up to 20 per cent of their entire credit outstanding as of February 29, 2020.
- MSMEs with up to Rs 50 crore outstanding and Rs 250 crore turnover are eligible.
- The tenor of the credit is 4 years, including a one-year moratorium
- The MSME should not have any non performing asset (NPA).

ECGLS 2.0 (Nov 2020):

- It extended the ECGLS scheme to support 26 stressed sectors identified by the Kamath Committee and the healthcare sector.
- Companies with outstanding dues of Rs 50-200 crore as at February 29, 2020 are eligible to apply.
- The tenor of the credit is 5 years, including a one-year moratorium.
- The turnover cap was removed and it mandated borrower accounts to be less than or equal to 30 days overdue.
 - ♦ It means they should not have been classified as SMA 1, SMA 2, or NPA by any of the lenders as of 29th February 2020.

ECGLS 3.0 (March 2021):

- ECGLS has been extended to Hospitality, Travel and Tourism, Leisure, and Sporting sectors, which are among those most affected by the Covid-19.

- It involves the extension of credit of up to 40 percent of the total credit outstanding as of February 29, 2020, from 20 percent earlier.
- It will only consider loans less than 60 days overdue as on February 29, 2020, with total credit outstanding not exceeding Rs 500 crore.
- The tenor of loans granted would be 6 years, including a moratorium period of 2 years.

SPECIAL MENTION ACCOUNTS (SMA)

- These are those assets/accounts that show symptoms of bad asset quality in the first 90 days itself or before it is identified as NPA.
- There are four types of Special Mention Accounts – SMA-NF, SMA 0, SMA1, and SMA 2.
- The Special Mention Accounts are usually categorized in terms of duration
 - ♦ **SMA-0** - Principal or interest payment not overdue for more than 30 days but account showing signs of incipient stress
 - ♦ **SMA-1** – Principal or interest payment overdue between 31-60 days
 - ♦ **SMA-2** - Principal or interest payment overdue between 61-90 days.

NATIONAL CREDIT GUARANTEE TRUSTEE COMPANY LTD (NCGTC)

- It is a private limited company incorporated under the Companies Act 1956 in 2014,
- It was established by the Department of Financial Services, Ministry of Finance, as a wholly owned company of the Government of India.
- It acts as a common trustee company for multiple credit guarantee funds.

ECLGS - Features

1

ECLGS provides 100% guarantee for the loans mobilised by the eligible MSMEs from the identified lenders including banks.

2

Loans taken by MSMEs from banks and NBFCs will be guaranteed with conditionalities.

3

With Rs 3 lakh crore fund disbursement, ECLGS is the biggest supportive measure by the government under the Atmanirbhar Bharat scheme.

4

The credit facility is guaranteed by the National Credit Guarantee Trustee Company (NCGTC).

5

NCGTC gives guarantee to loans provided by member banks and NBFCs to the eligible MSMEs.

6

Imp condition: The loan availing MSMEs should not have any NPAs.



INTERNATIONAL RELATIONS

PAKISTAN FREEZES PLANS TO OPEN IMPORTS FROM INDIA

Pakistan rejects proposal to import cotton and sugar from India.

About:

- Pakistan's Cabinet rejected a proposal of its Economic Coordination Committee (ECC) to import cotton and sugar from India.
- Pakistan said that until the unilateral decisions taken by India on **August 5, 2019** are not reconsidered, it would be impossible to normalize relations with India.
- **NOTE:** The bilateral trade relations were suspended after the August 5, 2019 decision of New Delhi to revoke the special status of Jammu and Kashmir.
- India is the world's biggest producer of cotton and the second biggest sugar manufacturer.

India-Pakistan trade before ban:

- **Trade linked with politics:** Trade between the neighbours has always been linked to politics.
 - ♦ So, India's exports to Pakistan fell around 16 per cent to \$1.82 billion in 2016-17 from \$2.17 billion in 2015-16 after relations deteriorated in the aftermath of the Uri terror attack and the Indian Army's surgical strikes on militant launch pads in Pakistan-occupied Kashmir in 2016.
- **Growth in trade:** Despite continuing tensions, trade between the two countries grew marginally in subsequent years; Indian exports rose nearly 6 per cent to \$1.92 billion in 2017-18, and then by around 7 per cent to \$2.07 billion in 2018-19.
- **Imports from Pakistan:** though much less in volume, also increased by 7.5 per cent to \$488.56 million in 2017-18 from \$454.49 million in 2016-17.
 - ♦ Growth of imports from Pakistan slowed to around \$494.87 million in 2018-19 — an increase of around 1 per cent — before political relations entered a deep freeze in 2019.

What are the Major products traded?

- **India has trade surplus:** Over the years, India has had a trade surplus with Pakistan, with much less imports than exports.
- **India's top 50 trade partners:** Pakistan was among India's top 50 trade partners in 2018-19, but was pushed out of the list in 2019-20.
- **Textiles and pharmaceuticals:** It had been anticipated that a

trade ban between the countries would affect Pakistan more, since it relied heavily on India for key raw materials for its textiles and pharmaceuticals industries.

- **Cotton and organic chemicals:** In 2018-19, cotton and organic chemicals accounted for around half of Pakistan's imports from India.
- **Other major Pakistani imports from India:** includes plastic, tanning/dyeing extracts, and nuclear reactors, boilers, machinery, and mechanical appliances.
- **Fall of import:** After the ban, imports of these five products fell drastically to \$1 million to \$2 million between April 2020 and January 2021, while cotton imports stopped altogether.
- **The only increase has been in pharmaceutical products:** Pakistan has so far imported around \$67.26 million worth of drug products, and over \$115 million worth of organic chemicals to ensure sufficient supplies of medicines during the Covid-19 pandemic.
- **India's major imports from Pakistan:** were mineral fuels and oils, edible fruits and nuts, salt, sulphur, stone and plastering materials, ores, slag and ash and raw hides and leather.

INDIA'S TRADE WITH PAKISTAN (IN \$)

Year	Exports	Imports	Trade Balance
2018-19	2.07 billion	494.87 million	1.57 billion
2019-20	816.62 million	13.97 million	802.65 million
2020-21*	240.99 million	2.15 million	238.84 million

*April to January, Source: Ministry of Commerce and Industry

MAJOR PRODUCTS TRADED BETWEEN INDIA AND PAKISTAN (IN \$)

India's Top Exports to Pakistan	2018-19	2019-20	2020-21*
Cotton	550.33 mn	64.25 mn	0
Organic chemicals	457.75 mn	273.97 mn	115.92 mn
Plastic and articles thereof	131.19 mn	42.62 mn	1.43 mn
Tanning or dyeing extracts, etc.	114.48 mn	39.47 mn	0.92 mn
Nuclear reactors, boilers, machinery, etc	94.88 mn	42.42 mn	1.28 mn
India's Top Imports from Pakistan	2018-19	2019-20	2020-21*
Mineral fuels and oils and products of their distillation, etc	131.29 mn	0.01 mn	N/A
Edible fruit and nuts, peel or citrus fruit or melons	103.27 mn	0.92 mn	0.85 mn
Salt, sulphur, earths and stone, plastering materials, lime and cement	92.84 mn	1.31 mn	0.20 mn
Ores, slag and ash	17.18 mn	0.03 mn	N/A
Raw hides and skin (other than fur skins) and leather	16.27 mn	N/A	N/A

*April to January, Source: Ministry of Commerce and Industry

Major reasons for decline of trade:

- **Jammu and Kashmir issue:** Pakistan's decision to suspend bilateral trade with India in August 2019 was fallout of the constitutional changes in Jammu and Kashmir, which Pakistan said were "illegal".
- **200 per cent tariff imposed by India:** However, an underlying reason for suspending trade was the 200 per cent tariff imposed by India on Pakistani imports earlier that year after India revoked Pakistan's Most Favoured Nation (MFN) status in the aftermath of the Pulwama terrorist attack.
 - ♦ Trade between the two countries suffered greatly – India's exports to Pakistan dropped nearly 60.5 per cent to \$816.62 million, and its imports plummeting 97 per cent to \$13.97 million in 2019-20.

What was the need for this change?

- **Shortage in raw material:** The Pakistani decision to lift the ban on cotton imports comes in the backdrop of a shortage in raw material for Pakistan's textile sector, which has reportedly suffered due to low domestic yields of cotton.
- **US and Brazil factor:** Also, imports from countries like the US and Brazil is costlier and takes longer to arrive.
- **High domestic prices of sugar:** The decision on sugar was dictated by high domestic prices.
 - ♦ Pakistani sugar imports in the period July 2020-February 2021 zoomed to 278,733 metric tonnes from 4,358 metric tonnes in the same period in 2019-20.
 - ♦ The increase in imports of the commodity was a measure "to stabilize the market prices".
 - ♦ There has been sugar dependence between the two countries forever.

Way Forward:

- This might be a good time for India to explore a reduction in its 200 per cent import duties on products that its industries can benefit from.
- Indian industry would play a very important role in this. It is for the industry to say this is what we need and this is where duties can be brought down.

ARMENIAN GENOCIDE

Recently, the US President officially recognised the mass killings of Armenians by Ottoman Turks in 1915-16 as an act of genocide.

About:

- The **Armenian Genocide** was the systematic mass murder and ethnic cleansing of around one million ethnic Armenians from Anatolia and adjoining regions by the Ottoman Empire and its

ruling party.

- **On April 24**, Joe Biden became the first US President to declare that the 1915 systemic massacre of Armenians constituted **an act of genocide**.
- It often called **the first genocide** of the 20th century
- Polish lawyer Ralph Lemkin **first coined the term** genocide in 1944.
- After the First World War broke out in November 1914, the Ottoman Turks participated in the war, siding with Germany and the Austro-Hungarian empire. The Ottoman Turks believed the Armenians would side with Russia in the war. This resulted in the Ottoman Turks engaging in a mass-removal campaign of Armenians from the border areas along the Eastern Front.
- In 1915, there were approximately 1.5 million Armenians living in the Ottoman Empire. By the end of 1916, between 660,000 and 1.2 million of them were killed, either through massacres or **from systemic ill-treatment, exposure and starvation**.

International recognition:

- Thus **far only 30 nations** including Brazil, Canada, Lebanon, Cyprus and Syria have acknowledged the genocide publicly.
- It is interesting to study why the international community has overwhelmingly rejected the notion of the Armenian genocide, particularly during the 20th century?
 - ♦ Turkey's geostrategic and economic significance.
 - ♦ Turkey was **an important partner to the West**.
 - ♦ "Armenia is a small state that has acquaintances, rather than friends. Meanwhile, Turkey is a powerful actor in the Middle East and a crucial hub that connects Asia to Europe."
 - ♦ Although Turkey **remained neutral during most of World War 2**, it sided with the allied powers once it eventually entered the War.
- **Turkey's foreign policy was firmly oriented towards the West.**
 - ♦ Turkey also maintains **strong ties with countries in Asia and Africa** which allows it to exert influence over genocide recognition in those regions.
 - ♦ It possesses an extensive historical connection with sub-Saharan Africa dating back to the 1860s, is actively involved in peacekeeping missions there and provides significant financial aid to the region.
 - ♦ It conducts high volumes of trade with countries such as Iraq, Egypt and China and is an important tourist destination for citizens from several North African countries.
 - ♦ Turkey has recently increased its presence in the Asia-Pacific, participating in joint dialogues with ASEAN and engaging in extensive diplomatic partnerships with Japan and India.

Reasons for recognition:

Principles of both morality and realpolitik:

- According to Balakian, Western nations could no longer ignore the ethical considerations surrounding the genocide.
- America in particular felt as though it had a “**moral imperative**” to deliver on promises made to the Armenian people.
- The relationship between Turkey and Europe has been based on the principle of reciprocity. Turkey’s bid to join the EU in 2005 was met with significant resistance from EU member states, and subsequently, Turkey proceeded to drift further away from the bloc.
- Similarly, in the last few years, Turkey’s relationship with the United States has grown increasingly strained
 - ♦ In a 2019 interview given to the New York Times, then former Vice President Biden described Turkish President Recep Tayyip Erdogan as an autocrat.
 - ♦ Later as President, he approved a government report criticising Turkey for its human rights abuses.
 - ♦ In 2020, Trump sanctioned Turkey for its multi-billion-dollar acquisition of Russian missile systems.

India’s Stand:

- India does not have any domestic law on genocide, even though it has ratified the United Nations Convention on Genocide.
- India, that has not formally recognised the Armenian Genocide has primarily adopted this stance in the interests of its wider foreign policy decisions and geo-political interests in the region.

Way Forward:

- Ultimately, Biden’s announcement could provide cause for optimism. Balakian affirms that recognition of the genocide by the US is a powerful statement and will be celebrated by Armenian communities worldwide.

CHINA, IRAN SIGN 25-YEAR ‘STRATEGIC PACT’

China and Iran, both subject to U.S. sanctions, signed a 25-year cooperation agreement.

About:

- The pact, which was first proposed in 2016, forms part of China’s trillion-dollar Belt and Road Initiative.
- The project aims to significantly expand China’s economic and political influence, and has raised concerns in the United States.

Major highlights about the deal:

- **Investment:** China is to invest US\$400 billion in Iran’s economy over that time period in exchange for a steady and heavily-discounted supply of oil from Iran.
 - ♦ In 2016, China agreed to boost bilateral trade by more than ten times to \$600 billion in the next decade.
- **Vaccine diplomacy:** It has also been promised that China would provide more corona virus vaccines to Iran, the Middle Eastern country worst-hit by the pandemic.
- **Both are rivals to US:** This has brought the two US rivals closer to each other.
- **Long time ally:** China is Iran’s long time ally.
- **Trade and Oil:** China is Iran’s leading trade partner and was one of the biggest buyers of Iranian oil before the sanctions were placed on Iran by the US.

Iran China Relations:

- **Diplomatic relations:** The Republic of China and the Imperial State of Iran officially established diplomatic relations in 1937.
- **Cold war era:** In the early years of the Cold War, Iran and the People’s Republic of China were on opposing sides of the Iron Curtain, with Iran being a part of the American-led Western Bloc and China being a part of the Soviet-led Eastern Bloc.
- **Iranian Revolution:** Following the 1979 Iranian Revolution, which established the present-day Islamic Republic of Iran, the two states maintained their diplomatic relationship as Iran and the United States severed their bilateral ties during the Iran–U.S. hostage crisis.
- **International sanctions:** Iran was eventually put under international sanctions, although China still provided aid in the form of armaments to the Iranians during the Iran–Iraq War.
- **The Shanghai Cooperation Organization:** on which Iran is an observer state, and the 25-year Iran–China program are both part of the Chinese Belt and Road Initiative, so it is likely that Iran’s request for permanent membership will be repeated in the near future and will be accepted by all its members.

IRAN NUCLEAR DEAL

- It is also known as the **Joint Comprehensive Plan of Action (JCPOA)**.
- The JCPOA was the result of prolonged negotiations from 2013 and 2015 between Iran and P5+1 (China, France, Germany, Russia, the United Kingdom, the United States, and the European Union, or the EU).
- Iran agreed to significantly cut its stores of centrifuges, enriched uranium and heavy-water, all key components for nuclear weapons under this treaty.

GEOGRAPHY OF IRAN

- Iran is located in West Asia and borders the Caspian Sea, Persian Gulf, and Gulf of Oman.
- The topography of Iran consists of rugged, mountainous rims surrounding high interior basins.
- The main mountain chain is the Zagros Mountains.

Concerns for India due to this deal:

- **Chabahar port and development projects:** India is concerned about its strategic phases surrounding the Chabahar port project that it has been developing.
- **Security and military cooperation:** China is also finalizing security and military cooperation with Iran. China's massive investment in the development of Iran's ports could eventually be transformed into a permanent military alliance with Iran.
- **Impact on relations with other nations:** The growth of Chinese measures in Iran will have a lasting impact on India-Iran relations not only but also in Afghanistan and Central Asian nations.
- **Political dispute:** India finds itself embroiled in a political dispute between the US and China over Iran.

India-Iran relations: An Overview

- **Trade ties:** There are significant trade ties, particularly in crude oil imports into India and diesel exports to Iran.
- **Supporter of India at various platforms:** Iran frequently objected to Pakistan's attempts to draft anti-India resolutions at international organisations such as the OIC and the Human Rights Commission.
- **Inclusion as an observer state in the SAARC:** India welcomed Iran's inclusion as an observer state in the SAARC regional organisation.
- **Zaranj-Delaram Highway:** A highway between Zaranj and Delaram is being built with financial support from India.
- **The Chabahar port:** has also been jointly financed by Iran and India. It will give it access to the oil and gas resources in Iran and the Central Asian states.
- **Members in the North-South Transport Corridor:** It is the ship, rail, and road route for moving freight between India, Russia, Iran, Europe, the Caucasus, and Central Asia.
- **Religious factor:** The world's largest population of Zoroastrians are the Parsi community in India.

ACCESS TO COVID-19 TOOLS (ACT) ACCELERATOR

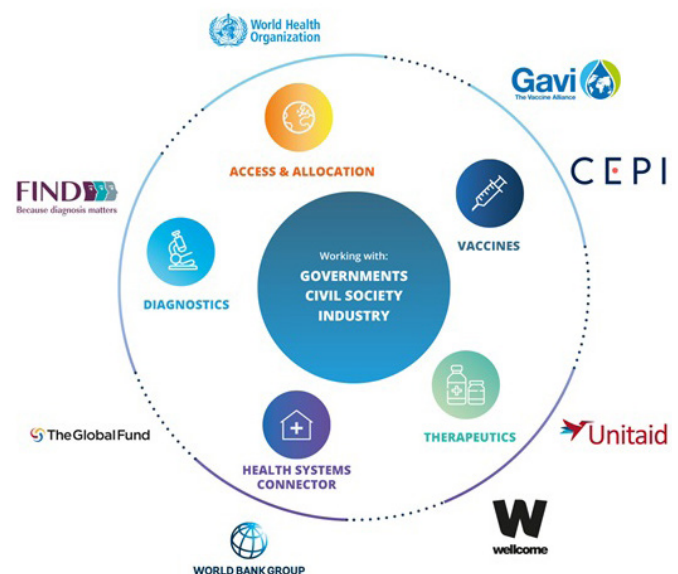
Carl Bildt has been appointed as WHO Special Envoy for the Access to Covid-19 Tools Accelerator (ACT-Accelerator).

About:

- Dr Tedros Adhanom Ghebreyesus, WHO Director-General, appointed Mr Carl Bildt, former Prime Minister of Sweden as the WHO Special Envoy for the Access to COVID-19 Tools Accelerator (ACT-Accelerator).

Access to COVID-19 Tools Accelerator (ACT-Accelerator):

- **What is it-** It is global collaboration launched in April 2020 to accelerate development, production, and equitable access to COVID-19 tests, treatments, and vaccines to end the pandemic as soon as possible.
- It brings together governments, scientists, businesses, civil society, and philanthropists and global health organizations and was set up in response to a call from the G20 leaders.
- It is not a decision-making body or a new organization but works to speed up collaborative efforts among existing organizations to end the pandemic.
- **Members-** The Bill & Melinda Gates Foundation (BMGF), Coalition for Epidemic Preparedness Innovations (CEPI), Foundation for Innovative New Diagnostics (FIND), The Global Alliance for Vaccines and Immunizations (Gavi), The Global Fund, Unitaid, Wellcome, the WHO, and the World Bank.
- WHO, through its Access and Allocation workstream has developed the principles, framework and mechanisms needed to ensure the fair and equitable allocation of the tools.



Four pillars of work-

- **Diagnostics-** Focus to bring to the market 2-3 high-quality rapid tests, training 10,000 healthcare professionals across 50 countries and establish testing for 500 million people in Low and Middle-Income countries by mid-2021.

- ♦ **Therapeutics-** Aim in the next 12 months is to develop, manufacture and distribute 245 million treatments, helping COVID-19 sufferers to recover from the disease.
- ♦ **Vaccines (COVAX)-** Speed up search for an effective vaccine for all countries, supporting the building of manufacturing capabilities, and buying supply, ahead of time so that 2 billion doses can be fairly distributed by the end of 2021.
- ♦ **Health system strengthening-** It aims to rapidly identify and address country-specific health systems bottlenecks, enable rapid scale up and delivery of COVID-19 tools, and accelerate availability and use of Personal Protective Equipment (PPE) as a crucial tool for protecting health workers and ensuring the resilience of the health system.

GAVI ALLIANCE

- It is a global health partnership of public and private sector organizations dedicated to "immunisation for all".
- It has helped vaccinate 822 million children in the world's poorest countries, preventing more than 14 million future deaths and has helped reduce the cost of immunization.
- It was founded in 2000 and is headquartered at Geneva, Switzerland.

INDIA - SEYCHELLES VIRTUAL MEET

High level virtual meeting was held between Indian Prime Minister Narendra Modi and Seychelles President Wavel Ramkalawan. Few projects were jointly inaugurated by them.

About:

- India-Seychelles ties date back to 1976 when the latter had just got independent. For the celebrations, INS NILGIRI was sent from India to be its part. Since then, it has become a tradition for participation by Indian Military on Independence Day of Seychelles. Seychelles President has ancestral roots in Parsauni village of Gopalganj district, Bihar.
- In 2015, PM Modi, on his Indian Ocean Region tour visited Seychelles, making it his first stop. It was the 1st visit by an Indian PM after a gap of 33 years. The country has always remained important for India culturally and strategically.
- In this virtual meeting some new projects were inaugurated thereby helping Seychelles grow its economy, judicial system, maritime security and other aspects. The projects are:
 - ♦ **New Magistrates Court Building:** located in the capital city of Victoria. It is India's first civil infrastructure project in the country. It is situated next to the Supreme Court of the country which was built by Chinese assistance in 2013.



- ♦ **Fast Patrol Vessel, PS Zoroaster,** was gifted to the country in March 2021 but during this meeting was handed over to the coast Guards. It is a state of art, 48.9m, made in India, by Garden Reach Shipbuilders and Engineers Ltd, and given to strengthen maritime security of the island nation. It will help protect the maritime resources. It has many uses such as:
 - Patrolling
 - Anti-smuggling
 - Anti-poaching
 - Search and rescue
- It is the 4th ship gifted to the country by India. Other three being:
 - ♦ PS Topaz (2005)
 - ♦ PS Constant (2014)
 - ♦ Patrol Boat Hermes (2016)
- **10 High Impact Community Development Project (HICDPs):** They have a human centric approach to development cooperation. It is implemented by the High Commission of India along with Local Bodies, educational and vocational institutions. It has 29 people oriented projects contributing to socio economic development of the locals.
- **MegaWatt Solar Power Plant:** It was constructed at Seychelles with India's grant assistance. It embodies growth with care of nature principles. It was a part of the Solar PV Democratization Project being implemented there by GoI. It will generate 14 lakh units of power. In addition to this, 146 Government building roof-tops and domestic households were fitted with solar systems. It was done, keeping in view that climate change has a huge and severe impact on the island nations.

Other initiatives by India:

- As part of the Indo-Pacific Mission of India, SAGAR (Security and Growth for All in the Region) was launched. Seychelles is central to the initiative.
- Under the Vaccine Maitri Initiative, India provided 50,000 COVISHIELD, made in India Vaccine, to Seychelles. It became the first African country to receive such help from India.
- Under Mission SAGAR, 50,000 doses of Hydroxychloroquine (HCQ) tablets were given.
- 50% of maritime and 70% of capacity development for training, exercise and HR expertise is provided by India.

Initiatives by Seychelles:

- Blue Economy protocol was signed in 2015.
- Seychelles became the founding member of International Solar Alliance when it signed in 2018.
- Seychelles Government gave Assumption Island to India for building an overseas base for the navy.

SAGAR

- SAGAR stands for "security and growth for all in the region".
- Launched in 2015
- It was a Strategic plan made specially for the Indian Ocean Region.
- Aim was to deepen the economic and security ties.

Way Forward:

- Seychelles can prove to be a highly strategic country considering its geographical position in Indian Ocean region. The relations of India with Seychelles are growing stronger. Trade between the two countries is also improving. India has time and again proved to be a trusted and reliable partner.

MEETING OF EDUCATION MINISTERS OF E-9 COUNTRIES

India's Minister of State for Education attended the consultation meeting on the E-9 Initiative to accelerate it towards SDG 4.

About:

- This consultation was first in three phased processes to co-create an initiative on digital learning and skills, targeting marginalised children and youth, especially girls.
- The initiative aims to accelerate recovery and advance the Sustainable Development Goal 4 agenda by driving rapid

change in education systems in three of the 2020 Global Education Meeting priorities:

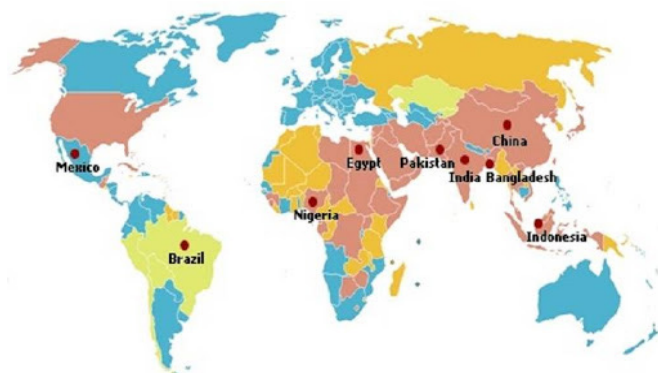
- Support to teachers
- Investment in skills
- Narrowing of the digital divide

E-9 COUNTRIES

- It was first established in 1993.
- The group includes Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria, and Pakistan.
- Representing over half of the world's population and some of the largest education systems in the world.
- The group can strengthen political will and collective effort to ensure quality education and lifelong learning opportunities for all, for the achievement of SDG4 – **Education 2030.**

2020 GLOBAL EDUCATION MEETING

- The world leaders gathered to put education at the centre of recovery and power education.
- They endorsed a 15-month emergency plan for education - the 2020 Global Education Meeting Declaration.



- UNICEF, UN, UNESCO also attended the meeting along with the Education Ministers of member countries. This meeting gained more importance in the backdrop of COVID 19 Pandemic which affected the Education sector strongly. The Department of Economic and Social Affairs (UN-DESA) has provided the following data:
- **Over 200 million children will still be out of school till 2030:** this shows that equitability and inclusiveness in education is still very slow.
- In low-income countries, children's school completion rate is 79% in the richest 20% of households and 34% in the poorest 20% of households.
- School closures kept 90% of all students out of schools. This reversed years of progress on education.
- Remote learning remains out of reach for at least 500 million students.

Digital Initiatives by India:

- India fared still better than some other countries. Diverse modes of education were used to impart education like television, digital, radio. Also, the largest entrance exams of the country, for 2.3 million aspiring medical and engineering students, were also held with utmost precaution. Other than this, various other digital tools were used:
 - One nation - one digital Platform – DIKSHA
 - One Nation - One channel Program – SWAYAMPARBHA
 - SWAYAM MOOCS
 - PM e-VIDYA
- Radio Broadcasting:** Govt is setting up National Digital Education Architecture to deliver a “digital-first” approach to support teaching and learning.

Way Forward:

- E-9 meet can prove to be a great platform for knowledge and experience sharing so that countries can grow on the education front even in the backdrop of Covid.
- Best practices should be shared and followed so as to protect the future generations from feeling the brunt of lack of education.
- The pandemic has shown the importance of digital means of education to provide affordable education for all. Strength of digital infrastructure and related tools and skills is the strength of the country.

OTHER INITIATIVE

- DIKSHA:** it is a national platform for school education, an initiative of NCERT. Developed on the core principle of:
 - Open architecture
 - Open access
 - Open licensing diversity
- SWAYAMPARBHA:** It is a group of 34 DTH channels devoted to telecasting of high-quality educational programmes on 24*7 basis using the GSAT-15 Satellite. Every day, there is new content for at least 4 hours which is repeated around 5 times a day.
- SWAYAM MOOCS:** It is world's largest online free e-learning Platform Portal designed to achieve 3 objectives:
 - Access
 - Equity
 - Quality
- SDG 4** deals with ensuring inclusive and equitable quality education and promotes lifelong learning opportunities for all.
- PM e-VIDYA:** To provide multi-modal access to education which benefitted nearly 250 million school going children across India.

US PUT INDIA ON ITS CURRENCY PRACTICES MONITORING LIST

Recently, the United States (US) placed 11 countries, including India in the Currency Practices Monitoring List.

About:

- The United States has **once again** included India in its monitoring list of countries with potentially “questionable foreign exchange policies” and “currency manipulation”.

India was last included in the currency watch list in October 2018, but removed from the list that came out in May 2019.

- This is a **label given by the US government to countries** it feels are engaging in “unfair currency practices” by deliberately **devaluing** their currency against the dollar.
- The practice would mean that the country in question is artificially **lowering the value of its currency to gain an unfair advantage over others**.
- The devaluation would **reduce the cost of exports** from that country and artificially show a **reduction in trade deficits as a result**.

Parameters:

- An economy meeting two of the three criteria in the Trade Facilitation and Trade Enforcement Act of 2015 is placed on the Monitoring List. This includes:
 - A “significant” bilateral trade surplus with the US — one that is at least \$20 billion over a 12-month period.
 - A material current account surplus equivalent to at least 2 percent of gross domestic product (GDP) over a 12-month period.
 - “Persistent”, one-sided intervention** — when net purchases of foreign currency totalling at least 2 percent of the country's GDP over a 12 month period are conducted repeatedly, in at least six out of 12 months.
- India met two of the three criteria according to the report—the trade surplus criterion and the “persistent, one-sided intervention” criterion.

Countries in the latest monitoring list:

- The US Department of the Treasury Office of International Affairs, in its latest report to the US Congress, has included- India, Taiwan and Thailand to its Monitoring List.
- Other countries in the latest list comprise China, Japan, Korea, Germany, Italy, Singapore, Malaysia, Mexico.

Why is India back in the Monitoring List again?

- India, which has for several years maintained a “significant” bilateral goods trade surplus with the US, crossed the \$20 billion mark.

- Based on the central bank's intervention data, India's net purchases of foreign exchange accelerated notably in the second half of 2019. India sustained net purchases for much of the first half of 2020, which pushed net purchases of foreign exchange to \$64 billion—or 2.4% of GDP—over the four quarters through June 2020.

Way Forward:

- The designation of a country as a currency manipulator **does not immediately attract any penalties**, but tends to dent the confidence about a country in the global financial markets.

17TH BIMSTEC MINISTERIAL MEETING

The meeting was chaired by Sri Lanka.

About:

- External Affairs Minister S Jaishankar underlined the importance of connectivity between members of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), which marks its silver jubilee next year.

Major highlights:

- India expressed commitment:** about taking the Bay of Bengal community to “new heights”. India was committed to increase regional cooperation within the grouping.
 - India hailed an initiative to create a connectivity master plan linking countries in South and Southeast Asia, and urged the speedy conclusion of a coastal shipping pact, besides another agreement allowing motor vehicles to ply via member countries.
 - India's north-eastern states form a key part of the master plan, with several road and river links passing through the region.
- Concerns:** All the seven-member States, including Myanmar which is witnessing a large-scale crackdown against anti-military protesters, took part.
 - Rohingya refugee crisis** which created bitterness between Myanmar and Bangladesh. This affected the working of the organisation to some extent as it could not develop a common charter.
 - Despite the crackdown India has chosen to maintain communication with the military junta in Myanmar because of diplomatic requirements.
- Various sectors:** The grouping has moved forward in several aspects of security cooperation including counter terrorism, intelligence sharing, coastal security, cyber security.
- BIMSTEC Master Plan:** The meeting also approved the BIMSTEC Master Plan for Transport Connectivity which will

be taken up during the next summit of the organisation to be hosted by Sri Lanka.

- Countries are moving towards operationalising common code of conduct in dealing with criminal matters.
- BIMSTEC Convention on Mutual Legal Assistance in Criminal Matters was also endorsed.
- The BIMSTEC master plan will also promote synergy with other connectivity frameworks such as the ASEAN master plan on connectivity 2025.
- It included in the master plan are the India-Myanmar-Thailand trilateral highway, Kolkata-Birgunj and Kolkata-Kathmandu links, Kolkata-Siliguri-Guwahati-Imphal link, and Kandy-Colombo link.

BIMSTEC

- It is an international organisation of seven nations of South Asia and Southeast Asia.
- Nearly 1.5 billion people or 22 per cent of the global population comes under the BIMSTEC and has a combined gross domestic product (GDP) of \$2.7 trillion.
- Besides India it includes Bangladesh, Myanmar, Sri Lanka, Thailand, Nepal and Bhutan.
- Formed in the 1990s, the group remained dormant for many years till it was revived a few years ago as an alternative to the South Asian Association for Regional Cooperation (SAARC).
- A BIMSTEC free trade agreement is under negotiation also referred to as the mini SAARC.
- Leadership is rotated in alphabetical order of country names. The permanent secretariat is in Dhaka, Bangladesh.
- Objectives:**
 - Provides cooperation to one another for the provision of training and research facilities in educational vocational and technical fields.
 - Promote active collaboration and mutual assistance in economic, social, technical and scientific fields of common interest.
 - Provides help to increase the socio-economic growth of the member countries.

BOAO FORUM FOR ASIA (BFA) ANNUAL CONFERENCE 2021

Boao Forum has recently celebrated its 20th anniversary and organized annual conference.

About:

- Boao Forum for Asia (BFA) organizes its annual Conference in Boao, Hainan province of China.

- The conference was held virtually this year due to COVID-19 pandemic and was attended by most of the head of states of its member nation with more than 2500 participants coming from more than 60 countries.
- This year's theme is 'A World in Change: Join Hands to Strengthen Global Governance and Advance Belt and Road Cooperation'.
- The main agenda is to strengthen mutual understanding in the post-pandemic era, create additional incentives for overall socio-economic growth and effective global governance.

Outcome of the Boao Forum for Asia (BFA) Annual Conference:

- **Multilateral World Order:** Chinese president called for a multilateral world order by remarking that global rules cannot be imposed "by one or a few countries" and attempts to "decouple" would not benefit any nation.
- **Protecting international order led by United Nations:** The forum discussed about upholding true multilateralism" and "safeguarding the UN-centered international system".
- **Joint Vaccine production:** Chinese president also discussed joint vaccine production that began with BRI partners to other nations who are members of Boao initiative.

Significance of the Boao Forum's annual conference:

- **China's International diplomacy:** The conference has been used by China to counter its international rivals mainly the USA.
- **Countering Quad:** China has also countered QUAD group through this forum by launching vaccine initiative.
- **Countering western powers on United Nations:** Chinese President in this forum urged nations to protect international order led by United Nations can be viewed as an attempt to counter western and USA's influence on the body.

BOAO FORUM FOR ASIA (BFA)

- Boao Forum for Asia (BFA) is an international not for profit organization jointly initiated by 26 member states in 2001, the members have now increased to 29.
- It holds its annual conference in Boao, Hainan province of China.
- The establishment of BFA is modelled on the lines of the World Economic Forum which bases its annual meeting in Davos-Klosters, Switzerland. Thus earning the name of 'Davos of the East'.
- It aims to promote economic integration in Asia and pool positive energy for the development of Asia and the world.
- India is a member of Boao Forum Asia.

DEATH OF CHAD'S PRESIDENT IDRISSE DÉBY

Chad's President Idriss Déby died after clashes with rebels in the north of the country.

About:

- Chad's President Idriss Déby died of his injuries following clashes with rebels in the north of the country.
- The clashes had started after he was projected as a winner for sixth consecutive term in provisional election results.
- **Immediate Cause:** The incident occurred when he had gone to visit the front line.

The army of Chad have been battling rebels belonging to a group named Fact (the Front for Change and Concord in Chad).

Impact of his assassination

- **Impact on fight against terrorism:** Chadian forces are considered to be the most effective of the Western-backed "G5" countries fighting Islamist militants in the Sahel region. His death will probably weaken the fight against terrorism in Sahel region and destabilize the polity of the region



Fig: Chad and its capital N'Djamena

FACT (THE FRONT FOR CHANGE AND CONCORD IN CHAD)

- This group was formed by disillusioned former army officers who accused President Déby of repression in the run-up to the election.
- Their base is located in Libya in the Tibesti Mountains, which straddle northern Chad and part of southern Libya and the Group has been accused of murdering President of Chad Idriss Déby.



INTERNAL SECURITY

NATIONAL SECURITY ACT (NSA)

Recently, NSA law was invoked in Uttar Pradesh to prevent the person from being released from judicial custody even when the accused had got bail.

About:

- Taken together, cow slaughter cases and communal incidents account for over half of all cases adjudicated by the Allahabad High Court in which the Uttar Pradesh administration invoked the draconian National Security Act (NSA) over the last three years.
- In 12 detentions under NSA between January 2018 and December 2020, the person remained in jail more than 200 days after the criminal court had already granted bail; in three detentions, the persons remained in jail for more than 300 days and in one case, for 325 days, and in another, for 308 days.

National Security Act-1980:

- **Definition:** The National Security Act is an act that empowers the government to detain a person if the authorities are satisfied that he/she is a threat to national security or to prevent him/her from disrupting public order.
- **Promulgation:** It was promulgated on September 23, 1980, during the Indira Gandhi government and its purpose is "to provide for preventive detention in certain cases and for matters connected therewith".
- **Key points** under National Security Act are:
 1. The act allows preventive detention for months.
 2. States or Centre can detain a person from acting in manner prejudicial to India's security.
 3. A person can be detained if he/she is a threat to India's relations with foreign countries.
 4. The Act is invoked to maintain public law and order.
 5. It empowers the government to detain foreigners and regulate his/her presence or expel him/her from India.
 6. The provisions in the Act are re-notified every quarter.

Criticism:

- **Detention:** A person can be detained for up to 12 months without a charge. A person can be held for 10 days without being told the charges against them.
- **Appeal:** The person can appeal before a high court advisory board but will not be allowed a lawyer during the trial.
- **Prevention from release:** In some cases it has been found that the National Security Act-1980 (NSA) was invoked to prevent

the person from being released from judicial custody even if the accused had got bail.

- **No Constitutional remedy:** The law takes away an individual's constitutional right to be produced before the magistrate within 24 hours as is the case when the accused is in police custody.
- **No right to bail:** The detained person also does not have the right to move a bail application before a criminal court.
- **Official protected:** Also, the DM who passed the detention order is protected under the Act: no prosecution or any legal proceeding can be initiated against the official who carried out the orders.
- **Habeas Corpus:** The writ of Habeas Corpus is the only protection guaranteed under the Constitution against the unchecked state power of taking people into custody under the NSA.

Safeguard:

- **Article 22(5):** One crucial procedural safeguard under the NSA is granted under Article 22(5), where all the detained persons have the right to make an effective representation before an independent advisory board, which consists of three members; and the board is chaired by a member who is, or has been, a judge of a High Court. Significantly, in all the 120 cases under scrutiny, the board upheld the detention.

Recent examples:

- On January 17, 2020, the Lieutenant Governor of Delhi passed an order conferring the Commissioner of Police with the power to detain under NSA for a period of three months. The order came when the national capital was witnessing protests against the Citizenship Amendment Act (CAA) and the National Register of Citizens (NRC).
- In January 2019, the BJP-led Uttar Pradesh arrested three persons under NSA in connection with an alleged cow-slaughter case.
- In November 2018, Manipur journalist Kishore Chandra Wangkhem was detained for 12 months under the NSA for a Facebook post against the chief minister.

MULTILATERAL MARITIME EXERCISE LA PÉROUSE

Indian Navy Ships INS Satpura and INS Kiltan alongwith P8I Long Range Maritime Patrol Aircraft participated in multilateral maritime exercise La Pérouse.

About:

- The Indian Navy ships and aircraft exercised at sea with ships and aircraft of French Navy (FN), Royal Australian Navy (RAN), Japan Maritime Self Defence Force (JMSDF) and United States Navy (USN) during the three day exercise.
- This exercise was held for the first time.

The Exercise La Pérouse:

- **France:** It was led by French Navy and had participation by FN Ships Tonnerre, an amphibious assault ship and frigate Surcouf.
- **USA:** The United States Navy was represented in the exercise by amphibious transport dock ship Somerset.
- **Australia:** Her Majesty's Australian Ships (HMAS) Anzac, a frigate and tanker Sirius had been deployed by RAN for participation in the exercise.
- **Japan:** Japan Maritime Self Defence Ship (JMSDF) was represented by the destroyer Akebono.
- **Helicopters:** In addition to the ships, integral helicopters embarked onboard ships also participated in the exercise.
- **Other exercises:** It also witnessed complex and advanced naval operations including surface warfare, anti-air warfare and air defence exercises, weapon firing exercises, cross deck flying operations, tactical manoeuvres and seamanship evolutions such as replenishment at sea.

Significance:

- **Friendly navies:** The exercise showcases high levels of synergy, coordination and interoperability between the friendly navies.
- **Inclusive Indo-Pacific:** Participation by the Indian Navy in the exercise demonstrates the shared values with friendly navies ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.

INS Satpura:

- Featuring a mix of Russian, Indian and Israeli weapon systems, INS Satpura is armed with long-range anti-ship missile system, anti-aircraft missile system, and missile defence system.

INS Kiltan:

- INS Kiltan (P30) is an anti-submarine warfare corvette of the Indian Navy built under Project 28. It is the third of four Kamorta-class corvettes under various stages of induction with the Indian Navy.

MULTINATIONAL MILITARY EXERCISE SHANTIR OGROSHENA

Multinational Military Exercise SHANTIR OGROSHENA 2021 (Front Runner of Peace) commenced on 04 April 2021 at Bangabandhu Senanibas, Bangladesh.

About:

- It was held to commemorate the birth centenary of Bangladesh's 'Father of the Nation' Bangabandhu Sheikh Mujibur Rahman.
- It marked a glorious 50 years of liberation.
- **Participants:** Indian Army contingent of 30 personnel participated along with the Royal Bhutan Army, Sri Lankan Army and Bangladesh Army from 04 Apr to 12 Apr 2021.
- **Observers:** Military observers from the USA, UK, Turkey, Kingdom of Saudi Arabia, Kuwait and Singapore were also in attendance throughout the exercise.

Exercise SHANTIR OGROSHENA:

- **Aim:** The aim of the exercise is to strengthen the procedures and enhance interoperability amongst neighbourhood countries to ensure robust peacekeeping operations in the region.
- **Peacekeeping:** The armies of all the participating nations share their valuable experiences and refine their drills & procedures in Peacekeeping operations.

Bangabandhu Sheikh Mujibur Rahman:

- **Birth:** Mujibur Rahman, also called Sheikh Mujib, was born in Tungipara, India (now in Bangladesh).
- **Leader:** He became the president (1971–72; 1975) and prime minister (1972–75) of Bangladesh.
- **Jailed:** He was jailed briefly as a teenager for agitating for Indian independence.
- **Career:** He began his formal political career in 1949 as a cofounder of the Awami League.
- **Political Autonomy:** The league advocated political autonomy for East Pakistan, the detached eastern part of Pakistan.
- **Violence:** Mujib's arrest in the late 1960s incited mob violence that eroded the Pakistani president's authority in East Pakistan.
- **Election:** In the elections of December 1970, Mujib's Awami League secured a majority of the seats in the National Assembly, and Mujib demanded independence for East Pakistan.
- **Independence:** Troops from West Pakistan were sent to regain control of the eastern province but were defeated with the help of India. East Pakistan, renamed Bangladesh, was proclaimed an independent republic in 1971, and in January 1972 Mujib, recently released from prison, became

the first prime minister installed under the country's new parliamentary government.

58TH NATIONAL MARITIME DAY

This year's theme was "Sustainable fishing beyond Covid-19".

About:

- Ministry of Ports, Shipping and Waterways commemorated 58th National Maritime Day on April 5, 2021, with the theme of celebration being "Sustainable fishing beyond Covid-19".
- The importance of Maritime India Vision- 2030 was emphasized at the event.

Maritime India Vision-2030:

- What is it?** A 10-year blueprint with the aim of overhauling the Indian maritime sector.
- It envisages 3 lakh crore investments in port projects, generating employment for 20 lakh people and unlock Rs. 20000 Cr annual revenue potential for major ports.
- MIV 2030 identifies over 150 initiatives across 10 themes covering all the facets of the Indian maritime sector.
- Themes-**
 - Developing best in-class port infrastructure.
 - Drive E2E Logistics Efficiency and Cost Competitiveness
 - Enhance Logistics Efficiency through Technology and Innovation
 - Strengthen Policy and Institutional Framework to Support all Stakeholders
 - Enhance Global Share in Ship Building, Repair and Recycling
 - Enhance Cargo and Passenger Movement through Inland Waterways
 - Promote Ocean, Coastal and River Cruise Sector
 - Enhance India's Global stature and Maritime Co-operation
 - Lead the World in Safe, Sustainable & Green Maritime Sector
 - Become Top Seafaring Nation with World Class Education, Research & Training
- Sustainable development-** The Vision plans development of green sustainable ports with an aim to increase the share of renewable energy to over 60% by 2030 from current levels (which are less than 10%).
 - It promotes "Waste to Wealth" through sustainable dredging and domestic ship recycling.
- It aims to reach Zero Accident Ports by 2022.
- Make in India, Make for the World-** The policy envisions becoming a leading shipbuilding country through 15 times increase in gross tonnage of ships built in India.

- Maritime Development Fund-** To provide easy access to working capital and long-term finance needs across marine sectors.
- Cruise Tourism-** The Vision proposes to develop existing cruise terminals to world class level as well as develop six new cruise terminals, develop thematic cruise tourism (pilgrim, heritage, Ayurveda and wellness, cultural and scenic tours) as well as domestic and International ferry circuits across India, Sri-lanka, Thailand and Myanmar.

Significance:

- Large volume of trade-** The country's maritime sector handles 95% of the country's trade volume and 65% of the trade value.
- Inland Water Transport-** India has increased the modal share of cargo from 0.5% to 2% and has witnessed 19% year-on-year growth in cargo volumes over the last 5 years, with over 5,000 km of navigable inland waterways under development.
- Shipping-** Globally, India ranks 2nd in ship recycling and 21st in ship building. India is ranked amongst the top 5 countries supplying trained manpower, with 17% growth in seafarers in the last 3 years.
- Regional connectivity-** The Vision will help in enhancing connectivity with Bangladesh, Myanmar, Nepal, Bhutan etc.
- The Vision aims to propel India in the forefront of the maritime trade worldwide.

ALH (ADVANCED LIGHT HELICOPTER): DHURV MK III

The Indian Navy (IN) commissioned its first naval air squadron equipped with the indigenously designed and built Dhruv Mk III Advanced Light Helicopter (ALH).

About:

- A squadron in air force, army aviation, or naval aviation is a unit comprising a number of military aircraft and their aircrews, usually of the same type.
- Indian Naval Air Squadron (INAS) 323:** It will for now operate three state-of-the-art ALH Mk III helicopters currently Navy possess.
 - Navy had ordered 16 such Mk-III helicopters in 2017 but has currently received only 3.

ALH (Advanced Light Helicopter) Dhruv Mk III aircraft:

- It is a multi-role chopper with the Shakti engine manufactured by Hindustan Aeronautics Limited (HAL).
- It has an all-glass cockpit and will be used for search and rescue, special operations and coastal surveillance.
- The aircraft, a step up from Mk 1, will be able to mitigate low

visibility during search and rescue operations even at night.

- It has a 0.7 mm gun, which will give a huge capability from a LIMO (low intensity maritime operations) standpoint.
- It has been customised based on the requirements of the Navy and the coast guard.
 - ♦ It has Integrated Architecture Display System (IADS), more powerful "Shakti" (Safran Ardiden 1H1) engines, and a host of new systems.
 - ♦ **Advanced Sensors:** It is fitted with an array of advanced sensors and thus will be able to mitigate low visibility during search and rescue operations even at night.
 - ♦ **Latest-generation avionics:** It has latest-generation avionics and role equipment and is thus primarily meant for use in a shore-based role.
 - ♦ **Nose-mounted surveillance:** The aircraft has also a nose-mounted surveillance radar with 270-degree coverage that can detect, classify and track multiple marine targets.
 - ♦ **Automatic flight control system** is hugely superior to the previous one.

ADVANCED LIGHT HELICOPTER (ALH- DHRUV)

- It is a twin engine, multi-mission new generation helicopter in the 5.5 ton weight class.
- Dhruv is "type –Certified" for Military operations by the Centre for Military Airworthiness Certification (CEMILAC) and civil operations by the Directorate General of Civil Aviation (DGCA).
- The major variants of Dhruv are classified as Dhruv Mk-I, Mk-II, Mk-III & Mk-IV

EXERCISE VARUNA - 2021

The 19th edition of the Indian and French Navy bilateral exercise 'VARUNA-2021' was conducted in the Arabian Sea recently

About:

- India and France have been holding the exercise since 1993; it was given name Varuna in 2001.
- This is the first time that the UAE also participated in the Varuna maritime exercise.
- Indian Navy warships, French flagship Charles de Gaulle aircraft carrier and United Arab Emirates (UAE) Navy – jointly tested combat skills and war game in the Persian Gulf area.
- The Indian Navy had deployed

- ♦ Guided missile stealth destroyer Kolkata,
- ♦ Guided missile frigates Tarkash and Talwar,
- ♦ Fleet support ship Deepak,
- ♦ A Kalvari class submarine and
- ♦ A fleet of P-8I long range maritime patrol aircraft
- The naval drill witnessed high tempo-naval operations at sea which included
 - ♦ advanced air defence and anti-submarine exercises,
 - ♦ intense fixed and rotary wing flying operations,
 - ♦ tactical manoeuvres,
 - ♦ surface and anti-air weapon firings,
 - ♦ underway replenishment and other maritime security operations.

Significance:

- VARUNA exercise highlights growing bonhomie and showcases increased levels of synergy, coordination and inter-operability between the two friendly navies.
- It underscores the shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific and a rules-based international order.

CLEMENCEAU 21

- Varuna exercise 2021 is also a part of the French carrier strike group's 'CLEMENCEAU 21' deployment, which the French Navy is conducting from February to June 2021 in the eastern Mediterranean, the Gulf and the Indian Ocean.
- It aims to contribute to the stabilization of these strategic zones and strengthening cooperation with the navies of partner countries, in particular India for the Indian Ocean component.
- As part of this deployment, the carrier strike group is also taking part in anti-ISIS operations.
- Indian Navy's guided missile frigate INS Tarkash (F50) will continue to exercise with the French Navy's Carrier Strike Group (CSG).

Exercise 'La Perouse':

- In April 2021, the Indian Navy also took part for the first time in the France-led naval exercise 'La Perouse' with the navies of the United States, Australia and Japan

Other Indo-French Joint Exercises:

- Desert Knight-21 and Garuda (Air exercise)
- Varuna (Naval exercise)
- Shakti (Army exercise)



POLITY & GOVERNANCE

CENTRAL VIGILANCE COMMISSION OFFICERS TO BE TRANSFERRED EVERY 3 YEARS

Recently, the Central Vigilance Commission (CVC) has restricted the officials in the vigilance units to three years at one place.

About:

- The Central Vigilance Commission (CVC) has modified the guidelines pertaining to the transfer and posting of officials in the vigilance units of government organizations.
- It has restricted their tenure to three years at one place which may be extended to three more years, but at a different place of posting.

Reasons cited for change in guidelines regarding transfer and posting:

- **Development of vested interest:** The Chief Vigilance Commissioner has said that undue long stay of an official in a vigilance department had the potential of developing vested interests.
- **Maintenance of essential discipline:** The commission has said that these steps have been taken in order to ensure transparency, objectivity and uniformity in approach.

How are personnel recruited in vigilance department?

- An organization such as police has different departments and vigilance is one of them.
- Personnel are posted in different departments in a rotational manner.
- The order has stated that personnel in Vigilance department can't stay for more than 3 years at one place.

Significances of the move:

- Continuous posting of personnel in a particular department leads to creation of bonhomie with its subjects.
- It leads to dereliction of duty and negligence due to personal relations.
- This leads to formation of vested interests within the organization.

Way Forward:

- The move will help the organization to ensure transparency, accountability and objectivity of the department.
- It will help to reduce corruption in various departments due to effective functioning of vigilance department.

STAR CAMPAIGNERS: ELIGIBILITY AND RELATED ISSUES

Recently, the Election Commission of India (ECI) delisted Ex-Telecom Minister A. Raja from the list of star campaigners.

About:

- The Election commission delisted A. Raja from the list of star election campaigner due to his remarks against Tamil Nadu Chief Minister during an election rally.

WHO IS A 'STAR CAMPAIGNER'?

- There is no law that defines the eligibility to be a star campaigner. Political parties contesting an election often give to provide a list of certain senior members from its party.
- Election commission has issued guidelines and the Model Code of Conduct regulating poll campaign by these star campaigners. A 'recognized' political party can nominate a maximum of 40 star campaigners.
- While an unrecognized political party can nominate a maximum of 20 star campaigners.

Need to declare 'Star Campaigner'

- The Election Commission has put an upper limit on expenditure incurred by individual candidates during campaign. However, expenditure incurred on electioneering by the star campaigner is not added to a candidate's poll expenditure. The Representation of People's Act, 1951 states that such expenditures are to be borne by respective political party.

Certain conditions to be fulfilled by star campaigners

- A star campaigner must not share stage with a candidate otherwise whole expense except travel expenses would be borne by the candidate.
- This condition applies even if the star campaigner seeks vote for the candidate taking his or her name.
- In case of more than one candidate sharing the stage with the star campaigner, the expenditure incurred on the rally will be shared equally by the contestants.
- **Exception in case of Prime Minister:** If star campaigner is Prime Minister or a former prime minister the expenditure incurred on security will be borne by the government.
- However, if another campaigner travels with Prime Minister or Former Prime Minister, 50% of the total expenditure is borne by the candidate.

Consequences of delisting a star campaigner:

- After delisting if a star campaigner campaign for a party, the election expenditure incurred in travelling and rally would be borne by the candidate.

ELECTION EXPENDITURES FOR CANDIDATES

- **Expenditure limits in general election:** For general election, It has been limited at Rs. 70 lakhs for bigger states and Rs 54 lakh in smaller states for each constituency.
- The bigger states include Maharashtra, Madhya Pradesh, Uttar Pradesh, West Bengal and Karnataka etc, and the smaller states include Goa and other hilly and north eastern states.
- **Expenditure Limit for state elections:** In state election, for each legislative assembly constituency has been set at 25 lakhs while for smaller states (Hilly and North Eastern States) it has been set at 20 lakhs only.

Way Forward:

- Censoring a candidate for a campaigning till a particular period for violation of Model Code of Conduct and immoral behavior in public is good step towards fixing accountability in public life.
- It will further check the abuse of money and muscle power and unparliamentarily languages at public platforms.
- It is a step towards healthier democracy which is the need of the hour.

PERSON ACQUITTED DUE TO BENEFIT OF DOUBT NOT ELIGIBLE FOR PUBLIC EMPLOYMENT

Supreme Court held that acquittal of a candidate for heinous crime does not qualify him for public service under certain circumstances.

About:

- The Supreme Court has held that acquittal based on a benefit of doubt in respect of a heinous or serious nature of crime cannot make the candidate eligible for public employment.

Background of the case:

- Previously, a candidate named Love Kush Meena cleared the recruitment of constable in Rajasthan Police Service but was not appointed in view of being tried in a criminal case.
- Although, he was acquitted, the charges against him were not of a trivial nature but were serious offences.
- Further, the candidate was not acquitted by the Court honorably.

- Thus, the state government did not allow the recruitment of the candidate.

- **Supreme Court's Judgement: State of Rajasthan Vs Love Kush Meena:** The Supreme Court in its verdict stated its own judgment in Avtar Singh vs. Union of India case and opined that in respect of a heinous or serious nature of crime the acquittal is based on a benefit of reasonable doubt that cannot make the candidate eligible.

AVTAR SINGH Vs UNION OF INDIA

What are the offences that make a person ineligible for public service even after acquittal?

- The Supreme Court summarized the principles to be followed by Employers while dealing with issues related to suppression of information or submitting false information in the verification form by employees/candidates in Avtar Singh vs. Union of India case.
- It has laid certain guidelines pertaining to ineligibility of a candidate while facing criminal cases against him.
- It stated that if the person has been acquitted and acquittal involves moral turpitude or offence of heinous/serious nature and there are certain circumstances such as:
 - ♦ Acquittal on technical ground
 - ♦ It is not a case of clean acquittal
 - ♦ Benefit of reasonable doubt has been given to the convict.
- In these cases the employer after considering all relevant facts available as to antecedents may take appropriate decision as to the continuance of the employee.

Significance of the verdict by the Supreme Court:

- **Maintained dignity of the public office:** Allowing candidates who have been booked under serious criminal offences or acquitted merely because of benefit of doubt to hold a public service office will vilify the dignity of the office.
- Allowing criminal elements in public office will further loosen the trust of the public in general.

Arguments against the Verdict by the Supreme Court:

- **Vilifying acquittal procedure:** If the person is acquitted by a court of law, he/she must not have committed crime as the court has ruled out the case in his/her favour.
- After acquittal, a person has right to be treated in a fair manner and is entitled to get all benefits of being a common citizen.
- A person who has been acquitted by a court of law must have 'The Right to be forgotten' as he didn't commit the crime for which he faced the trial.

Way Forward:

- In Avtar Singh vs. Union of India the court had given the right to the authorities to verify the competence.
- Hence, the court has set up a well thought mechanism to filter out criminal elements from joining the public office.

PLEA IN SUPREME COURT AGAINST UNIFORM CIVIL LAW ON DIVORCE AND ALIMONY

Recently, a plea has been filed in the SC against its decision to examine a single law covering divorce, maintenance and alimony for all religions.

About:

- Last year, a plea was filed by advocate A.K. Upadhyay in Supreme Court to examine uniform civil laws on divorce and alimony for all religions.
- It had been argued by the petitioner that laws governing these subjects in certain religions discriminate and marginalize women.
- The Supreme court had agreed to re-examine the subjects stated by the petitioner.
- **Interference in religious matter:** The Recent plea has been filed against the Supreme Court's decision to re-examine the matter of divorce and alimony for all religions.
- As, the court will consider the Muslim Personal Laws during re-examination.
- The petitioner, Amina Sherwani has stated that Muslim personal laws are unique from other religions and attempt by the court to reexamine it will be interference in Muslim personal laws.
- **Violation of article 25 and Article 26 of the constitution:** The petitioner cited the previous petition and said that the previous one violates the provisions of article 25 and article 26 of the constitution.
- According to petitioner as deliberate attempt to interfere with the cultural and customary practices.

Provisions under Indian constitution: Right to Freedom of Religion:

- **Article 25:** It guarantees Freedom of conscience and free profession, practice and propagation of religion to citizens.
 - ♦ **Freedom of conscience** provides right to an individual to mould his relation with god in any way he desires.
 - ♦ **Right to Profess:** It guarantees an individual right to declare one's religious views and faith openly and freely.
 - ♦ **Right to Practice** provides for performance of rituals and worship in whatever manner one likes.

- ♦ **Right to Propagate** provides for transmission and dissemination of one's religious views.
- ♦ **Violation:** The petitioner has argued that matters of Talaq in Muslim personal law are covered under 'Right to Practice.'
- **Article 26:** It guarantees individuals with 'Freedom to manage religious affairs'.
 - ♦ It provides right to establish and maintain institution for religious purposes.
 - ♦ It provides right to manage its own affairs in matters of religion.
 - ♦ It provides right to acquire movable and immovable property and administer such property according to law.
 - ♦ **Violation:** Petitioner has argued that the decision to re-examine the matters of divorce, maintenance and alimony will violate second provision of this article.

How matters of divorce, maintenance and alimony are regulated in Islam?

- The Muslim personal law regulates the matters of divorce, maintenance and alimony in Islam in India.
- It has provided various options of divorce and related provisions such as:
 - ♦ **Talak-e-Tafweez:** It is the wife's right to divorce her husband is like that of the husband rights to divorce.
 - ♦ The provision must be incorporated in the nikahnama during marriage.
- **Khula:** It provides right to wife to get her marriage dissolved through Darul Kaza or Shariat Court.
- **Talak-e-Mubarrarah:** This provision provides for divorce by mutual consent.
- **Fask:** It provides right to wife to get an annulment of marriage through Darul Kaza.
- **Dissolution of Muslim Marriages Act of 1939:** The act clarifies the provisions of Muslim law relating to suits for dissolution of marriage by women married under Muslim law.
- It aims to remove doubts as to the effect of the renunciation of Islam by a married Muslim woman on her marriage tie.

MUSLIM PERSONAL LAW: TRIPLE TALAQ VERDICT

- The SC court verdict clearly stated that although "Triple Talaq" is a matter of part of the personal law of the Muslims, it's practice under ambit of article 25 and article 26 of the constitution is not valid.
- The court stated that the practice of triple talaq did not have the protection of Article 25 of the Constitution guaranteeing freedom of religion.
- It further interpreted that an irregular and heretical form of Talaq and not in accordance with Quranic principles.

How is current PIL different from 'Triple Talaq' case?

- **Triple Talaq** was heretical form of Talaq which had evolved over centuries and was different from other forms of Talaq mentioned in Quranic texts.
- However, the current PIL regarding Muslim Personal laws aims to redefine and provides a common rule for Talaq and related issues.
- But the provision of Talaq is clearly defined by different laws of Muslim Personal laws and well accepted.

Significance of the PIL:

- **Freedom to practice and manage:** It urges to provide freedom to practice as guaranteed by article 25 and freedom to manage its own religious affairs as guaranteed by article 26 of the constitution.
- Hence, PIL upholds the constitutional validity and urges court to not interfere in Muslim personal laws.
- **In-line with Quranic principles and Shariat laws:** Current provisions of talaq as provided by Talak-e-Tafweez, Khula, Talak-e-Mubarrak, Fask and Dissolution of Muslim Marriages Act of 1939 are in accordance with principles of Quranic verses and hence valid under Indian constitution.\

Limitations of the PIL:

- **Obstruction in implementation of Uniform Civil Code:** Article 44 of the constitution provides for implementation of Uniform Civil and personal laws for every section of society across castes and domains.
- Such provisions will reflect maturity of democratic values.
- The PIL is regressive in nature which acts as hurdle in such reforms.

Way Forward:

- Although the PIL justifies the provisions of Article 25 and Article 26 of the constitution, it fails to satisfy the provisions of Article 44.
- Hence, reform in a democracy is infringed upon by these thoughts and acts.
- Further, it will hamper India's march towards 'One Nation, One Law for all'.

CHANDLER GOOD GOVERNMENT INDEX

India has been ranked 49th in the Chandler Good Government Index (CGGI).

About:

- The Chandler Good Government Index (CGGI) is released by the Chandler institute of Governance which is a private nonprofit organization headquartered in Singapore.

- It has classified countries in accordance with certain parameters related to government capabilities and outcomes.
 - ♦ It supports government leaders and public officers worldwide in nation building and strengthening public institutional capacity through training, research and advisory work.
 - ♦ It also shares tools and frameworks for effective policymaking, and empowers nations to provide better public services for citizens
- India has been ranked at 49th position out of 104 countries. Finland has topped the list.
- The Index classifies 104 countries in terms of government capabilities and outcomes.
 - ♦ Each country is measured across over 50 open data points.
- **Parameters considered in preparing index:** The index is based on seven parameters in governance. These are:
 - ♦ Leadership & Foresight
 - ♦ Robust laws and policies;
 - ♦ Strong institutions;
 - ♦ Financial stewardship;
 - ♦ Attractive marketplace;
 - ♦ Global influence and reputation; and
 - ♦ Helping people rise.

Significance of the Index:

- **Making democracy stronger:** The index has brought positive criticism of the governance parameters and has also suggested benchmarks for such parameters.
- This leads to way towards promotion of good governance in a democratic country like India.
- **Focus on social and economic Development:** The index includes parameters such as health and education, country's budget surplus and debt etc. Thus apart from economic prosperity the index includes social prosperity of the nation.
- **People's perception and opinion:** The index also accounts for people's perception about public services along with their level of satisfaction with these services.
- Hence the index acts as a 'social audit' for democratic countries like India.

Way Forward:

- International indices like this helps in comparison between various countries of the world and thus acts as a positive feedback mechanism for economic and social development.

#FOSS4GOV INNOVATION CHALLENGE

#FOSS4GOV Innovation Challenge has been announced by Ministry of Electronics and Innovation technology.

About:

- The initiative has been announced to promote and accelerate adoption of Free and Open Source Software (FOSS) in Government.
- **Previous initiatives in open source software:** Prior to this initiative pertaining to open source software, the Government of India had issued a Policy on Adoption of Open Source Software in 2015.

WHAT IS A FREE AND OPEN SOURCE SOFTWARE (FOSS)?

- Free and open-source software (FOSS) is that software which allows users and programmers to edit, modify or reuse the software's source code.
- This feature provides developers the opportunity to improve program functionality by modifying it.
- **'Free' Meaning:** The term "free" indicates that the software does not have constraints on copyrights. It doesn't mean free of cost.
- **"Open Source" Meaning:** The term "open source" indicates the software is in its project form, enabling easy software development from expert developers collaborating worldwide without any need for reverse engineering.
- **Other names:** Free and open-source software may also be referred to as free/libre open-source software (FLOSS) or free/open-source software (F/OSS).
- Examples of FOSS include MySQL, Firefox, Linux, etc.
- Another category of software is 'Closed Source Software'.
 - ♦ The software which uses the proprietary and closely guarded code.
 - ♦ Only the original authors have the authority to access, copy, and alter that software.
 - ♦ In this case one does not purchase the software, but only pay to use it.

Salient features of the initiative:

- **Harnessing Innovation potential:** The challenge aims to harness the innovation potential of the software developers in the country. It also provides an opportunity to the start-ups to solve critical issues in Government Technologies (GovTech).
- **Solving Management and Planning Bottle necks:** The initiative has provided a platform for FOSS innovators who can develop and submit implementable open source product innovations in Customer Relationship Management and Enterprise Resource Planning.
- The challenge has suggested possible applications of to be

developed programmes for Govtech in Health, Education, and Agriculture etc.

- **Promoting GovTech 3.0:** The challenge aims to implement GovTech 3.0, which is about building secure and inclusive Open Digital Ecosystems (ODEs).
- **Privileges to participants:** The participants of the challenge will be entitled privileges such as incubation support, prize money, mentorship by domain experts, institutional support from eminent organizations for incubation of ideas and listing of solutions on Government e Marketplace (GeM).

Significance of such challenges in governance:

- **Strengthening e-governance:** Owing to rapid digitization due to telecom revolution and rapid acceptance of 4G technology in India, there is a need to adopt such initiatives to give a push to e-governance.
- **Seeding innovation in management and planning:** Initiatives like FOSS aims to bring innovative minds together to work on management and resource planning in various sectors of economy as well as government.
- **Providing platforms to ignited minds:** The challenge provides platform to young and innovative minds to contribute in open source software developments for governance.

Way Forward:

- It will also enable India to realize its "Digital India" mission in a better way by implementation of e-governance initiatives across the sectors and regions and thus narrowing digital divide.

GoVTECH 3.0

- **Nodal Ministry:** Ministry of Electronics and Information Technology (MeITy).
- GovTech 3.0 focusses on implementation of National Open Digital Ecosystem (NODE).
- **Objective:** It aims to promote "Open and secure delivery platforms, anchored by transparent governance mechanisms, which enable technology collaboration among citizens, businesses and governments to transform societal outcomes.
- It envisages the need to optimize service delivery, integrate data across departments and ministries, create inter-operable and modular platforms and include the private sector by allowing them to build solutions on top of Government architecture.

NATIONAL COMMISSIONS ON MINORITIES

Recently, Delhi High Court has directed the Centre to fill up the vacant posts in National Commission for Minorities (NCM) by 31st July 2021.

About:

- While responding to a 'Public Interest litigation' (PIL), Delhi High Court had asked the Centre to explain the reasons behind vacancies in National Commission for Minorities (NCM).
- Six out of seven posts at the National Commission for Minorities (NCM) are vacant and are still to be filled.
- After response period was over, the court directed to fill the vacancies in the National Commission for Minorities by 31st July 2021.

NATIONAL COMMISSION FOR MINORITIES (NCM)

- In 1978, setting up of the Minorities Commission (MC) was envisaged in the Ministry of Home Affairs Resolution.
- In 1984, the MC was detached from the Ministry of Home Affairs and placed under the newly created Ministry of Welfare, which excluded linguistic minorities from the Commission's jurisdiction in 1988.
- In 1992, with the enactment of the NCM Act, 1992, the MC became a statutory body and was renamed as the NCM.
- The first National Commission for Minorities with a statutory status was formed in 1993.
- Initially five religions viz. Muslims, Christians, Sikhs, Buddhists and Zoroastrians (Parsis) were notified as minorities by the commission in 1993.
- After that, Jain was notified as a minority community in 2014.

Composition of the commission

- The commission consists of seven members which includes a Chairperson and a Vice-Chairperson along with five other members.
- All members of the commission must belong to minority communities enlisted as minorities, and from amongst persons of eminence, ability and integrity.
- Every member of the commission holds office for a period of three years.

Who does notify minority community in India?

- Central government notifies status of minority to a religion in India.
- Constitution has not defined the term minority neither laid down procedures to notify a community or religion as a minority community.

- However, article 29 recognizes religious and linguistic minorities while article 30 provides right to establish and administer educational institutions maintained by them.

Functions of the commission:

- It evaluates the progress of the development of minorities across the country.
- It safeguards the interests of minorities from time to time.
- It looks into any complain which is brought by anyone to it and takes suo-motto cognizance of any incident or act committed against minorities.
- Ensures that the Prime Minister's 15-Point Programme for the Welfare of Minorities is implemented and the programmes for minority communities are actually functioning.

Way Forward:

- Vacancy in important bodies such as National Commission for Minorities dilutes the purpose of the commission.
- Hence, High Court's order to fill the vacancy is in the interest of maintaining good governance.

SWAMITVA SCHEME

Prime Minister has recently launched the distribution of e-property cards under SWAMITVA scheme on National Panchayati Raj Day.

About:

- The Prime Minister launched the distribution of e-property cards under the SWAMITVA scheme on National Panchayati Raj Day through video conferencing.
- 4.09 lakh property owners were given their e-property cards this occasion which also marked the rolling out of the SWAMITVA scheme for implementation across the country.
 - ♦ The Scheme will cover around 6.62 Lakh villages of the entire country during 2021-2025.
 - ♦ The scheme is for the unsurveyed abadi areas. It is also applicable for the surveyed areas where the states are willing to replace the earlier record like in the states of Gujarat, Tamil Nadu and Odisha.
- The states have been requested to sign the MoU with the Survey of India and change the state laws wherever needed.
- **SWAMITVA scheme:**
 - ♦ SWAMITVA Scheme is a Central Sector scheme launched on National Panchayat Day i.e. 24th April 2020 aimed at "providing 'record of rights' to village household owners possessing houses in inhabited rural areas in villages and issuance of property cards to the property owners.

- **Nodal Ministry:** The Ministry of Panchayati Raj (MoPR) is the Nodal Ministry for implementation of the scheme.
- In the States, the Revenue Department / Land Records Department is the Nodal Department which will implement the scheme with support of State Panchayati Raj Department.
- Survey of India shall work as the technology partner for implementation.
- **Objective of the scheme:** The scheme aims to provide an integrated property validation solution for rural India.
- It envisages demarcating 'rural abadi areas' by using Drone Surveying technology.
- The project aims for creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.
- It aims to support in preparation of better-quality Gram Panchayat Development Plan (GPDP) by making use of GIS maps.
- **Generation of Property Cards:** The multi-stage process of generating a property card begins with the signing of a Memorandum of Understanding (MoU) between Survey of India (Sol) and respective state governments.
 - ♦ Once the MOU is done, a Continuously Operating Reference System (CORS) is established which provides a virtual base station that allows access to long-range high-accuracy Network RTK (Real-Time Kinematic) corrections.
- ♦ To what extent the data will be monetised or should be monetised.
- ♦ The private sector companies that are offering the drones for surveillance and data collection, will the data be shared with these companies too or not.
- **Data Protection:** India, still as a country is far away from having a proper fool-proof data protection laws and without such law in place, collection of data and its misuse will always remain a challenge for such an ambitious scheme.
- **Bringing Maximum Villages under Surveillance within Projected Time:** Issues with bringing the villages under surveillance is a challenge as the pace of bringing villages under coverage cannot be pushed to increase after a certain point.

Way Forward:

- SWAMITVA scheme is a path breaking scheme which has the ability to tame multiple discrepancies simultaneously.
- It will on the one hand sort out issues pertaining to land acquisition and title rights while on the other hand will sort problems in judiciary due to pendency of large number of cases.

PANCHAYATI RAJ IN INDIA

- The first National Panchayati Raj Day was celebrated in 2010. Since then, the National Panchayati Raj Day is celebrated on 24th April every year in India
- The Ministry of Panchayati Raj has been awarding the best performing Panchayats/States/UTs across the country in recognition of their good work.
- Awards are given under various categories namely,
 - ♦ Deen Dayal Upadhyay Panchayat Sashaktikaran Puraskar,
 - ♦ Nanaji Deshmukh Rashtriya Gaurav Gram Sabha Puraskar,
 - ♦ Child-friendly Gram Panchayat Award,
 - ♦ Gram Panchayat Development Plan Award and
 - ♦ e-Panchayat Puraskar (given to States/UTs only).
 - ♦ For the first time, the Prime Minister will transfer the award money (as Grants-in-Aid) directly to the bank account of the Panchayats concerned in real time.
- After the Constitution came into force, Article 40 made a mention of panchayats and Article 246 empowered the state legislature to legislate with respect to any subject relating to local self-government.
- Panchayati Raj Institution (PRI) was constitutionalized through the 73rd Constitutional Amendment Act, 1992 to build democracy at the grass roots level and was entrusted with the task of rural development in the country.
- PRI is a system of rural local self-government in India.

Significance of the Scheme:

- **Monetization of the Property:** The scheme would enable them to use their property as a financial asset for taking loans and other financial benefits from Bank.
- **Improved Centre-State Collaboration:** The model has a structure where the centre takes the responsibility of being the nodal authority and then functions after consultation with the revenue departments of the state governments taking the help of the state panchayati raj depts.
- **Increasing revenue to state government:** By determination of property tax with the help of GPS directly in States will add to the State exchequer.
- **Efficient planning in rural areas:** Mapping of rural areas will provide enough material to rural planners to plan infrastructure development in those regions.
- Further, land entitlements to original owners will help in rapid acquisition of land for public infrastructure development.
- **Reduces dispute related to land titles:** Currently, a large number pending cases in different level of courts across country is related to land titles.
- Ownership certificates to owners of land will reduce such cases and thus burden on courts will automatically reduce.

Challenges in the Scheme Implementation:

- **Access to Data:** To what extent the data collected will be shared with various layers of government and state departments.



SOCIAL ISSUES

AAHAAR KRANTI MISSION

The Aahaar Kranti Mission seeks to spread awareness about nutrition.

About:

- Union Minister for Science and Technology, Earth Sciences and Health and Family Welfare, Dr Harsh Vardhan launched the “Aahaar Kranti” Mission on first day of Ma Annapurna’s Chaitra Navratri.

Aahaar Kranti:

- **What is it for?** The Mission aims to spread awareness about nutrition and make accessible the locally available nutritious food, fruits, and vegetables in India for all.
- **Motto:** ‘Uttam Aahaar- Uttam Vichar’ or ‘Good Diet-Good Cognition’.
- **Who developed it?** Vijnana Bharati (Vibha), ‘Global Indian Scientists and Technocrats’ Forum (GIST) initiated it; Vigyan Prasar, and Pravasi Bharatiya Academic and Scientific Sampark (PRABHASS) are collaborators; other organizations are scheduled to join the Mission eventually.

Significance:

- **Spread nutritional awareness-** Despite producing double the number of calories it consumes, many in India are malnourished. The underlying cause for this is lack of nutritional awareness. Aahaar Kranti Mission seeks to address this.
- **Hunger and diseases-** The Mission seeks to correct the peculiar problem which India and the world faces- hunger and diseases in abundance.
- **Focus on traditional, local and balanced diets-** The Mission sensitizes the people to the values and richness of India’s traditional diet, to the healing powers of local fruits and vegetables, and promote nutritionally balanced diet sourced from local fruits and vegetables.
- **COVID-19-** A nutritious and balanced diet has gained even more importance in the wake of the ongoing pandemic.

Way Ahead:

- Every Indian citizen from every section of the society must be involved to ensure that the awareness of a healthy, balanced diet reaches out to all corner of the country.

MANAS MOBILE APP

Principal Scientific Advisor launched the MANAS App to promote mental well-being.

About:

- Principal Scientific Advisor K VijayRaghavan launched a mobile app MANAS to promote mental wellbeing across age groups.

MANAS App:

- **MANAS** stands for Mental Health and Normalcy Augmentation System.
- **What is it for?** MANAS is a comprehensive, scalable, and national digital wellbeing platform to augment the mental well-being of Indians. The initial version of the app focuses on promoting positive mental in the 15-35 age group.
- **What does it do?** Based on life skills and core psychological processes, MANAS integrates the health and wellness efforts of various ministries, scientifically validated indigenous tools with gamified interfaces developed and researched by various national bodies and research institutions.
- **Developers:** Office of the Principal Scientific Advisor to the Government of India, NIMHANS Bengaluru, AFMC (Armed Forces Medical College), Pune and C-DAC (Centre for Development of Advanced Computing) Bengaluru.
- MANAS was endorsed as a national program by the Prime Minister’s Science, Technology, and Innovation Advisory Council (PM-STIAC).

Significance:

- In 2017, 197.3 million Indians had mental disorders, including 45.7 million with depressive disorders and 44.9 million with anxiety disorders.
- The COVID-19 pandemic has worsened the mental health of many citizens, with reports of one in every three COVID-19 survivor having experienced mental health issues within six months of infection.

UNPFA REPORT - MY BODY IS MY OWN

The flagship State of World Population Report 2021 was released by UNFPA.

About:

- United Nations Population Fund (UNFPA) released the flagship State of World Population Report 2021 titled 'My Body is My Own'.

Highlights of the Report:

- The Report highlights why bodily autonomy is a universal right that must be upheld.
- Many of the shortfalls in bodily autonomy are serious and the COVID-19 pandemic has worsened some of them. A record number of women are at high risk of gender-based violence and harmful practices such as early marriage.
- Shadow pandemic**- The Report highlights that the rising violence against women during the COVID-19 pandemic has been deemed as "shadow pandemic".
- Complacency equals complicity and therefore discrimination must be challenged.
- 'Our Autonomy Our lives'**: The Report highlights that A woman's power to control her own body is linked to how much control she has in other spheres of her life.
 - 'Right to autonomy of our body' means the power and agency to make choices and without fear of violence or having someone else decide it for us. This also includes choice for consent, right to make decision towards pregnancy and freedom to visit a doctor when needed.
- 'Bodily integrity'** i.e right to live free from physical acts to which one does not consent to, is intertwined with the right to autonomy. E.g., Pregnancy resulting from a lack of contraceptive choices, unwanted sex in exchange for home and food, female genital mutilation and child marriage.
- Sexual and reproductive health and rights** have direct bearing on bodily autonomy and integrity. This results in multiple positive health outcomes, such as greater understanding of how to prevent HIV, access prenatal care and institutionalized delivery.

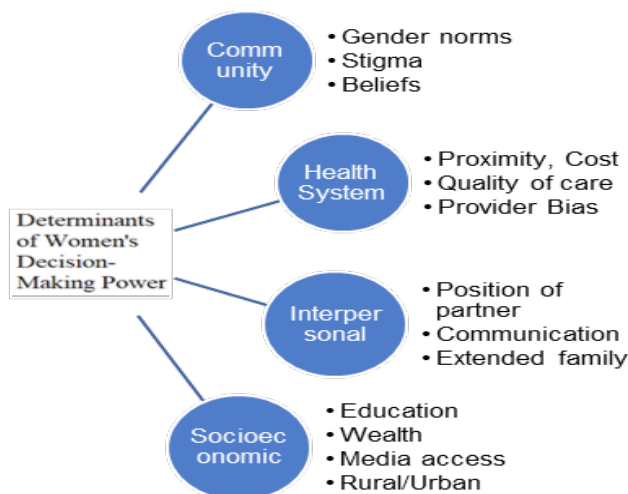
- 'Three dimensions of autonomy'**- The Report enquires into the power to make decisions about healthcare, contraception and sex, which are fundamental to a women's overall empowerment. More decision power was linked to higher levels of education.
- Denial of bodily autonomy and integrity takes many forms** such as forced and child marriages, slavery, honour killing, detrimental marital practices that subordinate women and undermine health. Often women do not know that they have a right to say 'No'.
- Humanitarian crises** aggravate violation of a woman's bodily autonomy, as done by ISIL in Syria Arab republic, Boko Haram in Nigeria and Al Shabaab in Somalia.
- Role of men**- Men must become allies and many more must commit to step away from patterns of privilege and dominance which cut bodily autonomy.
- The rights to bodily autonomy and integrity are formally recognized by international human rights laws and achieving bodily autonomy depends on gender equality and expanding choices and opportunities for women, girls and excluded groups.
- The report outlines solutions and mentions that real, sustained progress largely depends on uprooting gender inequality and all forms of discrimination and transforming all forms of social and economic structures that maintain them.

UNITED NATIONS POPULATION FUND (UNFPA)

- UNFPA is the United Nations sexual and reproductive health agency.
- The organization was created in 1969, the same year the United Nations General Assembly declared "parents have the exclusive right to determine freely and responsibly the number and spacing of their children."
- It works in more than 150 countries.

Status in India:

- Healthcare decision**- According to NFHS-4 (2015-2016), only about 12% of currently married women (15-49 years of age) independently make decisions about their own healthcare, while 63% decide in consultation with their spouse. For 23% of women, the spouse takes the decision for healthcare.
- Contraception use decision**- Only 8% of currently married women (15-49 years) take decisions on the use of contraception independently, while 83% decide jointly with their spouse.
- Information availability**- Only 47% women using contraceptives were informed about the side effects and 57% were informed about other contraceptives.



TRIBAL HEALTH COLLABORATIVE- 'ANAMAYA'

'Anamaya' is a multistakeholder collaboration to address tribal nutrition and health.

About:

- Ministry of Tribal Affairs and Ministry of Health and Family Welfare together launched the Tribal Health Collaborative 'Anamaya' to enhance tribal health and nutrition.

Tribal Health Collaborative 'Anamaya':

- What is it?** The Collaborative is a multistakeholder initiative that will converge efforts of various Government agencies and organisations to enhance the health and nutrition status of the tribal communities of India.
- Members:** Government, Bill and Melinda Gates Foundation and Piramal Foundation.
- Aim:** To build a sustainable, high-performing health ecosystem to address the key health challenges faced by the tribal population of India.
- Operations:** The Collaborative will begin its operations with 50 tribal, Aspirational Districts (with more than 20% ST population) across 6 high tribal population states. Over a 10-year period, the work will be extended to 177 tribal Districts as recognised by the Ministry of Tribal Affairs.

Significance:

- Healthcare access-** Tribal areas are deprived of healthcare access and suffer from malnutrition. The initiative will help address the issue.
- Complement other initiatives-** The initiative will augment efforts to improve tribal health and nutrition, through Tribal Health Action Plan. Tribal Health Cell in the Ministry of Tribal Affairs will help with inter-ministerial co-ordination.
- Marginalization-** The Constitution of India recognizes the special status of tribal people- the Scheduled Tribes- and provides safeguards to protect their rights and culture but they have remained marginalized geographically, socio-economically and politically. The initiative bridges these gaps and has a wider and long-term action plan.
- Tribal-specific healthcare intervention-** Tribal healthcare has predominantly been subsumed under rural healthcare and the different needs of the tribal population were neither adequately addressed nor any systematic data available for a long time on their health status.
- The initiative will help achieve the goals of Universal Healthcare (UHC).

SANKALP SE SIDDHI

Ministry of Tribal Affairs and TRIFED recently launched "Sankalp Se Siddhi - Village & Digital Connection Drive".

About:

- Its main aim is to activate Van Dhan Vikas Kendras in these villages. It has been launched to supervise the implementation of various activities and programmes for tribal livelihood.
- This drive will last for 100 days involving 150 teams over 10 villages in each region.
- The teams will also shortlist potential Van Dhan Vikas Kendra for clustering under the Ministry of Tribal Affairs' other schemes like TRIFOOD and SFURTI.
- The teams will also identify tribal artisans, etc. and empanel them as suppliers to allow greater market access to them through Tribes India network - both physical and through websites and e-commerce partners.
- A target of sales worth Rs 200 Crore over the coming 12 months, starting April 1st has been set for this drive.

TRIFED

- It was established in August 1987 under the Multi-State Cooperative Societies Act, 1984 as a National level Cooperative body.
- It is mandated to bring about socio-economic development of tribal of the country by institutionalizing the trade of Minor Forest Produce (MFP) & Surplus Agricultural Produce (SAP) collected/ cultivated by them.
 - Empowering them with knowledge and tools to better their operations in a systematic, scientific manner.
- It also assists them in exploring and creating opportunities to market the developed products in national and international markets on a sustainable basis.
- TRIBES India** is the brand under which the sourced handcrafted products from the tribal people are sold

Significance:

- Tribals are a vulnerable section of Indian citizenry. The constitution has provisions to ensure their welfare and protection. Laws have also been made for tribal welfare like Forest Rights Act '06, PESA Act'96, etc. The Ministry of Tribal affairs runs various programs and schemes for this purpose.
- Minor Forest Produce (MFP) is very important for tribals as it constitutes a major source of food, medicine, shelter, clothing and even livelihood for them. About 20-40% of tribal incomes come from selling MFP or their processed products.
- Such initiatives will help the tribals earn stable incomes to support themselves and afford good and nutritious food, health, education and other necessities.



ENVIRONMENT

AFRICAN ELEPHANTS RECLASSIFIED UNDER IUCN

The IUCN Red List has updated the IUCN status of the African savanna elephant and African forest elephant.

About:

- Following the first separate assessment of the two species, IUCN Red List has announced that
 - ♦ The African savanna elephant is now classified as Endangered
 - ♦ The African forest elephant is now classified as Critically Endangered.
- **Vulnerable Earlier** - Prior to this, the two species had been treated as a single species and had been listed as Vulnerable.
- **The IUCN Red List now** includes 134,425 species of which 37,480 are threatened with extinction.

Classification of African Elephants as Separate Species:

- **New genetic evidences** have emerged which led to their treating as different species.
 - ♦ Savanna elephants are larger than forest elephants, and their tusks curve outwards.
 - ♦ Forest elephants are darker and their tusks are straighter and point downward.
 - ♦ There are also differences in the size and shape of the skull and skeleton between the two subspecies.
- **No overlap in their habitat**
 - ♦ **Forest elephants** occur in the tropical forests of Central Africa and in a range of habitats in West Africa.
 - ♦ **Savanna elephants** prefer open country and are found in a variety of habitats in sub-Saharan Africa including grasslands and deserts

Reasons for IUCN status changes:

- IUCN has stated that African elephants living in forests and savannas are increasingly threatened with extinction.
- **Population Decline:** The IUCN status has been upgraded due to population declines of the two species caused primarily by poaching and habitat loss.
 - ♦ The population of African forest elephants plummeted by 86 per cent in the last 31 years.
 - ♦ The population of savanna elephants dropped by 60 per cent in the last 50 years.

Threats leading to population decline

- ♦ **An increase in poaching** for ivory since 2008 has seen sharp declines for both species.
- ♦ **Encroachment and human animal conflict** - The ongoing conversion of their habitats, primarily to agricultural and other land uses.

Positives:

- **Successful conservation programmes** have led to stabilisation of population in few areas. Those measures are
 - ♦ **Anti-poaching measures on the ground**
 - ♦ **More supportive legislation and land use planning** which seeks to foster human-wildlife coexistence
 - ♦ **Combating the illegal ivory trade** by lowering the demand in ivory destination markets such as Europe or Asia
- **Forest elephants had stabilised** in well-managed conservation areas in Gabon and the Republic of the Congo
- **The numbers of Savanna elephants had also been stable** or growing for decades, especially in the Kavango-Zambezi Transfrontier Conservation Area.

Way Forward:

- **The upgraded IUCN status must be taken as a note of how serious** these two species are and inclusive conservation measures need to be stepped up.
- There is a need to urgently put an end to poaching and ensure that sufficient suitable habitat for both forest and savanna elephants is conserved.
- **There is need to have protected areas and strong laws** throughout the range of African elephants.

#AFRICAN ELEPHANTS

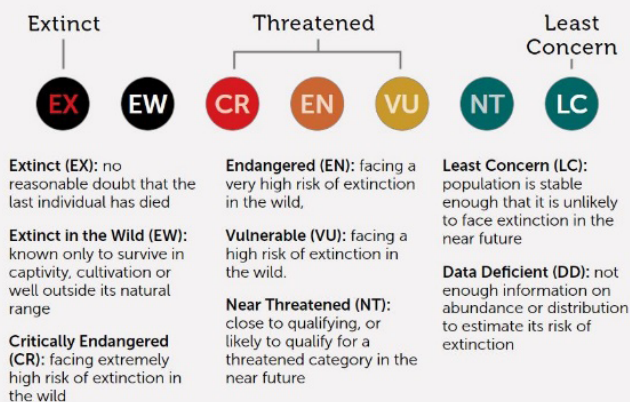
- African elephants are the largest land animals on Earth.
- They are slightly larger than their Asian cousins and can be identified by their larger ears that look somewhat like the continent of Africa.
 - ♦ Their large ears allow them to radiate excess heat.
 - ♦ Asian elephants have smaller, rounded ears.
- They're also protected under international environmental agreements, CITES and the Convention on the Conservation of Migratory Species.
- African elephants are keystone species.
- They are known as "ecosystem engineers and shape their habitat in many ways.

- ♦ In central African forests, up to 30 percent of tree species may require elephants to help with dispersal and germination.
- ♦ **Their dung is full of seeds**, helping plants spread across the environment—and it makes pretty good habitat for dung beetles too.
- ♦ During the dry season, they use their tusks to dig up dry riverbeds and create watering holes many animals can drink from.
- ♦ In the forest, their feasting on trees and shrubs creates pathways for smaller animals to move through.
- ♦ In the savanna, they uproot trees and eat saplings, which helps keep the landscape open for zebras and other plains animals to thrive.

THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE'S (IUCN) RED LIST OF THREATENED SPECIES

- **Established in 1964**, it has evolved to become the world's most comprehensive information source on the global conservation status of **animal, fungi and plant species**.
- **It provides information about** range, population size, habitat and ecology, use and/or trade, threats, and conservation actions that will help inform necessary conservation decisions.
- **International Union for Conservation of Nature (IUCN)** was founded in 1948 as a non-profit organization to help the world find pragmatic solutions to our most pressing environment and development challenges
 - ♦ It brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice.

THE RED LIST CATEGORIES



EARTH HOUR

Earth Hour was observed on 27th March 2021

About:

- **It is the annual tradition** of shutting down electric lights for 1 hour
- It is held at 8:30 pm on the last Saturday in March every year.
- It was started by the World-Wide Fund for Nature (WWF).
- **The first Earth Hour** was held in Sydney in 2007.
 - ♦ Since then, it involves millions of people in over 180 countries and territories turning off their lights to express respect for our world
- **Aim**
 - ♦ To encourage individuals, communities, and businesses to turn off all non-essential lights for an entire hour symbolising their commitment to the planet Earth.
 - ♦ To raise awareness and inspire people to take concrete action on environmental issues and for them to Speak Up for Nature.
- This year, people from across the world lit candles and celebrated unity.
 - ♦ This was the first-ever "Virtual Spotlight" Earth Hour.
- **India observed its first Earth Hour in 2009**, with 5 million people across 58 cities joining the movement.

WORLD-WIDE FUND FOR NATURE (WWF)

- Established in 1961, it is an international non-profit conservation organisation.
- It is one of the world's largest independent organizations, with over 5 million supporters and a global network active in more than 100 countries.
- It works with communities, businesses and governments to help people and nature thrive
- **WWF's mission is to**
 - ♦ Stop the degradation of the planet's natural environment
 - ♦ Build a future in which humans live in harmony with nature,
 - ♦ Conserve the world's biological diversity,
 - ♦ Ensure that the use of renewable natural resources is sustainable,
 - ♦ Promote the reduction of pollution and wasteful consumption.
- **Logo** - The Giant Panda.
- **Headquarters** - Gland, Switzerland.

PILIBHIT TIGER RESERVE

A carcass of a five-year-old tigress was found in the Pilibhit Tiger Reserve (Uttar Pradesh).

About:

- A post-mortem examination didn't reveal any unnatural injuries and ruled out the possibility of poaching.
- It is suspected that the tigress died during a fight with another tiger, or due to some disease.

Pilibhit Tiger Reserve:

- **Location –**
 - ♦ It is located in Pilibhit district, Lakhimpur Kheri District and Bahraich District of Uttar Pradesh.
 - ♦ It is situated in the Terai region of northern India.
 - ♦ While the northern area of reserve touches the Indo-Nepal border, the southern edge is connected to Khakhra and Sharda river.
- **Project Tiger –**
 - ♦ It was declared a tiger reserve in 2008
 - ♦ **It won TX2 award** for doubling the tiger population in just four years from 2014, when it had 25 tigers which went up to 65 in 2018.
- **Diversified ecosystems –**
 - ♦ **It is a mosaic of high sal and teak forests, plantation, grasslands** and swamp maintained by periodic flooding from rivers.
 - ♦ **The major forest types** found here include dry deciduous forests, open woodlands, grasslands and riverines covered with thorny woodlands and tall grass.
- **High Biodiversity and Conservation Value-**
 - ♦ **It represents the only tiger population** with the ecological and behavioral adaptations of the tiger unique to the Terai region.
 - ♦ **It is home to a habitat** for over 127 animals, 326 bird species and 2,100 flowering plants.
 - **Wild Animals** - The jungles are home to a myriad of wild animals including the endangered tiger, swamp deer, wild boar, Bengal florican, hog deer, leopard, cheetal, blue bull etc.
 - **Several endangered species** like pangolin, Bengal Florican, vulture, sloth deer etc are found here.
 - **The bird life** is very rich and diverse and hundreds of species of birds are found here including species like jungle babbler, fish owl, snack bird, hornbill, pea fowl, serpent eagle, black neck stork etc.
 - **It also boasts of many reptiles** like snakes and pythons in the surroundings.

- **The Chuka Interpretation Zones** in this reserve with nature interpretation center, cottages & edge of huge water body is unique & very popular with visitors.

PROJECT TIGER (1973)

- **It is one of the major projects launched in 1973** for the protection and conservation of tigers in India.
- **It aims to aid and facilitate the breeding of tigers** within a safe environment and then transport these tigers further afield so that the world's population can be increased.
- It works under the administrative control of the National Tiger Conservation Authority (NTCA).
 - ♦ **NTCA is a statutory body** under the Ministry of Environment, Forests and Climate Change.
 - ♦ It is constituted under the Wildlife (Protection) Act, 1972.
- **It established the Tiger Protection Force** with the aim of seizing the poachers and stopping the illegal killings of tigers.

TERAI ARC LANDSCAPE (TARAI MEANING MOIST LAND)

- It is spread across the Indian states of Uttarakhand, Uttar Pradesh and Bihar, and the low-lying hills of Nepal.
- A strip of undulating former marshland, it stretches from the Yamuna River in the west to the Brahmaputra River in the east.
- At its northern edge are numerous springs forming several streams, including the important Ghaghara River, and are responsible for its marshy character.
- Interspersed with the Tarai is the Bhabar,
 - ♦ **Bhabar** - It is a region of coarse gravel and shingle deposits supporting sal forests.
- The landscape boasts of some of India's most well-known Tiger Reserves and Protected Areas such as
 - ♦ Corbett Tiger Reserve,
 - ♦ Rajaji National Park,
 - ♦ Dudhwa Tiger Reserve,
 - ♦ Valmiki Tiger Reserve etc.
- The eastern part of the Tarai is known in West Bengal state and in Bangladesh as the **Duars**.

TX2 AWARD

- It is the global award set up in 2010 where 13 tiger ranging participant countries had **resolved to double the number of tigers across their range by 2022**.
- It was set up by international organizations working for tiger conservation like WWF, UNDP, IUCN, Global Tiger Fund (GTF), CATS and The Lion's Share.

RANTHAMBORE TIGER RESERVE

Six tigers have been missing at the Ranthambore Tiger Reserve for a year.

About:

- The tigers were last sighted in March-April 2020 and have not been located since then.
- Currently, there is no evidence to support any of the reasons for mysterious missing of tigers
 - ♦ It may be possible that they have died due to infighting or disease.
 - ♦ It is also possible the tigers have migrated and changed their territories.
 - ♦ It is also possible that they were poached and killed in revenge by villagers whose domesticated animals are often hunt down by tigers.
- A matter of concern is that this information did not come out in public for the past one year
 - ♦ It puts conservation efforts of tigers in Ranthambore in danger.
- The National Tiger Conservation Authority has constituted a committee to ascertain the disappearance of the tigers.

Ranthambore Tiger Reserve:

- It is one of the biggest and most renowned national parks in Northern India.
- **Location –**
 - ♦ The park is located in the Sawai Madhopur district of southeastern Rajasthan.
 - ♦ It is located at the junction of the Aravali and Vindhya hill ranges
- **The Reserve comprises of** shallow perennial lakes, steep hills, gentle slopes, plateaus, narrow valleys, etc. and as such a variety of plant communities or associations are found.
- **Flora –**
 - ♦ There is a plenty of water available to support a variety of flora and fauna and around 300 plant species are found.
 - ♦ **Dry deciduous type - Due to its proximity to the Thar**, the region receives very scanty rainfalls and so the vegetation in the park mainly comprises of the dry deciduous type.
 - ♦ **The most noticeable tree** in the Ranthambore National Park is the 'Dhok' (Anogeissus pendula).
 - It is dominant species and constitutes about 80% of the vegetation cover and found on hill slopes and valleys
 - ♦ **Other most prominent trees** in the park are the Banyan, Pipal, Babul, Gum, Khajur, Tendu etc.
 - ♦ **Among the fruit trees found** in the Ranthambore, the most prominent include the Mango, Jamun, Ber and Tamarind.
 - ♦ **Lotus and water lilies are the prime aquatic flowers** found in

the lakes of Ranthambore National Park and the edges of the lakes are draped with **Khus grass**.

Wildlife -

- ♦ According to tiger's census, there are about 55 tigers in the reserve.
- ♦ **Apart from the tiger**, other big cats of the Ranthambore reserve park are Leopard, Leopard cat, Desert cat, Caracal, Fishing cat and Jungle cat
- ♦ **This forest also provides food and shelter to large predators** like Sloth Bear, Jackal, Striped Hyena, Desert fox, Palm civet, crocodile, common mongoose, python and many others.
- ♦ **It also has in abundance**
 - Two species of antlers - Spotted deer (chital) and Sambhar deer
 - Two species of antelopes - Indian Gazelle (Chinkara) and the Bluebull (Nilgai)
- ♦ **Birds** - There are almost 300 species of resident and migrated birds found in the Ranthambore forest.
 - Few of them are Kingfisher, Painted Spurrow, Sarus Crane, large Cormorant, Bronzed winged Jacana, Sandpiper, Nightjar, Great horned owl, Painted Sandgrouse and many others.
- ♦ **History of Ranthambore Tiger Reserve**
 - ♦ Ranthambore National Park was established initially as Sawai Madhopur Game Sanctuary in 1955.
 - ♦ **Tiger reserve** - In 1973, it was declared as one of the Project Tiger reserves in India.
 - ♦ **National Park** - In 1980, Ranthambore was declared a national park, while the forests located beside it were named Sawai Man Singh Sanctuary & Keladevi Sanctuary.

TWO NEW SEAWEED SPECIES

Two new red algal seaweed species have been discovered along India's coastline

About:

- **These two new species of red algal seaweed** have been discovered by a group of marine biologists from Central University of Punjab, Bathinda.
- **The seaweeds are part of the genus Hypnea.**
 - ♦ **The genus Hypnea** consists of calcareous, erect, branched red seaweeds.
 - ♦ **They grow in isolated patches in the intertidal regions** of the coast, namely the area that is submerged during the high tide and exposed during low tides.
 - ♦ **There are 61 species** of which 10 were reported in India.
 - ♦ **With these two new species**, the total number of species now would be 63

- **The two new seaweeds are named as**
 - ♦ **Hypnea indica** (after India) and
 - ♦ **Hypnea bullata** (because of the blisterlike marks on its body – bullate)
- **Location**
 - ♦ **Both varieties**—Hypnea indica and Hypnea Bullata—were discovered in Kanyakumari, Tamil Nadu.
 - ♦ **Hypnea indica** was also discovered in Somnath Pathan and Sivrajpur in Gujarat.
 - ♦ **Hypnea bullata** was also discovered from Diu island of Daman and Diu.
- **Hypnea nidifica:** The study also reports one other species of Hypnea for the first time in Indian coasts, Hypnea nidifica.

Significance of these new finds:

- **Biomolecule Carrageenan** - Species of Hypnea contain the biomolecule carrageenan, which is widely used in the food industry.
- **Economic Value** - Hypnea variants of seaweeds can fetch good monetary value if commercial-scale cultivation is taken up along India's vast coastline of 7500km
 - ♦ There is a great potential for creating a **seaweed cultivation ecosystem**.
 - ♦ In it, farmers and the fishermen communities can be scientifically trained in seaweed cultivation.
 - ♦ Alongside, associated industries, too can support such efforts.

SEaweeds AND THEIR IMPORTANCE

- **Seaweeds are the primitive, marine non-flowering marine algae** without root, stem and leaves that play a major role in marine ecosystems.
- **Habitats for marine lifeforms** - The thousands of species of this organism that vary vastly in size, shape and colour, provide habitats for marine lifeforms and protect them from threats.
- **Kelp forests** –
 - ♦ Large seaweeds form dense underwater forests known as kelp forests, which act as underwater nurseries for fish, snails and sea urchins.
 - ♦ The herbivorous marine animals also feed on its thallus
- **Photosynthesis and release of oxygen** –
 - ♦ The seaweeds derive nutrition through photosynthesis of sunlight and nutrients present in seawater.
 - ♦ They release oxygen through every part of their bodies.
 - ♦ They also supply organic nutrients, which they are capable of producing, to other marine lifeforms.

- **Balancing the ecosystem**
 - ♦ Some nutrients found in large waterbodies are toxic to the marine life and can even kill them.
 - ♦ Seaweeds absorb the excess nutrients and balance out the ecosystem
 - ♦ Most heavy metals found in marine ecosystems are also trapped and removed by seaweed
- **Act as a bio-indicator through algal blooming**
 - ♦ When waste from agriculture, industries, aquaculture and households are let into the ocean, it causes nutrient imbalance leading to algal blooming, the sign of marine chemical damage.
- **Mitigate climate change** - By afforesting 9 per cent of the ocean with seaweed, it is possible to sequester 53 billion tons of carbon dioxide annually
 - ♦ Hence, there is a proposal termed as '**ocean afforestation**' for farming seaweed to remove carbon.
- **Importance of seaweed in agriculture and animal husbandry**
 - ♦ They can be used as fertilizers and to increase fish production.
 - ♦ Also, when livestock is fed with seaweed, methane emission from cattle may be reduced substantially.
- **Combat beach erosion** - Additionally, they may be buried in beach dunes to combat beach erosion.
- **It is used as an ingredient** in preparing toothpaste, cosmetics and paints.
- **The conservation status** of seaweeds is yet to be evaluated by the IUCN.

DUMPING INERT WASTE IN ASOLA BHATTI WILDLIFE SANCTUARY

An expert committee will analyse the proposal for dumping "inert material" in Bhatti mines at Asola Bhatti Wildlife Sanctuary.

About:

- South Delhi Municipal Corporation (SDMC) is seeking permission to dump inert (non-reactive) waste from bio-mining of three landfills — Bhalswa, Okhla and Ghazipur — in the mines of Asola Bhatti Wildlife Sanctuary.
- It has been claimed this inert material is waste in the form of soil and is not chemically active.
- Members of the Ridge Management Board (RMB) have formed an expert committee to assess whether it is feasible to allow dumping of inert waste on the ecologically sensitive zone.

Asola Bhatti wildlife sanctuary:

- **Location**
 - ♦ The sanctuary, a precious green belt, is located in the **Southern Delhi Ridge of Aravalli** hill range on Delhi-Haryana border.
 - ♦ It is present at Asola near Tughlaqabad and also lies in northern parts of Faridabad and Gurugram districts of Haryana state.
- **Significance –**
 - ♦ **Only Protected Area of Delhi** - Biogeographically represents Aravalli Mountain Range and is the only protected (wildlife sanctuary) area of the national capital territory of Delhi.
 - ♦ **Rich floral and faunal diversity**
 - It has wide variety of trees, shrubs, herbs and grasses.
 - Apart from around 200 species of resident and migratory birds, it also has various species of mammals, reptiles, amphibians, butterflies and dragonflies
 - Striped Hyena, Indian Golden Jackal, Ruddy Mongoose, Small Indian Civet and Common Palm Civet, Mongoose, Neelgai, etc. are found in this area
 - Several critically endangered, near-endangered, and rare birds have been reported from this sanctuary.
 - ♦ **Connects Wildlife Corridor** - It is at the end part of an important wildlife corridor that starts from Sariska National Park and passes through Haryana.
 - The presence of leopards in Asola Sanctuary is a clear indication that they are moving to Asola through this route.

ASOLA BHATTI WILDLIFE SANCTUARY is spread over 32.71 square kilometres and is at the end of an important wildlife corridor that starts from Sariska National Park in Alwar, Rajasthan, and passes through Mewat, Gurgaon and Faridabad in Haryana



Eco-sensitive zone
The Union government has notified an area of up to 1km around the boundary of the sanctuary in Faridabad and Gurgaon as eco-sensitive zone

Villages in eco-sensitive zone
Lakadpur (Surajkund), Pali, Mangar, Bandhwari, Gwal Pahari, Balola, GGothda Mohbtabad, Badkhal, Ankhir, Mewla Mahrajpur, Anangpur

These are banned
Commercial mining, stone quarrying and crushing units, polluting industries, discharge of untreated effluent, saw mills, brick kilns

Regulated activities
Hotels and resorts, construction, small scale non-polluting industries, felling of trees, civic infrastructure, commercial extraction of water

These are allowed
Rainwater harvesting, organic farming, cottage industries, use of renewable energy and fuels, agro-forestry, use of eco-friendly transport

- ♦ **Green lung and Carbon Sink** - It serves as a carbon sink for the Capital and is a potential shelterbelt against desert storms.
- ♦ **Groundwater recharge** – It is a potential ground water recharge zone Delhi, Faridabad and Gurgaon.
- ♦ **Historical Places** - There are various historical places around sanctuary such as Surajkund(Haryana), Tughlakabad & Adilabad Forests (N.Delhi), Chattarpur Temple.
- **Eco-Sensitive Zone** - Up to 1km around the Asola Bhatti wildlife sanctuary in Gurugram and Faridabad has been declared as

eco sensitive zone.

RIDGE MANAGEMENT BOARD (RMB)

- It was formed in 1995 on the directions of the Supreme court, to preserve the Ridge.
- It is chaired by the Chief secretary of Delhi and has Head of the Forest Department of Delhi Government as its Member Secretary.
- It also has independent expert members from NGOs
- **Delhi Ridge:** The Ridge is the northern extension of the Aravalli Range, extending from Tughlaqabad in south-east to the north near Wazirabad, covering a distance of about 35 km.

PENCH TIGER RESERVE – FEMALE CUB OF MANEATER TIGER AVNI RELEASED

The female cub of tigress Avni has been released into the wild in the Pench Tiger Reserve (PTR) of Maharashtra's Nagpur district.

About:

- Tigress Avni or T1 was killed after being declared a man-eater in November 2018.
- Its female cub, now named PTRF-84, was housed in the in-situ enclosure at Titralmangi of the PTR since December 2018.
- It has now been released into the wild and will be continuously monitored with the help of field formation and satellite tracking.

Pench Tiger Reserve:

- **Pench Tiger Reserve or Pench National Park** is one of the premier tiger reserves of India and is spread across two states - **Madhya Pradesh and Maharashtra**.
- It is one of the major Protected Areas of **Satpura-Maikal ranges of the Central Highlands** and is located in the districts of
 - ♦ Seoni and Chhindwara in Madhya Pradesh and
 - ♦ Along the northern boundary of Nagpur District in Maharashtra.
- The reserve gets its name from the Pench river that flows, north to south, 74 km through the reserve and bisects the reserve into two nearly equal parts.
- It is one of the most popular wildlife reserves in India and is notified as an **IMPORTANT BIRD AREA** of India and is also one of the highest herbivore's densities in India.
- Since its inception in 1965 as a wildlife sanctuary, the park has been serving as the cosy nest of numerous wild creatures including

- ♦ Royal Bengal tiger, jackal, peafowl, wild dog, wild boar, sloth bear, Indian leopard, fox, striped hyena, monkey, gaur, barking deer, four-horned antelope, Indian wolf, and more such enthralling species.
- It was declared a National Park in 1975 and received the official status of Tiger Reserve in 1999.
- The park also has its mention in the famous story of 1894, 'The Jungle Book', penned down by the renowned English Author Rudyard Kipling.

FREE INTER-STATE MOVEMENT OF OXYGEN-CARRYING VEHICLES

Disaster Management Act 2005 was invoked to facilitate oxygen availability.

About:

- **The Ministry of Home Affairs invoked the Disaster Management Act, 2005** to allow free inter-state movement of oxygen-carrying vehicles in order to meet oxygen shortage.
- A bench of the Delhi High Court had earlier directed the central government to ensure a stable supply of medical oxygen to hospitals in Delhi. The HC had also advised to create green corridors and make arrangements to ensure that the transportation of medical oxygen is not obstructed in any way.

Row over oxygen shortage:

- **Crucial in life-support at hospitals:** The ongoing COVID-19 pandemic has increased the demand for oxygen at various public and private hospitals.
- **Need-** Amidst reports of states hoarding oxygen in the fear that supplying oxygen to other states will endanger its own, the Centre issued orders under the Disaster Management Act, 2005 stating that no state can hold up oxygen supplies against another state.
- **Uplifting restrictions-** No restriction to be imposed on the movement of medical oxygen between states and transport authorities to allow free inter-state movement of oxygen carrying vehicles; no restrictions on timing of transport within cities; no restrictions on oxygen manufacturers and suppliers to limit the oxygen supplies only to the hospitals of the State/ UT in which they are located; no authority shall attach the oxygen carrying vehicles passing through the district or areas for making supplies specific to any particular district(s) or area; supply of oxygen for industrial purposes, except those exempted by the Government, prohibited with effect from April 22 until further orders.
- **Implementation-** The onus of implementing the order is on

District Magistrates/ Deputy Commissioners and Senior Superintendents of Police/ Superintendents of Police/ Deputy Commissioners of Police who would be "personally liable".

- States/UTs have to strictly abide by the supply plan of medical oxygen prepared by Empowered Group II (made in consultation with the states) and as revised from time-to-time.
- **Penal provisions-** Failure to implement the order can attract penal provisions of the law for concerned state officials.
 - ♦ Under Section 51 of the DM Act, whoever refuses to comply with orders is liable for punishment with imprisonment up to one year, or fine, or both.
 - ♦ In case the refusal leads to death of people, the person liable shall be punished with imprisonment up to two years.

Significance:

- Lifting the restrictions on supply and transport of medical oxygen is crucial in meeting the oxygen shortage reported across the country.
- Medical Oxygen is needed to manage moderate and severe cases of COVID-19 and with the increasing cases, the supply will need to keep pace with the requirements of the States/ UTs.
- Medical oxygen is an essential public health commodity and any obstacle in its supply might critically impact the management of patients suffering from COVID-19 disease in other parts of the country.
- The order is also an important step in ensuring that states do not divert oxygen supplies meant for other states into their own.

Way ahead:

- It is important to overcome the 'Just-in-Time' approach in oxygen supply for COVID-19 patients. Enacting green corridors for oxygen supply will further help in supplying oxygen in shorter time.

LEADERS SUMMIT ON CLIMATE

The US President convened the Summit online by inviting 40 world leaders.

About:

- US President Joe Biden invited 40 world leaders to the virtually-held **Leaders Summit on Climate** hosted on April 22 and 23.
- India was also invited, apart from Russia, China, Brazil, South Africa etc. and a small number of business and civil society leaders.

Leaders Summit on Climate:

- **What is it?** The Summit reconvened the US-led Major Economies Forum on Energy and Climate, which brings together 17 countries responsible for approximately 80 percent of global emissions and global GDP. India is a member of the Forum.
- **The Leaders exchanged views on climate change**, enhancing climate actions, mobilising finance towards climate mitigation and adaptation, nature-based solutions, climate security as well as technological innovations for clean energy.
- **Key Themes of the Summit-**
 - ♦ Galvanizing efforts by the world's major economies to reduce emissions in this critical decade to keep a limit to warming of 1.5 degree Celsius within reach.
 - ♦ Mobilizing public and private sector finance to drive the net-zero transition and to help vulnerable countries cope with climate impacts.
 - ♦ The economic benefits of climate action, with a strong emphasis on job creation, and the importance of ensuring all communities and workers benefit from the transition to a new clean energy economy.
 - ♦ Spurring transformational technologies that can help reduce emissions and adapt to climate change, while also creating enormous new economic opportunities and building the industries of the future.
 - ♦ Showcasing subnational and non-state actors that are committed to green recovery and an equitable vision for limiting warming to 1.5 degree Celsius, and are working closely with national governments to advance ambition and resilience.
 - ♦ Discussing opportunities to strengthen capacity to protect lives and livelihoods from the impacts of climate change, address the global security challenges posed by climate change and the impact on readiness, and address the role of nature-based solutions in achieving net zero by 2050 goals.
- **Commitments by the USA-**
 - ♦ Target of reducing its net greenhouse gas emissions by 50–52 % below 2005 levels in 2030.
 - ♦ The US will double its public climate financing development to developing countries and triple public financing for climate application in developing countries by 2024.
- **Commitment by China-** Pledged to achieve net-zero emissions by 2060. President Xi Jinping also emphasized upon the Common but Differentiated Responsibilities (CBDR) while committing to fight climate change.
- **Commitment by other nations-**
 - ♦ UK was the first country to pass a legislation for net zero and had announced a target of 78% emission reductions

by 2035 (compared to 1990 levels).

- ♦ Germany aims to reduce emissions by 55% by 2030 as compared to 1990 levels.
- At the Summit, USA and India jointly launched the India-US Clean Energy Agenda 2030 Partnership.

India-US Clean Energy Agenda 2030 Partnership:

- **What is it about?** To help mobilise investments, demonstrate clean technologies, and enable green collaborations and create stronger bilateral cooperation on actions in the current decade to meet the goals of the Paris Agreement.
- **Aim:** To mobilize finance and clean energy deployment, demonstrate and scale innovative clean technologies needed to decarbonize sectors including industry, transportation, power, and buildings, and build capacity to measure, manage, and adapt to the risks of climate-related impacts.
- **The Partnership will proceed along two main tracks:** The Strategic Clean Energy Partnership and the Climate Action and Finance Mobilization Dialogue, which will build on and subsume a range of existing processes.
- India has also committed to installing 450GW of renewable energy by 2030.

INDIA'S NATIONALLY DETERMINED CONTRIBUTION (NDC) TOWARDS PARIS AGREEMENT OF UNFCCC

- Reduction in the emissions intensity of Gross Domestic Product (GDP) by 33 to 35 % by 2030 from 2005 level.
- Achieving about 40% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.
- Creating an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030.

Significance:

- **UN COP 26:** The Summit will be a key milestone on the road to the United Nations Climate Change Conference (COP26) in November 2021 in Glasgow (UK).
- **Setting an example:** The India-US Partnership demonstrates how the world may align swift climate action with inclusive and resilient economic development, taking into account national circumstances and sustainable development priorities.

Way ahead:

- Climate change is a global phenomenon which requires combined efforts from all the countries. The fight against climate change needs to be balanced with equitable, sustainable and inclusive development.
- There is an urgent need to mobilize climate finance, investments in green practices and adopting a sustainable lifestyle.

NEED FOR PROTECTION RULES FOR EXOTIC ANIMALS

A hippopotamus was rescued from a circus recently.

About:

- People for the Ethical Treatment of Animals (PETA) had filed a petition about the status of a male hippopotamus rescued from Asiad Circus in Uttar Pradesh.
- The Delhi High Court issued an order directing the Centre to frame rules to confer protection for exotic animals that are currently not under the purview of the Wildlife (Protection) Act, 1972.

Background:

- A male hippopotamus was rescued from the Asiad Circus in Uttar Pradesh and moved to a rescue facility in Jamnagar, Gujarat, where it was kept in the company of a female rescued hippo.
- The Animal Welfare Board of India (AWBI) conducted an inspection of the site and found it satisfactory in terms of physical and mental health of the animal and also the housing conditions, environmental enrichment and nutrition being given to him.

HIPPOPOTAMUS (HIPPOPOTAMUS AMPHIBIUS)

- Known as the 'river horse', it is the second largest land species after the elephant and is a herbivore.
 - They spend 16 hours submerged in the water to keep cool from the hot African sun. Their eyes and nostrils are located high on their heads, which allows them to see and breathe while mostly submerged.
 - While basking on the land, they secrete a red oily substance that functions as a skin moisturizer, sunblock and germ protection.
 - A female has a calf every 2 years after a gestation period of eight months.
 - **Distribution-** Lakes and rivers of eastern central and Sub-Saharan Africa.
 - **IUCN status-** Vulnerable
 - **Threats-** Habitat loss, poaching, conflict zones.
 - Scientists are of the opinion that hippos lived in India from about 6 million years ago till about 9000 years ago. Hippopotamus remains have also been found in Madhya Pradesh near the Narmada.
- AWBI also confirmed that the facility met the Central Zoo Authority's "Guidelines on Minimum Dimensions of Enclosures for Housing Exotic Animals of Different Species"

and recommended that the hippopotamus must receive lifelong care at the facility, which the High Court approved of as well.

- PETA in its petition had also requested that the court direct the Ministry of Environment, Forest and Climate Change to expand the Central Zoo Authority's purview to include all exotic wild animals, including hippos, birds, and others who aren't currently protected under the Wildlife (Protection) Act, 1972.

Exotic Animal:

- It usually refers to an unusual looking animal or which is non-native, although there is no set definition.
- As per the Ministry of Environment, Forests and Climate Change "exotic live species" mean only "the animals named under the Appendices I, II and III of the Convention of International Trade in Endangered Species (CITES) of Wild Fauna and Flora.
- Appendices I, II and III of CITES list 5,950 species as protected against over-exploitation through international trade.
- Last year, the Ministry had also announced an advisory for voluntary disclosure by people importing exotic live species, to be done through MOEFCC's Parivesh portal.

Significance:

- A set of rules providing for the maintenance, trade etc. of exotic species not covered under WPA, 1972 is needed to curb illegal and inhumane trade and captivity of such species.
- This will further the spirit of Directive Principle of State Policy 48A, which states that "the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country" as well as the Fundamental Duty "to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures".

DOOMSDAY GLACIER

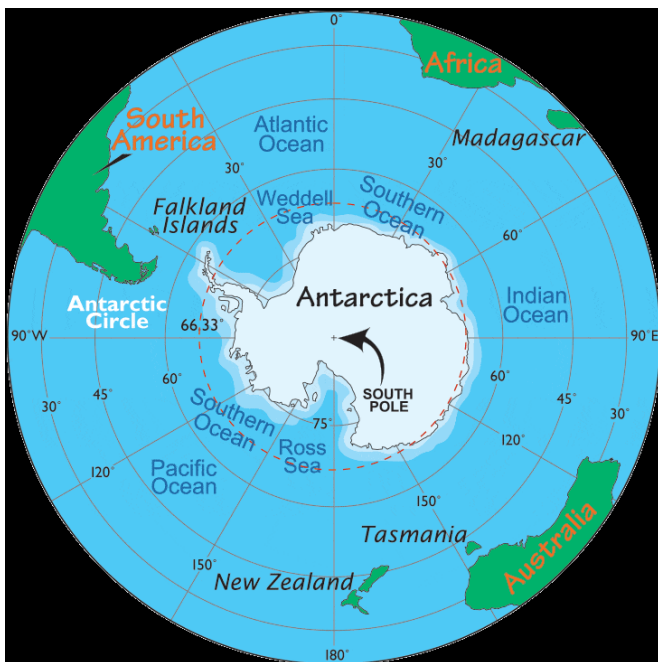
According to a study, 1/3rd of Antarctica's ice shelves including 'Doomsday Glacier' are at risk of collapse into the sea due to global warming.

About:

- As per the study, if global temperatures reach four degrees Celsius above pre-industrial levels
 - ♦ Around 34 per cent of the area of all Antarctic ice shelves – around half a million square kilometres – would be at risk of collapsing into the sea.

May, 2021

- It includes 67 percent of ice shelf area on the Antarctic Peninsula.
- ♦ Larsen C—the largest remaining ice shelf on the Antarctic peninsula—as well as the Shackleton, Pine Island, and Wilkin's ice shelves are most at risk.
- **Warm water under Doomsday glacier** - Scientists have discovered that supply of warm water underneath the Thwaites Glacier (Doomsday Glacier) is larger than previously thought
 - ♦ This has induced fears of enhanced melting and higher rate of deterioration of the glacier.



Thwaites Glacier (Doomsday Glacier) and its significance:

- It is 120 km wide at its broadest, fast-moving, and melting fast over the years.
- Because of its size (1.9 lakh square km), it contains enough water to raise the world sea level by more than half a metre.
 - ♦ Studies have found the amount of ice flowing out of it has nearly doubled over the past 30 year
 - ♦ Today, Thwaites's melting already contributes 4% to global sea level rise each year.
 - ♦ It is estimated that it would collapse into the sea in 200-900 years.
- Thwaites is important for Antarctica as it slows the ice behind it from freely flowing into the ocean.
 - ♦ **Ice shelves are important buffers preventing** glaciers on land from flowing freely into the ocean and contributing to sea level rise
- Because of the risk it faces — and poses — Thwaites is often called the Doomsday Glacier for being Antarctica's fastest melting glaciers.

Previous studies on Doomsday Glacier (New York study):

- A 2019 study had discovered a fast-growing cavity in the glacier.
- In 2020, scientists detected warm water at a vital point below the glacier using Icefin.
 - ♦ **Water at just two degrees above freezing point** at Thwaites's "grounding zone" or "grounding line" was found.
 - ♦ **The grounding line** is the place below a glacier at which the ice transitions between resting fully on bedrock and floating on the ocean as an ice shelf.
 - ♦ The location of the line is a pointer to the rate of retreat of a glacier.
- **An underwater robot called Icefin (ocean-sensing device)** was dropped around 600 m underneath the surface of the glacier to measure the waters moving below the glacier's surface.

New study (Sweden's University of Gothenburg):

- **An uncrewed submarine** was made to go under the Thwaites glacier front to make observations.
 - ♦ **The submersible called "Ran"** measured among other things the strength, temperature, salinity and oxygen content of the ocean currents that go under the glacier.
- Using the results, the researchers have mapped the ocean currents that flow below Thwaites's floating part.
- **The study has found that warm water is approaching** the pinning points (points that anchor the shelf to the land and are critical to ice-shelf stability) of the glacier from all sides
 - ♦ There is a deep connection to the east through which deep water flows from Pine Island Bay
 - ♦ One heat channel also brings warm water towards the glacier from the north
 - ♦ There were distinct paths that water takes in and out of the ice shelf cavity, influenced by the geometry of the ocean floor.

NAVEGAON-NAGZIRA TIGER RESERVE

Three labourers were killed in forest fire at Navegaon-Nagzira Tiger Reserve in Maharashtra.

About:

- **Location:** Maharashtra
 - ♦ It is situated in Gondia and Bhandara districts of Vidarbha region (North-Eastern corner) in Maharashtra
 - Gondia District shares common boundaries with the states of Madhya Pradesh and Chhattisgarh on North and Eastern side respectively.
 - ♦ Strategically, the Tiger Reserve is located in the heart of central Indian Tiger landscape which contributes almost 1/6th of the total tiger population of the country.



- ♦ Achanakmar Tiger reserve in Chhattisgarh.
- ♦ It is also connected to important tiger bearing areas like Umred-Karhandla sanctuary and Brahampuri Division in Maharashtra.

NATIONAL CLIMATE VULNERABILITY ASSESSMENT REPORT

The Department of Science and Technology has released this report.

• Protected area

- ♦ It was notified as the 46th tiger reserve of India in December 2013.
- ♦ It comprises five protected areas (PAs) of
 - Nagzira Wildlife Sanctuary,
 - New Nagzira Wildlife Sanctuary,
 - Navegaon National Park,
 - Navegaon Wildlife Sanctuary and
 - Koka Wildlife Sanctuary.

• Flora

- ♦ **Forest Type - Southern Tropical Dry Deciduous Forest** which includes dry mixed forests to moist forest type.
- ♦ **Semi ever-green Forests, small patches of grasslands,** bamboo forests, teak forests and medicinal plants can be seen here.
- ♦ It has some main species of Bhor, Bhel, Ain, Mahua, Kawat, Jamun, Haldu etc.
- ♦ Bamboo occurs in abundance over the central portion in all five PAs of tiger reserve.

• Fauna

- ♦ **Carnivores** - Large Carnivores such as tigers and leopards and smaller carnivores like wild dogs, wolf jackals, jungle cats and also sloth bears are seen.
- ♦ **Herbivores** - The important herbivore includes Cheetal, Sambar, Nilgai, Chousingha, Barking deer, Wild pig, Indian gaur and Mouse deer
- ♦ **More than 300 species of birds** have been reported from the area including eagles, orioles, ground thrushes etc.
- ♦ **A good number of invertebrates** like butterflies, insects, fish, snakes etc are found.

• Connectivity: It has connectivity with other major tiger reserves like

- ♦ Kanha and Pench tiger reserve in Madhya Pradesh,
- ♦ Tadoba-Andhari Tiger reserve in Maharashtra,
- ♦ Indravati Tiger Reserve in Chhattisgarh,
- ♦ Indirectly connected with
- ♦ Kawal and Nagarjuna Sagar in Telangana and Andhra Pradesh and

About:

- This report on 'Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework' is part of an important activity of the capacity building programme under the two National Missions on Climate Change i.e.
 - ♦ National Mission on Sustaining the Himalayan Ecosystem (NMSHE).
 - ♦ National Mission on Strategic Knowledge for Climate Change (NMSKCC).
- The report, a.k.a. National Climate Vulnerability Assessment Report is submitted by Indian Institute of Technology Mandi and Indian Institute of Technology Guwahati in collaboration with Indian Institute of Science, Bengaluru Under the project Climate vulnerability and risk assessment at the national level using a common framework.
- The activity was conducted in partnership with the the Swiss Agency for Development and Cooperation (SDC), Embassy of Switzerland through the project 'Vulnerability Profiles for India: State and District Levels'.
- It identifies the most vulnerable states and districts in India with respect to current climate risk and key drivers of vulnerability.
- Key indicators for the assessment include percentage of population living below the poverty line; income share from natural resources; the proportion of marginal and small landholdings, women's participation in the workforce; density of healthcare workers etc.
- "Assessing vulnerability was the first step towards assessing climate risk. There are two other components like Hazard and Exposure that need to be also assessed to arrive at overall climate risk.
- The assessment is unique as it uses a common framework across the states & union territory to make them comparable thereby empowering the decision-making capabilities at the policy and administrative levels.

NOTE

1. **Maharashtra** has been **ranked lowest among states** likely to be affected by climate vulnerability in a first-of-its-kind assessment report released by Department of Science and Technology (DST).
2. **Nandurbar**, however, is among 51 districts **most vulnerable** to climate change.

Key findings of the vulnerability assessment:

- Based on an all-India assessment, this report identifies the most vulnerable states and districts in India with respect to current climate risk and the main drivers of vulnerability.
- State-level vulnerability indices developed in this report vary over a small range: 0.42-0.67. This means all states must deal with concerns related to vulnerability.
- The states with a relatively high vulnerability, Jharkhand, Mizoram, Orissa, Chhattisgarh, Assam, Bihar, Arunachal Pradesh, and West Bengal, are mostly in the eastern part of the country, requiring prioritisation of adaptation interventions.
- District-level vulnerability indices are also within a small range: 0.34 - 0.75. Assam, Bihar, and Jharkhand have over 60% districts in the category of highly vulnerable districts.
- Vulnerability indices are relative measures. This means, all districts or states are vulnerable, but some are relatively more vulnerable than others, requiring prioritised adaptation interventions.

Application of the vulnerability assessment:

- It can **assist in ranking and identification** of the most vulnerable districts and states and help states prioritise adaptation planning and investments.
- It will also facilitate Nationally Determined Contributions, which aims to adapt better to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, health sector and regions such as Himalayan region, coastal regions, etc.
- It may also aid to plan disaster management.
- A vulnerability assessment contributes to reporting under the Paris Agreement, Article-9 through the assessment of climate change impacts and vulnerability.
- It will also benefit climate-vulnerable communities across India through development of better-designed climate change adaptation projects.
- The report has helped identify the most vulnerable states, districts & panchayats and will aid in prioritizing adaptation investment, developing and implementing adaptation programs.

Way Forward:

- A vulnerability assessment is a first step towards adaptation planning. The following tasks are suggested for the future:
 - ♦ Need for development of climate change risk index, followed by risk ranking of states and districts, where: Risk = (Hazard, Exposure, Vulnerability).
 - ♦ Development of a common framework, methodology and guidelines for risk assessment.
 - ♦ All State Climate Change Centres funded by the Department of Science and Technology; Government of India are interested in developing a Risk Index for states. It requires building capacity for risk assessment and adaptation planning.
 - ♦ Generation of data for risk assessment is important. There is need of a strategy for data generation for climate change risk and vulnerability assessment and adaptation planning.

GREAT INDIAN BUSTARD POACHING IN PAKISTAN

Recently, a group of hunters shot down two Great Indian Bustards (GIBs) in a protected area of southern Punjab's Cholistan in Pakistan.

About:

- The **Great Indian Bustard (GIB)** is the **State bird of Rajasthan**, is considered India's most **critically endangered bird**.
- It is one of the heaviest flying Bird in the world
- It is endemic to the Indian subcontinent. In India, the population confines mostly to **Rajasthan and Gujarat**. In Rajasthan also GIB's population is less than 100. This accounts **for 95% of its total world population**.
- The habitat where it is most often found is arid and semi-arid grasslands, open country with thorn scrub, tall grass so it is known as flagship grassland species representing the health of grassland ecology.
- **Conservation Status:**
 - ♦ **IUCN Red List:** Critically Endangered
 - ♦ **CITES:** Appendix1
 - ♦ **Wildlife (Protection) Act, 1972:** Schedule1
- The Great Indian Bustard is under constant threat due to Hunting, Collision/ Electrocution with Power Transmission Line, Irrigation and Farming Technology among others.

India's Interest:

- **The Grassland Habitat in Pakistan's Cholistan desert** is very similar to the habitat in Rajasthan's Desert National Park (DNP). Where the Great Indian Bustard (GIB) was killed.

- DNP is situated near the towns of Jaisalmer and Barmer, forming a part of the mighty Thar Desert.
- DNP was declared as a National Park in 1981 to protect the habitat of the Great Indian Bustard.
- **Rajasthan shares the international border with Pakistan's** Sindh and Punjab provinces. The remaining Indian-bred GIBs may also fly across to Pakistan's desert and become easy prey for the gun-toting poachers.
- **The hunting of the GIB** will not only drastically reduce India's GIB population but will also affect the desert ecosystem.

India's Initiatives For Protection of GIB:

- The state of Rajasthan initiated **Project Great Indian Bustard**, on World Environment Day 2013, identifying and fencing off bustard breeding grounds in existing protected areas as well as provide secure breeding enclosures in areas outside protected areas.
- The development of linear infrastructure intrusions such as roads and electric power lines in the desert that lead to collision-related mortality.
- Proposed expansion of renewable energy infrastructure, which may involve deploying solar panels over large areas of desert and grasslands is another threat to the bird's habitat.
- In 2020, nine chicks were incubated successfully creating a world record.
- The Ministry of Environment, Forests and Climate Change (MoEFCC) has included the Great Indian Bustard (GIB) under the **Species Recovery Programme**.

CHOLISTAN DESERT

The Cholistan Desert also locally known as **Rohi** is a large desert in the **southern part of Punjab**, Pakistan that forms part of the Greater Thar Desert which extends to **Sindh province** and the Indian state of **Rajasthan**. It is one of two large deserts in Punjab, the other being **Thal Desert**.

INDIA'S FIRST DISK-FOOTED BAT

India's first bamboo-dwelling bat with sticky disks, has been found near Nongkhylllem Wildlife Sanctuary in Meghalaya.

About:

- The **disk-footed bat** (*Eudiscopus denticulus*) is a species of vesper bat in the Vespertilionidae family found in Laos, Myanmar, southern china, Vietnam and Thailand.
- The disc-footed bat was recorded in the northeastern Indian state's (Meghalaya), Lailad area near the **Nongkhylllem Wildlife Sanctuary**. It is about 1000 km west of the bats nearest known habitat, **Myanmar**.

- The bat species *Eudiscopus denticulus*, aptly called Disk-Footed bat, is very distinctive in appearance with prominent disk-like pads in the thumb and bright orange colouration.
- Due to Flattened Skull and Sticky Pads enabled the bats to roost inside narrow spaces such as bamboo internodes.
- It is genetically very different from all other known bats bearing disk like pads.
- The disk-footed bat has raised meghalaya's bat count to 66, the most for any state in india.
- India has total of 130 bat species. It has also helped add a genus and species to the bat fauna of India.

IUCN Red List: Least Concern:

- **Nongkhylllem Wildlife Sanctuary:**
 - It is located in the Ri-Bhoi district of Meghalaya and spread over an area of 29 sq kms & famous for tourist attraction.
 - The Sanctuary falls in the **Eastern Himalayan Global bio-diversity hot spot**.
 - This area is rich in Floral and Faunal wealth and habitat of fauna such as clouded Leopard, Indian Bison, and Himalayan Black Bear etc.
 - It has presence of endangered species such as the Rufous Necked Hornbill, Brown Hornbill and Manipur bush Quail.
- **Wild Life Sanctuaries in Meghalaya:**
 - Nongkhylllem
 - Narpuh
 - Siju
 - Baghmara Pitcher Plant
- **National Parks:**
 - Balpakram (Phase I)
 - Nokrek

SULPHUR DIOXIDE FROM CARIBBEAN VOLCANO REACHES INDIA: WMO

The Sulphur Dioxide (SO₂) emissions from a volcanic eruption in the Caribbean have reached India.

About:

- The sulphur dioxide (SO₂) emissions from a volcanic eruption in the Caribbean reached India April 16, 2021 sparking fear of **increased pollution levels** in the northern parts of the country and **acid rain**.
- Volcanic "plumes can cause aviation and air quality hazards.
- La Soufriere is among those that worry volcanologists the most because of its "explosive and erratic eruption style".

- Volcanic emissions reaching the stratosphere can have a **cooling effect** on global temperatures.
- "The aerosols increase the reflection of radiation from the Sun back into space, cooling the Earth's lower atmosphere or troposphere," which decrease in temperature of 0.27 degree Celsius or more on the Earth's surface for up to three years.
- La Soufriere has delivered around 0.4-0.6 teragram of SO₂ into the upper atmosphere which is the **highest-ever recorded** after satellites started observing the Earth's atmosphere in the mid-20th century.

Caribbean Volcano La Soufriere):

- La Soufriere is an active **stratovolcano** on the Caribbean island of **Saint Vincent** in **Saint Vincent and the Grenadines**.
- It has a crater lake and is the island's youngest and northernmost volcano.
- It is the **highest peak in Saint Vincent** and has had five recorded explosive eruptions since 1718, most recently in April 2021.

- **Stratovolcano:** These volcanoes are characterized by a steep profile and periodic, explosive eruptions.
- A **stratovolcano** is a tall, conical volcano composed of one layer of hardened lava, tephra, and volcanic ash.

- La Soufriere has had five explosive eruptions during the recorded historical period. It violently erupted in 1718, 1812, 1902, 1979, and 2021.

Sulphur Dioxide:

- **Sulfur dioxide**, SO₂, is a colorless **gas** or liquid with a strong, choking odor.
- The **main source** of SO₂ in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities.
- Secondary sources of SO₂ emissions include ore smelters and the burning of high sulfur fuel by trains, large ships, and non-road equipment.

Acid rain:

- Acid rain is caused by emissions of sulphur dioxide and nitrogen oxide, which react with the water molecules in the atmosphere to produce sulfuric and nitric acids. These then mix with water and other materials before falling to the ground.
- Liquids with a pH less than 7 are acidic, and those with a pH greater than 7 are alkaline.

NEW OPIUM CULTIVATION STRATEGY

Central Government will involve private sector to boost opium alkaloid production.

About:

- The Central Government has decided to involve the private sector to cultivate opium in order to boost yield of alkaloids.

Opium Cultivation in India:

- **What is opium?** Opium is a narcotic drug retrieved from Papaver somniferum (opium poppy) from its unripe seedpods. After the plant's flower petals have fallen off, opium is derived by incising the seeds (lancing), from which a gumlike substance is extracted. This is sold directly or converted into powdered form or treated further to obtain morphine, codeine or heroin. Opium and its derivatives are called opiates.
- **Uses of opium:** Morphine, codeine, and thebaine, derivatives of opium, act upon the central nervous system and are analgesic, narcotic, and potentially addicting compounds. Most of the other opium alkaloids act only to relax involuntary (smooth) muscles. Ayurveda describes it as a medicinal plant to treat dysentery, diarrhoea, spasms, pain etc.
- **Where is it cultivated?** The poppy sowing season starts around November and the crop is usually ready for harvest by March.
 - ♦ Afghanistan is the worldwide capital of opium cultivation, leading to about three-quarters of the world's heroin supply. Together with Iran and Pakistan, this region is called as 'Golden Crescent'.
 - ♦ In mid-1990s, Laos, Thailand and Myanmar (Golden Triangle) had emerged as the leader in opium cultivation.
 - ♦ In India, it is cultivated in 22 districts in Rajasthan (Jhalawar, Bhilwara, Chittorgarh, Kota, Udaipur and Pratapgarh), Uttar Pradesh (Barabanki, Faizabad, Ghazipur, Mau, Lucknow, Raibareilly, Bareilly, Shahjahanpur and Budaun). and Madhya Pradesh (Mandsaur, Neemuch, Ratlam, Ujjain, Jhabua, Shajapur, and Rajgarh).
 - ♦ Central Bureau of Narcotics also relies on satellite imagery to monitor opium cultivation.
- **Control on opium cultivation:** Opium can be legally cultivated in India only on Government notified tracts and cultivation and trade of legally grown opium is controlled by the Central Bureau of Narcotics (based in Gwalior) under Ministry of Finance.
 - ♦ Under the United Nations Single Convention on Narcotic Drugs, 1961, India is among the 12 countries in the world allowed to grow opium poppy for medicinal use and only country to be allowed to extract opium gum.
 - ♦ The National Drugs and Psychotropic Substances Act 1985 controls opium production in India. Government's recent move to rope in private players might require amendment to the NDPS Act.

- ♦ The state governments in India regulate the sale of poppy straw for medical and scientific purposes.
- ♦ To reduce the risk of diversion, it is ensured that the product is not left with the cultivators for a significant amount of time following the conclusion of the lancing and extraction of the opium.
- **Licensing policy:** According to the licensing policy of opium cultivation in India, the plot size and license are assessed and renewed every year by the Central Bureau of Narcotics, based on the previous season's performance and quality of gum supplied by the farmer, and after estimating domestic and international requirements.
 - ♦ If the net weight of the opium produce is less than the per hectare norm mandated by the government (minimum qualifying yield), then the farmer could end up losing their opium cultivation licence or if any rules are violated, the farmer can be subjected to the provisions of the NDPS Act.
 - ♦ The farmers are required to sell the extracted gum to government factories.
- **Concentrated Poppy Straw (CPS) Process:** In this method, the entire plant is processed with its stalk to extract the drugs. The crushed pods left after extraction of the seeds are referred to as poppy straw, and contain morphine residue.

Significance:

- **Reduce import dependence:** India's opium crop acreage has been steadily declining over the years and using the CPS extraction method is expected to help cut the occasional dependence on imports of products like codeine (extracted from opium) for medical uses.
- **Higher production:** Alkaloid extraction using the CPS is more compared to the opium gum. It is also possible to have two-three crop cycles in one year if CPS varieties of seeds are used and which can be grown in indoor greenhouses.
- **Modern method:** The shift to the concentrated poppy straw method is a welcome move as the incision method is often considered as an archaic one.
- **Economical:** Rajasthan High Court had earlier banned the sale of poppy husk which was believed to have aggravated the problem of drug abuse in Punjab. This had resulted in a loss to opium farmers. The CPS allows complete use of the plant.
- **Benefit to farmers:** Private participation will improve the quality of seeds available to the farmer, improve the quantity of yield from the crop and fetch better prices.

NARCOTICS AND PSYCHOTROPIC SUBSTANCES ACT 1985

- It is a comprehensive legislation enacted to reform and update the previous inadequate laws related to narcotic drugs, such as The Opium Act 1852, The Opium Act 1878 and The Hazardous Drugs Act 1930.
- It defines the term 'addict', prescribes penalties for illegal cultivation or trade, with offences being cognizable and non-bailable.
- The Act has a straightforward method of adding and withdrawing narcotics and psychotropic substances from the lists via official gazette notification by the central government.
- The Narcotics Control Bureau (established by Central Government in 1986) functions as the national international liaison coordinator and as the nodal point for intelligence collection and dissemination and ensures coordinated implementation within the parameters of national strategy.

UNITED NATIONS OFFICE ON DRUGS AND CRIME

- It was established in 1997 as a global leader in the struggle against illicit drugs and transnational organized crime, and the United Nations lead programme on terrorism.
- Its work involves informing the world about dangers of drug abuse, strengthen international action against drug production, trafficking and drug-related crime, improve crime prevention, assist in criminal justice reform in Member States.

STURGEON

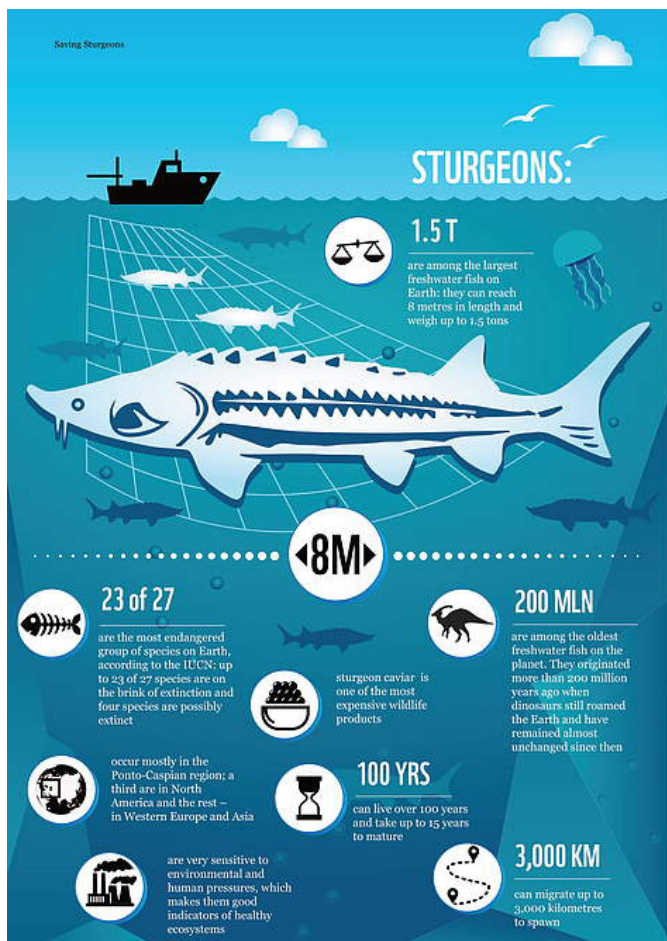
According to World Wildlife Fund (WWF), Illegal sale of sturgeon is rampant in the Danube (river) region.

About:

- The illegal trade is rampant the lower Danube region, especially in Bulgaria, Romania, Serbia and Ukraine.
- The fish species are poached for their meat and caviar, which is considered a delicacy.

Sturgeons:

- The sturgeons are a very old group of fishes and make up one of the most primitive lineages of bony fishes.
 - ♦ They have existed since the time of dinosaurs, for about 200 million years.



- **Endangered** - They are the most endangered species and are on the brink of extinction due to overfishing, a flourishing illegal caviar trade and habitat loss
- **Danube Sturgeon** –
 - ♦ There are six species of sturgeons native in the Danube River Basin. Five of them are **critically endangered**.
 - ♦ **They live mostly in the Black Sea**, migrating up the Danube and other major rivers to spawn.

DANUBE RIVER

- The Danube River is the second-longest river in Europe after Russia's Volga.
 - ♦ It begins in the Black Forest region of Germany and runs through 10 countries on its way to the **Black Sea**.
 - ♦ The countries are - Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Bulgaria, Moldova and Ukraine).
- Danube river basin is Europe's second largest and world's most international river basin.



WORLD-WIDE FUND FOR NATURE (WWF)

- Established in 1961, it is an international non-profit conservation organisation.
- It is one of the world's largest independent organizations, with over 5 million supporters and a global network active in more than 100 countries.
- It works with communities, businesses and governments to help people and nature thrive
- **WWF's mission is to**
 - ♦ Stop the degradation of the planet's natural environment
 - ♦ Build a future in which humans live in harmony with nature,
 - ♦ Conserve the world's biological diversity,
 - ♦ Ensure that the use of renewable natural resources is sustainable, promote the reduction of pollution and wasteful consumption.
- **Logo** - The Giant Panda.
- **Headquarters** - Gland, Switzerland.

- **Characteristics** - They are covered with strong bony plates; they have asymmetrical, shark-like tails; and they have barbels off of their long snouts that help in locating their prey
- **Habitat** –
 - ♦ There are around 27 species of sturgeons and paddlefishes distributed across the temperate waters of Northern hemisphere.
 - ♦ While some species inhabit only freshwater, most species are anadromous
 - **Anadromous** means they spawn in freshwater but spend much of their life history in marine or brackish environments
- Some of the species can grow up to eight metre in length and live more than a century.
- They are called 'living fossils' because their appearance has altered very little over the years.
 - ♦ As the sturgeons live for so many years, mature late and spawn with long intervals, they take long to recover from environmental and human pressures.
 - ♦ This makes them great indicators for the health of the river and other ecological parameters.



SCIENCE & TECHNOLOGY

CREW-2 MISSION

Four astronauts were launched to the International Space Station (ISS) from Florida as part of a collaboration between NASA and SpaceX under the Commercial Crew Program.

About: Commercial Crew Program

- The **main objective** of this program is to make access to space easier **in terms of its cost**, so that cargo and crew can be easily transported to and from the ISS.
- Through this program, **NASA plans to lower its costs by sharing them with commercial partners** such as Boeing and SpaceX, and also give the companies incentive to design and build the Commercial Orbital Transportation Services (COTS).
- Commercial Crew Program **encouraging private companies such as Boeing and SpaceX to provide crew transportation services** to and from low-Earth orbit.
- To avail their services, NASA pays these companies, similar to how a passenger pays for a flight ticket to go from point A to B.
- Boeing and SpaceX were selected by NASA in September 2014 to develop transportation systems meant to transfer crew from the US to the ISS.
- NASA's Commercial Crew Program is **a partnership between NASA and private industry** to carry astronauts to and from the International Space Station.

Crew-2 Mission:

- It is **the second crew rotation** of the SpaceX Crew Dragon and **the first** with international partners.
- Out of the **four astronauts**, two are from **NASA** and two are from the Japan Aerospace Exploration Agency (**JAXA**) and the European Space Agency (**ESA**).
- The Crew-2 mission transported four members of the crew to the International Space Station (ISS).
- Crew-2 astronauts will join the members of Expedition 65, NASA astronaut. They will **stay aboard the ISS for six months** during which time they will conduct science experiments in low-Earth orbit.
- **Objective:**
 - ♦ Members of this mission **conduct microgravity studies, investigate food physiology** meant to study the effects of dietary improvements on immune function and the gut microbiome and **how those improvements can help crews adapt to spaceflight**.

- ♦ Their central focus during this time will be to continue a series of **Tissue Chips** in Space studies.

TISSUE CHIPS

Tissue Chips are small models of human organs that contain multiple cell types that behave similarly to the human body. According to NASA, these chips can potentially speed up the process of identifying safe and effective drugs and vaccines.

- ♦ Scientists can use these tissue chips in space **to study diseases that affect specific human organs**, which would take months or years to develop on Earth.

Facts about International Space Station (ISS):

- The **International Space Station (ISS)** is a modular space station (habitable artificial satellite) **in low Earth orbit**.
- It is a multinational collaborative project involving five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada).
- The ownership and use of the space station is established **by intergovernmental treaties and agreements**.
- The station **serves as a microgravity and space environment research laboratory** in which scientific research is conducted **in astrobiology, astronomy, meteorology, physics, and other fields**.
- The ISS **is suited for testing the spacecraft systems and equipment** required for possible future long-duration **missions to the Moon and Mars**.
- It is expected to operate until 2030.

BAIKAL-GVD TELESCOPE

Russian scientists launched one of the world's biggest underwater neutrino telescopes called the Baikal-GVD (Gigaton Volume Detector) in the waters of Lake Baikal, the world's deepest lake situated in Siberia.

About:

- The **Baikal-GVD** is one of the three largest neutrino detectors in the world along with the **IceCube** at the South Pole and **ANTARES** in the Mediterranean Sea.
- It is motivated by the mission to study in detail the **elusive fundamental particles** called **neutrinos** and to possibly determine their sources.

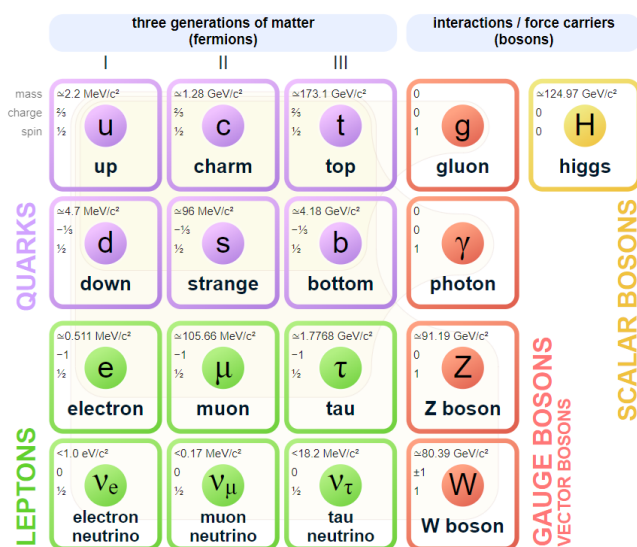
May, 2021

- It will aid scientists' understanding of the origins of the universe since some neutrinos were formed during the Big Bang, others continue to be formed as a result of supernova explosions or because of nuclear reactions in the Sun.

Fundamental Particles:

- An **elementary particle** or **fundamental particle** is a subatomic particle with no substructure, i.e. it is not composed of other particles.
- Particles of matter can be classified into **quarks and leptons**. But this only applies to **"normal matter"** or the matter that scientists know that five per cent of the universe is made up of.
- Exploration in the field of physics so far has led to the discovery of over 12 such quarks and leptons.
- In different combinations, these particles can make different kinds of atoms, which in turn make up molecules that form everything— from a human being, to a wooden chair, a plastic plate, a mobile phone, a dog, a termite, a mountain, a planet, water, soil and so on.

Standard Model of Elementary Particles



Why do Scientists Study Fundamental Particles?

- To understand the laws that shape our universe, how they manifest their will, and why things are the way they are.
- Scientists are so keen on studying neutrinos (not the same as neutrons), which are also a type of fundamental particle. Fundamental means that neutrinos, like electrons, protons and neutrons cannot be broken down further into smaller particles.

Neutrinos:

- A neutrino is a subatomic particle that is very similar to an electron, but has no electrical charge and a very small mass, which might even be zero.

- Neutrinos are the second most abundant particles after the photons in the universe.
- They have very little interaction with matter; however, they are incredibly difficult to detect, this is because they do not carry a charge.
- Neutrinos **belong to the family of particles called leptons**, and there are **three types of neutrino**, i.e. electron-neutrino, muon-neutrino, and tau-neutrino.
- One way of detecting neutrinos is in water or ice, where neutrinos leave a flash of light or a line of bubbles when they interact. To capture these signs, scientists have to build large detectors, an underwater telescope such as the GVD is designed to detect high-energy neutrinos that may have come from the Earth's core, or could have been produced during nuclear reactions in the Sun.

BIG BANG MODEL

The model describes how the universe expanded from an initial state of high density and temperature, and offers a comprehensive explanation for a broad range of observed phenomena, including the abundance of light elements the cosmic microwave background (CMB), radiation and large-scale structure.

ICAR-IVRI TRANSFERS TECHNOLOGY - CSF & SHEEP POX VACCINE THROUGH AGRINNOVATE

The ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh transferred the Technology - CSF & Sheep Pox Vaccines to M/s Hester Biosciences through Agrinnovate India Limited.

About:

- The Classical Swine Fever (CSF) is an important **disease of pigs that causes 100% mortality**.
- It also known as **Hog cholera or Pig Plague**.
- Swine fever **causes fever, skin lesions, convulsions, splenic Infarctions** and usually (particularly in young animals) **death within 15 days**.
- The infectious agent responsible is a virus CSFV (previously called hog cholera virus) of the genus **Pestivirus** in the family **Flaviviridae** that cause bovine viral diarrhoea and border disease.
- The disease is **endemic** in much of **Asia, Central and South America, and parts of Europe and Africa**.

Classical Swine Fever Vaccine:

- The disease is controlled by a **lapinized CSF vaccine** (Weybridge Strain, U.K.) produced by killing large numbers of rabbits.

- To avoid this, the ICAR-IVRI earlier developed a Cell Culture CSF Vaccine using the **Lapinized Vaccine Virus** from foreign strain.
- The vaccine has been found to induce protective immunity from day 14 of the Vaccination till 18 Months.

Sheep Pox:

- **Sheep pox** is a highly contagious disease of sheep caused by a poxvirus.
- **Sheep pox virus (SPV)** is the most severe of all the animal pox diseases and can result in some of the most significant economic consequences due to poor wool and leather quality.
- The disease is characterized by **high fever**, and symptoms of pneumonia and acute enteritis. **Skin lesions** appear particularly in parts free from wool, notably around the eyes, inner side of the thigh, udder and under surface of the tail.
- The internal organs such as trachea, lungs, kidneys and intestines are also affected.
- The disease results in emaciation and, as already mentioned, frequent deaths of affected animals.
- It causes a **mortality of 20 to 50 per cent in animals below the age of 6 months**, and causes damage to the wool and skin in adults.
- The disease **is transmissible to in contact goats but not to other species of animals**. It, however, **spreads slowly**.

Sheep Pox Vaccine:

- A live attenuated Sheep Pox Vaccine **using indigenous strain** was developed by **ICAR-IVRI** for preventive vaccination in the sheep population.
- The developed Vaccine uses indigenous Sheep Pox Virus **Strain [SPPV Srin 38/00]** and is adapted to grow in the Vero cell line which makes the Vaccine production to be easily scalable.
- The Vaccine is innocuous, safe, potent, and immunogenic [efficacious] for sheep **aged more than six months of age**.
- It protects the Vaccinated animals for a **period of 40 months**.

Way Forward:

- These vaccines are **the first** that have been developed within the country by using **locally isolated strains**, a step towards **making India self-sufficient, Atmanirbhar, for the country's requirement of Classical Swine Fever Vaccine and Sheep Pox Vaccine**.
- The **agreements were signed on 26 March 2021**, the technologies were developed by **ICAR-IVRI** and the commercialization of the technologies was facilitated by **Agrinnovate India**, a company owned by Department of Agricultural, Research & Education (DARE), Ministry of Agriculture, Government of India.

- Both the vaccines have been extensively **tested by IVRI for safety and potency** and have been found **to provide 100% protection**.
- It is Hester's endeavour **to produce good quality vaccines, at low cost** in order to enable the immunisation of animals against these diseases.
- The vaccines hope to prevent economic losses in swine and sheep farming in India.

WHO: GLOBAL DIABETES COMPACT (GDC)

The World Health Organization (WHO) launched a Global Diabetes Compact to better fight the diabetes while marking the centenary of the insulin discovery.

About:

- **This initiative launched** at the Global Diabetes Summit. WHO and the government of Canada Co-hosted the summit with the support of the University of Toronto.
- The Global Diabetes Compact has the **vision of reducing the risk of diabetes**, and ensuring that all people who are diagnosed with diabetes have **access to equitable, comprehensive, affordable and quality treatment and care**.
- It will set standards for tackling the diseases in the form of 'global coverage targets' for ensuring a wider reach of diabetes care.
- It aims **to unite key stakeholders** from the public and private sectors, and, critically, people who live with diabetes, around a common agenda, to generate new momentum and co-create solutions.
- It will also **support the prevention of type 2 diabetes** from obesity, unhealthy diet and physical inactivity.
- It aims to ensure care during humanitarian emergencies.

Need of Global Diabetes Compact:

- People with Diabetes have a higher risk of severe COVID-19 disease and death.
- Delays in diagnosis of diabetes may result in more advanced disease and complications.
- Delayed, Incomplete or interrupted therapy (treatment, rehabilitation and palliative care) for diabetes can lead to declines in health.
- The number of people with diabetes quadrupled in the last 40 years. It is also the **only major non-communicable disease** for which the risk of dying early is going up rather than down.
- About half of all adults with type 2 diabetes remain undiagnosed. And 50% of people with type 2 diabetes don't get the insulin they need.

Diabetes:

- **Diabetes** is a Non-Communicable Disease (NCD) that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose) or when the body cannot effectively use the insulin it produces

Classification of Diabetes:

- **Type 1 Diabetes:** It occurs when a person's body doesn't make insulin, as the immune system attacks and destroys the cells in the pancreas that make insulin.
 - ♦ It is usually diagnosed in children and young adults, although it can appear at any age. So, it is known as **juvenile diabetes**.
 - ♦ People with type 1 diabetes need to take insulin every day to stay alive. So, it is known as **insulin-dependent** diabetes.
- **Type 2 Diabetes:** It is the most common type of diabetes that occurs when a person's body does not make or use insulin well. This is called insulin resistance. The main reason for the occurrence of type 2 diabetes is due to obesity and lack of exercise.
 - ♦ **Gestational diabetes:** It develops in some pregnant women. Most of the time, this type of diabetes goes away after the baby is born. However, if one has gestational diabetes, they have a greater chance of developing type 2 diabetes later in life.

DIABETES IN INDIA

One in six people with **diabetes** in the world is from **India**. The numbers place the country among the top 10 countries for people with **diabetes**, coming in **at number two** with an estimated 77 million **diabetics**. **China** leads the list with over 116 million **diabetics**.

India's Initiative:

- The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) was launched in 2010, to provide support for diagnosis and cost-effective treatment at various levels of health care.

RESPOND PROGRAMME: ISRO TO SUPPORT EIGHT JOINT RESEARCH PROJECTS OF IIT DELHI

Recently, ISRO announced that it will support eight joint research projects mooted by the Space Technology Cell (STC), IIT-Delhi.

About:

- Indian Space Research Organisation (ISRO) started the RESPOND (Research Sponsored) programme in the 1970s, with the objective of encouraging academia to participate and contribute in various Space related research activities.

- The main objectives of the RESPOND Programme are to establish strong links with premiere academic institutions in the country to carry out research and developmental projects which are of relevance to Space and derive useful outputs of such R&D to support ISRO programmes.
- **RESPOND** programme aims to enhance academic base, generate human resources and infrastructure at the academic institutes **to support the Indian Space programme**.
- Under RESPOND, projects in the advanced areas of relevance to Space programme are encouraged to be taken up by premiere universities/academic institutions.
- ISRO helps these institutions to establish the necessary technical facilities **and** also provide fellowships to researchers to work **on cutting edge research topics**.
- Research proposals are Supported by ISRO in the areas of relevance to the space programme. Some of the broad areas are mentioned below:
 - ♦ Space Science
 - ♦ Space technology
 - ♦ Space Application

Space Technology Cells:

- STC's aim to strengthen the research collaboration between the two organisations and to carry out focused research projects in the space technology domain.
- ISRO has also set up Space Technology Cells at premiere institutions like Indian Institutes of Technology (IITs); Indian Institute of Science (IISc) and Joint Research Programme (JRP) with Savitribai Phule Pune University (SPPU) to carry out research activities in the areas of space technology and applications.
- These STCs and JRP are guided by Joint Policy Committees (JPC) chaired by Director/Vice Chancellor of the respective institution and with members from ISRO/DOS (Senior Scientists/Engineers) & the respective institution.
- The joint policy committee, duly assisted by technical/ scientific committee at nine ISRO-STC cells in IITs and IISc, reviews and suitable proposals are approved for taking up research.

Eight Joint Research Projects:

- ISRO will support eight joint research projects mooted by the Space Technology Cell (STC), IIT-Delhi as follows:
 - ♦ Developing a system for drought and flood forecasting and understanding land-atmosphere interactions.
 - ♦ To understand the plasma dynamics in electrode-less thrusters, which are used for electric propulsion and have a longer lifespan than their electrode-based counterparts. Electric propulsion schemes exhibit high fuel efficiency and lower thrust than the chemical propulsion schemes.
 - ♦ Indigenous Sensor based Real Time Flood Warning Smart System.

- ♦ Real-time prediction of the vulnerability of the Indian coasts to tropical cyclones through satellite observations well in advance to minimize damages wreaked by a cyclone.
- ♦ Designing Speciality Glasses Employing Machine Learning and Meta-Heuristic Optimization.

ATAL INNOVATION MISSION - PRIME

Atal Innovation Mission of NITI Aayog has recently launched PRIME, i.e., Program for Research in Innovation and Entrepreneurship, a programme to promote and support science-based deep-tech startups & ventures across India.

About:

- It is an initiative of Atal Innovation Mission, NITI Aayog.
- AIM has joined hands with Bill & Melinda Gates Foundation (BMGF) to launch this nationwide programme.
- It will be implemented by Venture Center - a non-profit technology business incubator.
- The AIM-PRIME program is aimed at promoting science based, deep technology ideas to market through training and guidance over a period of 12 months.
- **Objective:** To enable translation of science-based deep tech research to innovation that enables market ready entrepreneurship drawing from national and global best practices.
- **Target Audience:** Technology developers and incubations managers.
- **Focus Areas:** Science-based, knowledge-intensive, deep technology entrepreneurship.
- **Duration:** 12 months
- Programme includes in itself various class room sessions along with one to mentoring, students will be given a chance to work on projects which will be a guided effort so that it can be launched in the market, if the project is upto that mark.
- A library access will be given to students to get mentored from one of the best experts in their field, globally.
- Eligibility Criteria to be included in the Programme:
 - ♦ Applicant shall be a startup or an incubator.
 - ♦ Each applicant will nominate preferably 2 participants.
 - ♦ All participants shall be Indian citizens.
- The first phase of the programme is open to technology developers (early-stage deep tech start-ups, and scientists/ engineers/clinicians) with strong science-based deep tech business ideas.
- The programme is also open to CEOs and Senior incubation managers of AIM Funded Atal Incubation Centres that are supporting deep tech entrepreneurs.



Objectives of AIM

- To create umbrella structure to oversee innovation ecosystem of the country
- To provide platform and collaboration opportunities for different stakeholders
- To study and suggest best and novel practices to be adopted by different stakeholders in the innovation chain
- To provide policy inputs to NITI Aayog and various Government departments and organizations
- To create awareness and provide knowledge inputs in creating innovation challenges and funding mechanism to government and
- To develop new programmes and policies for fostering innovation in different sector of economy.

Way Forward:

- Deep technology is an outcome of very intense research and development (R&D) with high knowledge content. Consequently, the entrepreneurial journey emphasizes different aspects and requires a different approach to navigating the de-risking process and bringing such ideas to market. AIM has been at the forefront of promoting innovation and entrepreneurship throughout the nation under its various programs.

ATAL INNOVATION MISSION

AIM:

- Atal Innovation Mission, a flagship initiative set up by NITI Aayog.
- Govt's initiative to promote a culture of innovation and entrepreneurship in the country.
- setup in 2016
- AIM has taken a holistic approach to ensure creation of a problem-solving innovative mindset in schools creating an ecosystem of entrepreneurship in universities, research institutions, private and MSME sector.

Venture Center:

- A non-profit technology business incubator hosted by the Council Of Scientific And Industrial Research-National Chemical Laboratory (CSIR-NCL).

BRUCELLOSIS DISEASE

Kerala launched preventive measures after a few cases of Brucellosis. It started spreading in Jersey Farm of Vithura in Kerala.

About:

- Brucellosis is a bacterial infection, caused by **bacteria of Brucellus genus**.
- It is also termed as Malta Fever or Mediterranean Fever.
- It is a type of zoonotic infection, i.e., it spreads from animals to people.
- Person-to-person transmission is rare.
- Humans generally acquire the disease through direct contact with infected animals, by eating or drinking contaminated animal products or by inhaling airborne agents.
- This bacterium especially affects cattle, sheep, goat, dogs etc.
- Most commonly, people are infected by eating raw or unpasteurized dairy products. According to the WHO, most cases of the disease are **caused by ingesting unpasteurised milk** or cheese from infected goats or sheep.
- Sometimes, the bacteria that cause brucellosis can spread through the air or through direct contact with infected animals. Those who are working with the liquids (like blood or milk or urine) of an infected animal are most prone to the disease.
- It is endemic to India and causes severe effects to animals:
 - ♦ Infertility
 - ♦ Weak off springs
 - ♦ Reduced productivity
- Such effects eventually result in reduced economic growth of the dairy sector and thereby affecting the whole economy.

Symptoms:

- Signs and symptoms of brucellosis may include fever, joint pain and fatigue, chills, sweats, headache. Its symptoms may disappear for weeks or months and then return. The infection can usually be treated with antibiotics like rifampin and doxycycline.
- Some people have chronic brucellosis and experience symptoms for years, even after treatment. Long-term signs and symptoms may include fatigue, recurrent fevers, arthritis, inflammation of the heart (endocarditis) and spondylitis — an inflammatory arthritis that affects the spine and nearby joints.
- The **US Centers for Disease Control and Prevention** states that person-to-person transmission of brucellosis is **"extremely rare"** but some symptoms may reoccur or never go away.

Prevention:

- To control the disease, the **WHO recommends the vaccination** of cattle and, in some cases, testing and culling.
- Some precautions that should be taken to avoid transfer of disease are:
 - ♦ Use Gloves and masks (so that one does not inhale contaminated air) when working with such animals
 - ♦ Vaccinate the animals being used domestically.

- ♦ Eat properly cooked meat.
- ♦ Pasteurized products should also be heated properly before consuming.

Way Forward:

- Growth of animal industries and urbanization, in India, when crossed with absence of hygienic measures in animal and food handling makes such diseases more dangerous.
- Proper implementation of the "National Control Programme on Brucellosis".
- Department of Biotechnology (DBT), facilitated Transfer of Technology of novel Brucella vaccine viz. **Brucella abortus S19 delta per vaccine**. This vaccine was developed by **ICAR-Indian Veterinary Research Institute (ICAR-IVRI)**. This vaccine can play an important role in the National Control Programme on Brucellosis.

FACTS FOR PRELIMS**Zoonotic Diseases:**

- They are those diseases which are spread from animals to humans. They can be of bacterial origin, viral origin or parasitic origin.
- Corona is also an example of zoonotic disease.
- Hantavirus which started spreading in China in 2020 is also a type of zoonotic disease.

National Animal Disease Control Programme for FMD and Brucellosis:

- Flagship scheme launched in September 2019
- Launched for Foot and Mouth disease and Brucellosis in cattle majorly.
- Vaccinating 100% cattle, buffalo, sheep, goat and pig population for FMD
- 100% bovine female calves of 4-8 months of age for brucellosis
- Total funding of Rs.13, 343.00 crore for five years (2019-20 to 2023-24).
- Under the Department of Animal Husbandry and Dairying (DAHD).

Indian Council of Agricultural Research (ICAR):

- Established in 1929
- It is a registered society under the Societies Registration Act, 1860.
- **Headquarters:** New Delhi
- It is an autonomous organization under the Department of Agricultural Research and Education (DARE), **Ministry of Agriculture and Farmers Welfare**.

ICAR-Indian Veterinary Research Institute (ICAR- IVRI):

- It is located at Izatnagar, Bareilly in Uttar Pradesh.
- Established in 1889.

HARLEQUIN ICHTHYOSIS: A RARE DISEASE

A baby is born in Odisha with Harlequin Ichthyosis rare disease.

About:

- This birth has shocked many of the doctors because chances of surviving are very less if a baby is born with this syndrome.
- Harlequin Ichthyosis literally means one born with dry, scaly 'fish' like skin, in greek language "ikthus" (from which Ichthyosis is derived) means "fish".
- The baby is born with very thick and hard skin which has large diamond-shaped plates separated by deep cracks (known as fissures).
- All the organs of the newborn are affected by the rare genetic disorder.
- In 2016, in Maharashtra, the first case of a newborn suffering with Harlequin Ichthyosis was seen although the baby succumbed to the disease.
- This disease affects 1 in three million newborns approximately by inheriting a mutated gene from the parents, as per the studies. The survival chance of such newborns is very thin but with better and still improving scenarios of natal-care, it is possible to save the baby.

Cause:

- Study says the disease is caused by mutations in the **ABCA12 gene protein** which plays a vital role in transporting fats in the cells which make up the outermost layer of the skin.
 - ♦ Severe mutations in the gene lead to the absence or partial production of the ABCA12 protein.
 - ♦ This results in lack of lipid transport and as a result, the skin development is affected by varying degrees according to the severity of the mutation.

Effects of disease:

- The facial features mouth, eyes and ears are also deformed. It limits the movement of the arms and legs.
- Restricted movement of the chest can lead to breathing difficulties.
- The skin normally forms a protective barrier between the body and its surrounding environment. The skin abnormalities associated with harlequin ichthyosis disrupt this barrier, making it more difficult for affected infants to control water loss, regulate their body temperature, and fight infections.
 - ♦ Infants with harlequin ichthyosis often experience an excessive loss of fluids (dehydration) and develop life-threatening infections in the first few weeks of life.

GENETIC TRANSFER

- The condition is inherited in an autosomal recessive pattern.
- This means that the parents of the baby with an autosomal recessive condition each carry one copy of the mutated gene but they do not show signs and symptoms of the condition.
- Thus, both parents have one mutated gene (**recessive gene**) and one normal gene (dominant gene) for the condition.

Way Forward:

- There are over 7000 rare diseases globally and about 450 of them have been reported in India. About 700 treatments are approved by the US FDA, EU's EMA or Japan's PMDA. Most of them are expensive and unaffordable to the general population.
- India, with an estimate of over 70 million people affected with rare diseases had remained without a public health policy to address challenges faced by the rare diseases community.
- Due to numerous efforts, court decisions, grass-roots awareness campaigns and other initiatives around the nation in the last four years, **India now has a central policy around Rare Disease.**
- The Gol RD policy takes a two-pronged approach one short-term focused and another keeping a long-term vision.
 - ♦ The short-term sets aside a central corpus fund for rare diseases treatment and advises state governments to set aside a matching fund as health is still a state level issue.
- **There is a strong need to have a global definition for the "Rare Disease"** and for the world to come together to work for inventing treatments for rare diseases. All research institutions work together and gather knowledge about new emerging and old recurring such diseases.

B.1.617 VARIANT AND ITS EFFECTS IN INDIA

Double mutant corona virus is officially named as B.1.617 and is being held responsible for this second wave of the pandemic although nothing can be said with finality.

About:

- Double mutation happens when two mutated variants of a virus come together to form a third variant.
- This B.1.617 variant of SARS-COV-2 has 2 mutations i.e, E484Q, L452R. They are present in a number of coronaviruses but in India's strain they are present together making the virus more severe than the strain in other countries.

- These mutations are found in virus' spike protein which helps the virus to bind itself to cells in the human body and become a channel to enter into the host cell.
- B.1.617 was present in 61% of cases in Maharashtra in this wave.
- E484Q is similar to E484K found in the strain of the coronavirus in the United Kingdom and South Africa.
- L452R is spreading like fire in California. Its characteristic is that it increases the binding power of proteins with ACE2 receptors in human cells and can also make coronavirus resistant to T-cells. T cells are important to fight against the virus. It increases the viral replication manifolds.

Spread of double mutant coronavirus:

- A virus keeps mutating as it spreads, and like others, the novel coronavirus keeps changing in small ways as it passes from one person to another.
- The constituent mutated strains E484Q and L452R were found to be highly infective with high transmission rates. Thus, they make B.1.617 more infectious and deadly.
- The new variant could also increase infection rates and easily surpass immune defenses.
- The spread of B.1.617 started from Maharashtra specially from Amravati, Nagpur, Wardha, Pune and some other districts. Most accurate results can be brought only after combining the clinical data with genome sequence and finding out the result.
- Whilst, the number of cases being high had shown a great impact on the health infrastructure of the country and the strain spreads easily to the family and people in close contact with the carrier but many are asymptomatic cases.
- However, the National Centre for Disease Control (NCDC) has stated that from Maharashtra very few samples have been sequenced till now and a final statement cannot be given yet but the Central Government mentioned that 15-20% samples of the state had this strain.
- The strain of double mutant virus is now spreading to other countries as well but 70% cases are present in India followed by 23% in the United Kingdom and 1-2% in Australia and Singapore. This information is given by GISAID (Global Initiative on Sharing Avian Influenza Data) where countries throughout the world share their data.

Way Forward:

- The double mutation could allow the virus to escape the body's immune system, making itself more resistant to antibodies. There is also a possibility that it can reinfect patients who have already recovered from Covid-19. In some cases, the virus might also be able to defend itself against the vaccines currently in use.

- Thus, a link between surge and variant is unquestionable but a lot more genome sequences of virus in infected people is required to come to a conclusion. It can be stated that there is a dominance of this lineage of coronavirus but not the sole cause.
- Therefore, the most reliable outcomes can be achieved only after combining the clinical data with genome sequence and finding out the result.
- At the same time, capacity building and development of infrastructure for genome sequencing is the need of hour so that timely interventions can be taken for future variants of such viruses.

FACT FOR PRELIMS

GISAID:

- Founded in 2008 by WHO
- A platform to share genome sequence
- It is a publicly accessible database designed for scientists by scientists.

NCDC:

- Under Indian Directorate General of Health, Ministry of Health and Family Welfare
- Established in 1963
- Research in epidemiology
- Control of communicable disease
- Reorganize the activities of Malaria Institute of India

GAMMA RAY EMITTING NARROW LINE SEYFERT (NLS 1) GALAXY

Recently, Researchers from ARIES in collaboration with researchers of other institutes have found the farthest gamma-ray emitting galaxy, NLS 1.

About:

- NSL 1 is the farthest galaxy that emits Gamma rays, around 31 billion light-years away. A light-year is the distance light travels in one Earth year.
- It was formed when the Universe was 4.7 billion years old. The current age of the Universe is 13.8 billion years.
- It is a unique class of AGN fuelled by a black hole of low mass and hosted in a spiral galaxy.
- Subaru Telescope, the largest ground-based telescope of 8.2 m, was used in this discovery. It is a Japanese telescope, located in Hawaii, USA.
- Edwin Hubble's Expanding Theory of Universe came into use in this discovery.

- **According to Hubble's Expanding Theory of Universe**, galaxies are receding away from us with a velocity that is proportional to their distance from us. The more distant galaxies recede faster than nearby galaxies.

Discovery:

- **Active Galactic Nuclei (AGN)** is the most powerful, long-lived, and constant source of light in the Universe. Most of the galaxies have super massive black holes at the centre.
- **Normal black holes** are formed by the death of one star. Still, they are ten times the mass of the sun.
- **Super massive black holes** are a million times mass of the sun. They are found at the centre of a galaxy, thereby making it bright in the middle. These regions of high luminosity are called AGN. Those galaxies which home AGN are termed as Active galaxies. It emits a thousand times more energy than a normal galaxy.
- **These emissions are in form of:**
 1. Micro wavebands
 2. Radio wavebands
 3. Infrared bands
 4. Optical bands
 5. X-ray bands
 6. Ultraviolet bands
 7. Gamma bands

FACT FOR PRELIMS

- **Galaxy:** It is a vast island of stars, planets, gas, and dust in an ocean of space extending over millions of light-years and held together by gravity.
- **ARIES:**
 - ♦ Established in 1954
 - ♦ Under Department of Science and Tech, Government of India
 - ♦ At Manora Peak, Nainital, Uttarakhand
 - ♦ Used to develop facilities for modern Astrophysical Research in stellar, solar, theoretical branches.
 - ♦ It is uniquely positioned at 79degree East.
- **Red Shift:** Movement of spectral lines towards longer wavelengths. It tells about the expansion of the universe.
- **SDSS:** It is a multi-spectral imaging and spectroscopic Red Shift Survey. It is in use for the last 20 years and has created the most detailed 3D map of the Universe.
- **AGN is powered by Black-holes** which in turn produces powerful relativistic jets. These are the source of particles in the universe travelling at light speed. They are hosted in a huge elliptical galaxy. The concept of the formation of jets was questioned when detection of NSL 1 happened.

- NSL 1 is a unique class of AGN powered by a black hole of low mass and hosted in a spiral galaxy. Other classes of AGN were discovered 4 decades ago.
- Earlier it was opined that because NSL 1 hosted low mass black holes so can't produce relativistic jets and have Red Shift less than 1. With detection of Gamma rays emission from this, that belief was shattered as Red Shift was more than 1 (at 1.34).

Way Forward:

- This discovery has opened ways to know more about the origin of the Universe. Now, the scientists need to explore the possibilities of finding other gamma-ray emitting NLS 1 galaxies at even larger redshifts on Devasthal Optical Telescope (DOT) at ARIES.

POSSIBILITY OF COVID-19 RE-INFECTION

According to ICMR, out of 1300 individuals who were tested positive twice, only 4.5% are cases of re-infection.

About:

- Of these 1300 individuals studied by Indian Council of Medical Research (ICMR), 58 are being considered as cases of re-infection. They got tested positive in a gap of 102 days and had negative test results in between the span of 102 days.
- Although it is not yet clear, whether the person becomes immune to SARS COV 2 virus once a person is infected by it. This possibility of reinfection has to be considered and thoroughly studied before hoping to make a 100% curable vaccine for COVID.
- For being 100% sure of the cases of reinfection (that they are rather the case of reinfection and not persistent viral shedding), scientists are relying on Genome Sequence analysis of the virus. Mutations of viruses are very fast. So if both the variations of 'first time positive' and 'again positive' are the same then it would be safe to construe that it is a reinfection.
 - ♦ **Persistent Viral Shedding** is where a person keeps carrying the virus in very low amounts after he/she has recovered from it. This can go on upto 3 months before the virus completely flushes out of the body.
- **Challenges:** However, the task of Genome Analysis is very complex and requires a sample of the same person to be assessed twice, for each time the person was positive. Along with that, it is a very time-consuming process.
 - ♦ As the number of cases are so high and increasing, the analysis part becomes tough. When a person gets positive for the second time and samples are sent for testing, there are generally no previous samples present to compare it with.

Study by ICMR:

- ICMR did not follow the above-mentioned procedure because of the lack of samples. Instead, they chose samples which have been tested positive at least after a gap of 102 days.
 - Reason being, Persistent Viral Shedding remains in an infected body only upto 90 days as stated by Centres for Disease Control (CDC), USA.
- Although scientists concluded that it still cannot be stated as 100% case of reinfection because there is still room for changes after Genome Sequence Analysis. Also, they suggested a global consensus on definition for reinfection. The two conditions that should definitely be checked, according to them are:
 - Gap of at least 102 days between two positives
 - At least one negative test in this period.

KEY FACTS**ICMR:**

- Established in 1911, then it was known as Indian Research Fund Association (IRFA)
- HQ:** New Delhi
- Apex body in India for formulation, coordination and promotion of biomedical research
- One of the oldest medical research bodies in the world
- Under the Department of Health Services, Ministry of Health and Family Welfare.

SARS COV 2:

- Severe Acute Respiratory Syndrome.
- It is the name of the strain of COVID 19 virus.
- This strain has a genetic mutation in the "spike protein" through which humans get infected.

Way Forward:

- Most people who have had Covid-19 are protected from catching it again for at least six months, but elderly patients are more prone to reinfection, according to research published in The Lancet.
- The findings highlight the importance of measures to protect elderly people during the pandemic, such as enhanced social distancing and prioritization for vaccines, even for those who have recovered from Covid-19.
- The analysis also suggests that people who have had the virus should still be vaccinated, as natural protection – particularly among the elderly – cannot be relied upon.

THREE NEW INITIATIVES BY NIXI

Recently Ministry of Electronics and Information Technology (MeitY) has launched three new initiatives of National Internet Exchange of India (NIXI).

About:

- The Department of Telecommunication (DoT) mandated all Government organizations to transition to IPv6 by March 2020. Working on that goal, NIXI came up with three services which will boost the agenda of Digital India Mission.
- These services are launched to make India's internet future ready and to raise awareness about IPv6 protocol in the country. The services are:
 - Expert Panel 'IP Guru':** Internet Protocol (IP) Guru will comprise people from Government (DoT, MeitY) and private institutions. They will do this service free of cost. They will provide support to Indian organizations and other end customers in easy transition from IPv4 to IPv6. They will also help in finding and hiring agencies which provide technical support in this transition.
 - NIXI Academy:** It is an educational platform which will provide education to people regardless of their background (technical or non-technical), about IPv6. Here, mass-training will also be given about the technology. Initially, they are starting with beginner training which is free of cost. Later, chargeable advanced courses will also be included. At the end of training an exam will be there, successful candidates will get a certificate from NIXI which will be useful in job applications. This academy will prove useful in:
 - Understanding the best practices of networking
 - Principles and technologies
 - Managing internet resources
 - Use internet technologies effectively

- The protocol in use earlier was IPv4. It was based on a 32-bit address system and could accommodate only 4.3 billion devices. With the rising number of devices being currently used, an upgrade was long due.
- IPv6 adoption in India, with respect to global scenario, is already highest. It is also called IPng (Internet Protocol next generation). It works on a 128 bit address system.

- NIXI IP Index:** A new index introduced to showcase the adoption rate of IPv6 in the country. It will also provide comparison with other countries. Along with the traffic for IPv6.

Characteristics of IPv6:

- More secure and Efficient
- Mobile friendly
- Easy to use with 5G networks
- Better traceability and interaction
- With growth in the Internet of Things (IoT), IPv6 will prove more useful.

Benefits:

- Its introduction will help the country in retaining the strong hold in software services globally.
- Cyber-attacks and other such threats can be reduced with high encryption.
- Ease and help in the surveillance infrastructure of the country.
- Give a boost to the digital economy.

NIXI

- It is a non profit organization established under Section 8 of Companies Act 2013.
- Established in 2003.
- Its objective is to enhance internet infrastructure in the country so that most things go digital.
- **HQ:** New Delhi
- **Internet Protocol (IP)** is used to identify devices across the internet so that locating them remains easy.
- **IPv6** was developed by the Internet Engineering Task Force (IETF). It is the most recent protocol version in the communication system. It provides the identity and location of the devices connected to the network of the internet.

NASA'S INGENUITY MARS HELICOPTER

Recently, NASA has flown robot-helicopter on Mars. It flew for less than a minute but the world is celebrating its first powered, controlled flight on a different planet.

About:

- **Aim of Ingenuity:** Demonstrate powered flight in Martian atmosphere.
 - ♦ "Wright brothers showed the possibility of powered flight on Earth's atmosphere. They are trying to achieve the same on Mars".
 - ♦ It was launched in July 2020, with NASA's Perseverance Rover to Mars.
- Its special characteristic is its four specially made carbon-fiber blades, arranged into 2 rotors that spin in opposite directions at around 2400 RPM (Rotation Per Minute) with an overall weight of 1.8Kgs.
- It is the first aircraft to have had controlled flight on a different planet. It is worth celebrating because the environment of Mars is very thin, thereby making it tough for lifting any aircraft. Ingenuity was made very light with very fast-moving blades to fight the conditions on Mars to easily fly.
- Considering it an extreme experiment, various small milestones were set for Ingenuity:

- ♦ Surviving launch from Cape Canaveral and landing on Red planet
- ♦ Safely deploying to surface from Perseverance's belly
- ♦ Autonomously keeping warm through Martian nights where temperature goes up to -90 degree Celsius.
- ♦ Autonomously charging itself from its solar panel.
- ♦ First flight attempt
- ♦ If the first one gets successful then four more attempts will be taken to better understand.
- It is a separate experiment from Perseverance. Both their objectives are different. Perseverance along with Ingenuity landed at Jezero Crater of Mars in February 2021.

SPACE MISSION

Mariner 4,6,7,9	NASA
Mars 2,3,5	Soviet Union (former Russia)
Viking	NASA
Phobos 2	Soviet Union
Mars Global Surveyor	NASA
Mars Pathfinder	NASA
Mars Odyssey	NASA
Mars Express *(only orbiter operational)	ESA (European Union)
Spirit	NASA
Opportunity	NASA
Rosetta	ESA (European Union)
Reconnaissance	NASA
Phoenix	NASA
Dawn	NASA
Curiosity	NASA
Mars Orbiter Mission	ISRO
Hope	UAE
Tianwen	China
Perseverance	NASA

PERSEVERANCE MISSION

- Launched on 30th July, 2020
 - Landed on 18th Feb, 2021
 - **Aim:** To understand the geology of Mars and gather knowledge about signs for ancient life there.
 - It is to stay there for at least 1 Mars year i.e., 687 Earth days.
 - Collect rock and soil samples
- Jezero Crater:** It is an ancient river delta that has rocks and minerals that could only form in water.



ETHICS

ETHICAL CHALLENGES AND HUMAN BEHAVIOR DURING PANDEMIC

Amid Second wave of COVID-19 pandemic India is facing ethical challenges in human behavior.

*"No matter how much falls on us, we keep plowing ahead.
That's the only way to keep the roads clear."*

—Greg Kincaid

About:

- Currently, India is facing second wave of COVID-19 pandemic due to a new variant of Corona Virus.
- The new variant has been termed as 'Double Mutant variant' by India with a scientific name 'B.1.617'
- The variant has been declared as a "Global Variant of Concern" by World Health Organization.
- The devastation which has been caused by the Virus has led to ethical concerns in human behavior.
- **Change in human behavior has been caused by following factors:**
 - ♦ **Uncertainty:** The pandemic has caused uncertainty among the masses despite advent of vaccines and mass vaccination drives. Failure of vaccines in some of the cases caused frustration and uncertainty about future and life.
 - ♦ **Rumour Mongering:** Due to social media platforms, rumors have been doing rounds and creating more fear among people about ineffectiveness of vaccines, death of person or a group of person has resulted in anxiety in society.
 - ♦ **Shortage of Medicines and life support system:** Due to surge of COVID-19 positive cases across the country has caused shortage of ventilators, medicines, oxygen supported hospital beds and essential medical equipments.
 - ♦ This has immensely contributed in surge in fatality rate across the country.
 - ♦ **Human Misery:** Death of thousands of people on daily basis and sufferings of people across the country due to lack of oxygen and other medical support has led to resentment across the country towards the political class.
 - ♦ **Economic Deprivation and mass migration:** Loss of livelihoods due to pandemic has led to economic deprivation of people across the country. This has led to increase in hunger and related problems in the country.
- **Mismanagement:** Lack of proper management across hospital has resulted in increase in human sufferings.

- Redistribution of essential medical necessities such as Liquefied Medical Oxygen (LMO) was halted due to technicalities in governance.
- The eastern part of India which had ample availability of medical oxygen due to large numbers of steel plants could not redistribute it to other parts in the beginning.
- Further, lack of management during mass migration of people across the country due to loss of livelihood has led to spread of COVID-19 pandemic to the rural areas of the country.
- Further, many people marched on foot from cities towards their native places during lock down which led to number of deaths.

Ethical Issues during pandemic:

- **Hoarding and black marketing of essential medical commodities:**

The second wave of pandemic has demonstrated new insights into behavior of human beings. Hoarding and black marketing of life saving drugs such as Remdesivir, Liquid Medical Oxygens, Oximeters, and Oxygen concentrators were rampant.
- **Overpricing:** The pandemic has also seen in surge of prices of different commodities. The prices of masks have gone up by 1.5 times while different commodities such as hand sanitizers, Liquid Medical Oxygens and essential medicines have been overpriced due to shortage.
- Even essential commodities such as food and vegetable prices picked up during this period.
- **Centralising Powers:** The centre had invoked the Epidemic Diseases Act and the Disaster Management Act, centralising the powers to deal with the pandemic.
 - ♦ However, state consultation is a legislative mandate cast upon the centre under these acts and binding COVID-19 guidelines are being issued by the Centre to the States.
- **Case of Inconvenient Federalism:** On account of the Central government being the sole agency to regulate the production and distribution of the vaccine and oxygen, it was the exclusive responsibility of the centre to ensure adequate and judicious distribution.
 - ♦ However, many states are complaining of discrimination on distribution of the vaccination, supply of medicines, availability of oxygen, etc.
 - ♦ Moreover, the new vaccination policy, in the garb of relaxing controls, seeks to pass the burden on to the states as it makes the states responsible to procure vaccines directly from the producers and allows for differential price-setting.

- ♦ This would not only add to the financial burdens of the states that are already squeezed but also could give rise to conflicts between different states.

Ethical Dilemmas during pandemic:

- **Vaccine Nationalism Vs International brotherhood:** Experts around the globe have suggested vaccinating frontline workers such as doctors, medical staffs, and municipality staffs etc.
- But developed countries of the world including world leaders such as USA and UK have procured the stocks of vaccines which are double of their total population.
- This Vaccine nationalism has led to serious gap of accessing vaccines by developed countries and under developed countries.
- **Profit vs Compassion:** Due to increase in prices of essential drugs and other commodities, poor people are unable access these commodities. Rich people are making more and more profits out of the pandemic instead of showing compassion to these people.
- **Religion vs Safety:** During Pandemic religious congregation across all religions have not stopped.
- The events like Kumbh among Hindus, Markaz Gathering among Muslims and gathering during Prakash parva in Sikhism has acted as super spreaders of the virus.
- This has devolved the new ethical dilemma between religion, belief and safety.
- **Sympathy Vs Professionalism:** Pandemic has caused a surge in number of patients in hospitals across the country. Bad attitude and lack of sympathy has emerged as one of the major ethical dilemma among medical staffs and doctors.
- **VIP Culture Vs Equity:** There have been reports of VIP treatment which has been meted out to person close to government or having influence over administration during treatment.
- This has diluted the provision of equity in a democratic country like India and hence has diluted the fundamental right of right to equality while accessing public service.
- **Electoral Process during pandemic:** The second wave of pandemic is being seen as a result of elections in 5 states such as Bihar, West Bengal, Kerala, Tamil Nadu and Assam and one Union territory i.e. Puducherry.
 - ♦ Further, Panchayat Elections in Uttar Pradesh was held on directions of Supreme Court despite government's objection to it. These events along with rallies associated with them acted as a super spreader event causing pandemic to become more lethal.
- **Politics during pandemic:** Politicians from across the party in India are trying to take a political mileage of the current situation. These politicians are violating the fundamental norms of lockdown and roaming around with their supporters and gathering.

Way Forward:

- Pandemic has caused panic, anxiety and frustrations among masses which resulted in mismanagement and hooliganism.
- As a whole, the pandemic has caused large scale loss to human lives along with exposing degraded human values across the world.
 - ♦ **Public Messages:** Changing behaviours by correcting such misperceptions can be achieved by public messages reinforcing positive (for example, health-promoting) norms.
 - ♦ **Nudge Theory:** Another way to leverage the impact of norms falls under the general category of 'nudges', which influence behaviour through modification of choice architecture. For instance, a message with compelling social norms might say, 'the overwhelming majority of people in your community believe that everyone should stay home'.
 - ♦ **Fighting Fake News:** Fighting misinformation requires a preventative approach involving subtle prompts that nudge people to consider accuracy.
 - ♦ **Leadership:** Crises like the Covid-19 pandemic create an opportunity for leadership across groups of varying levels: families, workplaces, local communities and nations. Leadership can coordinate individuals and help them avoid behaviours that are no longer considered socially responsible.
- **Triaging and Monitoring the Patients:** The healthcare system is stepping up in as many ways as possible but it is also very important to monitor and trace those people who actually need hospitalisation, oxygen support and other hospital facilities.
 - ♦ Moreover, monitoring the people remotely who are in isolation at home is also very important so they can receive the right advice and can be looked after well at home.
 - ♦ Treating the symptomatic people with the same care and precautions as the people who might have covid regardless of RT-PCR tests

CASE STUDY ON MAHARASHTRA HEADING

- ATM Policy of Maharashtra: The situation of Maharashtra is grim due to the tsunami like rise in the cases.
- The situation in cities in Mumbai, Pune are showing for the last few days, a situation of plateauing but other places like Nasik and Nagpur are badly affected.
- **The state has adopted an ATM policy:**
 - ♦ A= Access the cases.
 - ♦ T= Triage or transfer the patients based on the risk profile, symptoms and the vulnerabilities of the individual.
 - ♦ M= Managing them appropriately, either at home, in institutional quarantine or in the hospitals.



CULTURE

MAHAVIR JAYANTI 2021

Recently Mahavir Jayanti was celebrated on 25th April.

About:

- As per the Gregorian Calendar, Mahavir Jayanti is celebrated in March or April and this year, it will be observed on 25 April.
- Mahavir Jayanti is the most important and auspicious **festival of the Jains** as it is **marked to celebrate the birth of Lord Mahavir**.
- Devotees commemorate this religious festival in loving memory of the 24th Tirthankara of Jainism, who was **the last spiritual leader**.
- On the special day, members of the **Jain community engage in charitable acts, prayers, pujas, and vratas**.
- Many devotees visit temples dedicated to Mahavir to offer prayers but this year due to the coronavirus pandemic it would not happen.

History:

- **Mahavira**, also known as **Vardhamana** was the 24th **Tirthankara** of Jainism. He was the **spiritual successor of the 23rd Tirthankara Parshvanatha**.
- Lord Mahavira was **named Vardhaman**, which **means "one who grows,"** because of the increased prosperity in the kingdom at the time of his birth.
- Mahavira was born in the early part of the 6th century BCE into a royal family in Bihar, India. His **mother's name was Trishala and his father's name was Siddhartha**. They were lay devotees of Parshvanatha.
- Mahavira abandoned all worldly possessions at the age of about 30 and left home in pursuit of spiritual awakening, becoming an ascetic.
- Mahavira practiced intense meditation and severe austerities for 12 and a half years, after which **he attained Kevala Gyan (omniscience)**.
- He preached for 30 years and attained Moksha (salvation) in the 6th century BCE, although the year varies by sect.
- According to traditional accounts, Mahavira achieved Kevala Jnana (omniscience, or infinite knowledge) under a Sala tree on the bank of the River Rijubalika near Jrimbhikagrama at age 43 after twelve years of rigorous penance.

The observance of Lord Mahavira:

- **Ahimsa (Non-Violence)** -- He wanted people to follow the path of non-violence.
- **Satya (Truth)**- He always believed in saying the truth and also practised to be truthful.
- **Asteya (Non-Stealing)** - He wanted people to be honest and not steal things.
- **Brahmacharya (chastity)** - He wanted followers to believe and not indulge in sensual pleasures.
- **Aparigraha (non-attachment)** - He wanted people to not get attached to non-material things.
- **The goal of these principles is to achieve spiritual peace, a better rebirth, or (ultimately) liberation.** According to Chakravarthi, these **teachings help improve a person's quality of life**.
- Mahavira is best remembered in the Indian traditions for his teaching **that ahimsa is the supreme moral virtue. He taught that ahimsa covers all living beings, and injuring any being in any form creates bad karma.**

130TH BIRTH ANNIVERSARY OF DR. B R AMBEDKAR

The nation celebrated the 130th birth anniversary of B R Ambedkar on 14th April 2021.

About:

- **Early life:** Ambedkar was born into a Mahar (dalit) caste, which were treated as untouchables and subjected to socio-economic discrimination.
- **'Equality Day':** Ambedkar struggled for equality throughout his life; hence his birthday is celebrated as 'Equality Day' in India.
- **Career:** He was a distinguished economist, active politician, eminent lawyer, labour leader, great parliamentarian, fine scholar, anthropologist, orator, etc.
 - Ambedkar was a prolific student, earning doctorates in economics from both Columbia University and the London School of Economics, gaining reputation as a scholar for his research in law, economics and political science.
- **Bharat Ratna:** In 1990, the Bharat Ratna, India's highest civilian award, was posthumously conferred upon Ambedkar.
- **Poona Pact**

- ♦ In 1932, the British colonial government announced the formation of a separate electorate for "Depressed Classes" in the Communal Award. Gandhi fiercely opposed a separate electorate for untouchables, saying he feared that such an arrangement would divide the Hindu community.
- ♦ On 25 September 1932, the agreement, known as the Poona Pact was signed between Ambedkar (on behalf of the depressed classes among Hindus) and Madan Mohan Malaviya (on behalf of the other Hindus). The agreement gave reserved seats for the depressed classes in the Provisional legislatures within the general electorate.
- ♦ Due to the pact the depressed class received 148 seats in the legislature instead of the 71, as allocated in the Communal Award proposed earlier by the colonial government under Prime Minister Ramsay MacDonald.
- **Political career**
 - ♦ He was British India's Minister of Labour, Chairman of the Constituent Drafting committee, independent India's first Minister of Law and Justice, and considered the chief architect of the Constitution of India.
 - ♦ In 1935, Ambedkar was appointed principal of the Government Law College, Bombay.
 - ♦ In 1936, Ambedkar founded the Independent Labour Party, which contested the 1937 Bombay election to the Central Legislative Assembly for the 13 reserved and 4 general seats, and secured 11 and 3 seats respectively.
 - ♦ Ambedkar published his book Annihilation of Caste.
 - ♦ Ambedkar served on the Defence Advisory Committee and the Viceroy's Executive Council as minister for labour.
- **Round Table Conferences:** He participated in all three Round Table Conferences.
- **Important Journals by him:** Mooknayak, Bahishkrit Bharat, Samatha, Janata.
- **Organisations he joined:** Bahishkrit Hitkarini Sabha, Independent Labor Party, Scheduled Castes Federation.
- **Birth:** He was born on 5th April 1908 at Chandwa near Arrah in Bihar into the Chamar caste.
- **His contributions and Political career:** He was a visionary leader who served the nation with distinction in various capacities.
 - ♦ He contributed greatly towards our country, as a freedom fighter, as a member of the Constituent Assembly and the **first Cabinet and as a Deputy PM.**
 - ♦ He worked to attain equality for untouchables, contributed to **Green Revolution** and **organized rural labour movement** in Bihar.
 - ♦ He was the **defence minister** of India during the India-Pakistan war of 1971.
 - ♦ He founded the **All-India Depressed Classes League in 1935** that worked towards equality for the 'untouchables'.
 - ♦ In 1946, he became the youngest minister in Jawaharlal Nehru's interim government, the first cabinet of India as a **Labour Minister** and also a member of the Constituent Assembly of India, where he ensured that social justice was enshrined in the Constitution.
- **World Record:** He holds a world record of being a parliamentarian for 50 years between 1936 and 1986.
- **Proficient in Sanskrit:** He was extremely proficient in Sanskrit and was invited to join Banaras Hindu University by the founder Madan Mohan Malviya.
- **Emergency:** Though he supported Prime Minister Indira Gandhi during the Emergency (1975–77), he left Congress in 1977 and joined the Janata Party alliance, along with his Congress for Democracy.

JALLIANWALA BAGH MASSACRE

Prime Minister paid tribute to the brave Indians who died in the Jallianwala Bagh massacre on April 13, 1919.

About:

- The Jallianwala Bagh massacre, in which several hundreds of people were killed on this day in 1919 as a result of indiscriminate firing by the colonial forces, completed 102 years.
- While the official figure released by the British claimed that a little over 350 people were killed in the massacre, the Congress party claimed that the number was as high as 1,000.

Here's what happened on April 13, 1919:

- **Date and Location:** The Jallianwala Bagh massacre, also known as the Amritsar massacre, took place on 13 April 1919, when Acting Brigadier-General Reginald Dyer ordered troops of the British Indian Army to fire their rifles into a crowd of unarmed Indian civilians in Jallianwala Bagh, Amritsar, Punjab, killing at least 379 people and injuring over 1,200

BABU JAGJIVAN RAM

Prime Minister paid tributes to freedom fighter and former Deputy Prime Minister Babu Jagjivan Ram on his 113th birth anniversary.

About:

- Jagjivan Ram, popularly known as Babuji, was one of India's greatest Dalit icons who dedicated his life for the betterment of the poor and downtrodden.

Key points:

other people.

- **Event:** The people, a majority of whom were Sikhs, had gathered in Jallianwala Bagh to celebrate Baisakhi and also to condemn the arrest and deportation of two freedom fighters, Satya Pal and Dr Saifuddin Kitchlew.
- **On Colonel Dyer's order:** The soldiers opened fire. The firing went on for about 10 minutes.
- **Noncooperation Movement:** The Jallianwalah Bagh massacre angered the Indian people and Mahatma Gandhi called the Non-cooperation Movement.
- **Punishment:** The only punishment that Dyer, who was lauded for his actions by some in Britain but criticised by the others, had to face was being removed from his post and denied promotion. He was also barred from being deployed in India further.
 - ♦ While many, including Sir Winston Churchill, then secretary of war, condemned General Dyer's actions, the House of the Lords lauded him and presented him with a sword having "Saviour of the Punjab" inscribed on it.
- **Formation of Hunter Commission:** On 14 October 1919, after orders issued by the Secretary of State for India, Edwin Montagu, the Government of India announced the formation of a committee of inquiry into the events in Punjab.
 - ♦ Referred to as the Disorders Inquiry Committee, it was later more widely known as the Hunter Commission.
 - ♦ The stated purpose of the commission was to "investigate the recent disturbances in Bombay, Delhi and Punjab, about their causes, and the measures taken to cope with them."

BACKGROUND OF THE EVENT

- **Defence of India Act**
 - ♦ During World War I, British India contributed to the British war effort by providing men and resources.
 - ♦ Millions of Indian soldiers and labourers served in Europe, Africa, and the Middle East, while both the Indian administration and the princes sent large supplies of food, money, and ammunition.
 - ♦ However, Bengal and Punjab remained sources of anti-colonial activities.
 - ♦ Revolutionary attacks in Bengal, associated increasingly with disturbances in Punjab, were significant enough to nearly paralyse the regional administration.
 - ♦ Of these, a pan-Indian mutiny in the British Indian Army planned for February 1915 was the most prominent amongst a number of plots formulated between 1914 and 1917 by Indian nationalists in India, the United States and Germany.

- ♦ The planned February mutiny was ultimately thwarted when British intelligence infiltrated the Ghadarite movement, arresting key figures.
- ♦ Mutinies in smaller units and garrisons within India were also crushed.
- ♦ In the scenario of the British war effort and the threat from the militant movement in India, the Defence of India Act 1915 was passed limiting civil and political liberties.
- ♦ Michael O'Dwyer, then the Lieutenant Governor of Punjab, was one of the strongest proponents of the act, in no small part due to the Ghadarite threat in the province.
- **The Rowlatt Act**
 - ♦ The costs of the protracted war in money and manpower were great. High casualty rates in the war, increasing inflation after the end, compounded by heavy taxation, the deadly 1918 flu pandemic, and the disruption of trade during the war escalated human suffering in India.
 - ♦ On the recommendations of the committee, the Rowlatt Act, an extension of the Defence of India Act 1915, was enforced in India to limit civil liberties.

SHIVAKUMARA SWAMIGALU

Recently, the Prime Minister paid tribute to Shivakumara Swamigalu (Swami ji) on his Jayanti.

About:

- **Birth:** He was born on 1 April 1907 in Veerapura, a village near Magadi in the erstwhile Kingdom of Mysore (in present-day Ramanagara district of Karnataka state).
- **Elementary education:** Shivanna completed his elementary education in a rural Anglo-vernacular school in Nagavalli, a village in the present-day Tumkur district.
- **Lingayat scholar:** He was a prominent Lingayat scholar, educator and spiritual leader of the famous Siddaganga Math.
- **"Walking God":** He was known as "Nadedaaduva Devaru" or the "Walking God" among his followers.
- **Incarnation of Basavanna:** He was considered as the incarnation of Basavanna, the 12th century social reformer, as he accepted all irrespective of their religion or caste.
- **One of the oldest persons in India:** Before his death in 2019, at the age of 111 years, Shivakumara Swamiji was one of the oldest persons in India
- **Trividha Daasoha:** His triple sacraments or "Trividha Daasoha" included - food, shelter and education.

- **Padma Bhushan:** In 2015, he was awarded by the Government of India the Padma Bhushan.
- **Social contribution:** He founded the Sri Siddaganga Education Society.
 - ♦ The Swami founded a total of 132 institutions for education and training that range from nursery to colleges for engineering, science, arts and management as well as vocational training.
 - ♦ He established educational institutions which offer courses in traditional learning of Sanskrit as well as modern science and technology. He was widely respected by all communities for his philanthropic work.

LINGAYAT

- Lingayat, also called Virashaiva, member of a Hindu sect with a wide following in southern India that worships Shiva as the only deity.
- The sect is generally regarded in South Indian oral tradition as having been founded by Basava in the 12th century.
- The Lingayats' earlier overthrow of caste distinctions has been modified in modern times, but the sect continues to be strongly anti-Brahmanical and opposed to worship of any image other than the lingam.
- In their rejection of the authority of the Vedas, the doctrine of transmigration of souls, child marriage, and ill treatment of widows, they anticipated much of the viewpoint of the social reform movements of the 19th century.
- In the early 21st century some Lingayats began to call for legal recognition by the Indian government as a religion distinct from Hinduism or, alternatively, as a caste within Hinduism.

POET SARALA DAS

The Vice President addressed Odia Adikabi Sarala Das's 600th birth anniversary function in Cuttack.

About:

- **Odia's literature:** Sarala Das was one of the foremost scholars on Odia's literature.
- **15th century A.D:** He was the first scholar to write his works in Odia in the 15th century A.D.
- **His best-known works include the three books of Odia:** Mahabharata, Vilanka Ramayana, and Chandi Purana.
- **Book:** He also wrote the book Laxmi Narayana Vachanika.
- **Writing Mahabharata:** He began writing his Mahabharata in 15th Century AD under the rule of Kapileswar, better known as Kapilendra, the famous Gajapati king of Odisha. (AD 1435-67).

ODIA LANGUAGE

- It is an Indo-Aryan language spoken in the Indian state of Odisha.
- It is the official language in Odisha.
- Odia is one of the many official languages of India; it is the official language of Odisha and the second official language of Jharkhand.
- Odia is the 6th Indian language to be designated a Classical language, on the basis of having a long literary history and not having borrowed extensively from other languages.
- The earliest known inscription in Odia dates back to the 10th century CE.

TIKA UTSAV AND JYOTIRAO PHULE

Calling the "Tika Utsav" (vaccination festival) the beginning of the second big war against COVID-19, Prime Minister laid stress on social and personal hygiene.

About:

- The Utsav started on the birth anniversary of Mahatma Jyotiba Phule and will continue till the birth anniversary of Babasaheb Ambedkar on April 14.
- The PM also noted that India should move towards zero vaccine wastage and said optimum utilisation of vaccination capacity is a way of increasing our capacity.
- He stressed on four points with regard to the drive.
 - ♦ **"Each one — vaccinate,"** meaning those who can't go themselves for vaccination, such as illiterate and old people, should be assisted.
 - ♦ **"Each One — Treat One,"** involves helping people in getting treatment, who do not have resources or knowledge to get it and third,
 - ♦ **"Each One — Save One,"** meaning I should wear a mask and save myself and others.
 - ♦ **Society and people** should lead in creating "micro containment zones".

Jyotirao Phule:

- **Birth:** Phule was born on 11 April 1827 into a family that belonged to the Mali caste which is considered as Shudra in varna system of Indian castes.
- **Early life:** He was an Indian social activist, thinker, anti-caste social reformer and writer from Maharashtra.
- **His contributions in Indian society:** His work extended to many fields, including eradication of untouchability and the caste system and for his efforts in educating women and exploited caste people.

- ♦ Phule started his first school for girls in 1848 in Pune at Tatyasaheb Bhide's residence or Bhidewada.
- ♦ He championed widow remarriage and started a home for dominant caste pregnant widows to give birth in a safe and secure place in 1863.
- **Pioneers of women's education:** He and his wife, Savitribai Phule, were pioneers of women's education in India.
- **His views on Aryan invasion theory:** Phule recast Aryan invasion theory of history, proposing that the Aryan conquerors of India, whom the theory's proponents considered to be racially superior, were in fact barbaric suppressors of the indigenous people.
- **Satyashodhak Samaj:** He, along with his followers, formed the Satyashodhak Samaj (Society of Truth Seekers) to attain equal rights for people from exploited castes.
 - ♦ People from all religions and castes could become a part of this association which worked for the upliftment of the oppressed classes.
 - ♦ Through this the samaj he opposed idolatry and denounced the caste system.
 - ♦ Satyashodhak Samaj campaigned for the spread of rational thinking and rejected the need for priests.
 - ♦ Phule established Satyashodhak Samaj with the ideals of human well-being, happiness, unity, equality, and easy religious principles and rituals.
 - ♦ A Pune-based newspaper, Deenbandhu, provided the voice for the views of the Samaj.
 - ♦ The membership of the samaj included Muslims, Brahmins and government officials.
 - ♦ Phule's own Mali caste provided the leading members and financial supporters for the organization.

WORLD CITIES CULTURE FORUM

Chief Minister of Delhi will represent Delhi and India at the World Cities Culture Forum (WCCF).

About:

- **Participation:** The annual summit, attended by deputy mayors for culture and heads of culture from the member cities, is at the heart of the forum's activity.
- **Theme:** This year's theme is "The Future of Culture".
- **Report published every 3 years:** The World Cities Culture report is published by the forum every three years, with data and details on innovative projects from cities across the world.

About the forum:

- **Network:** The World Cities Culture Forum is a network of local governments and cultural sector leaders from 43 world cities.
- **Aim:** This unique gathering allows city leaders to share ideas

and knowledge about the role of culture as an organising principle for the sustainable city of the future.

- **Establishment:** It was established in London in 2012 with eight cities (London, New York City, Tokyo, Shanghai, Paris, Istanbul, Sydney and Johannesburg) convened by the Mayor of London.
- **Managing body:** The activities of the World Cities Culture Forum are organised and delivered by BOP Consulting, a specialist consulting firm, on behalf of the Greater London Authority and the members of the Forum.
- **3 day summit:** Each year, members of the World Cities Culture Forum meet at the three-day World Cities Culture Summit.
- **The event is by invitation only:** Two delegates from each member city – deputy mayors, senior policymakers or advisors in culture – are invited to attend.

LINGARAJA TEMPLE

Recently, the Odisha Government has restricted public entry into the Lingaraj Temple after four sevayats (priests) tested positive for the novel coronavirus.

About:

- Lingaraja, literally means the king of Lingam, the iconic form of Shiva.
- Shiva was originally worshipped as Kirtivasa and later as Harihara and is commonly referred to as Tribhuvaneshwara (also called Bhubaneswar), the master of three worlds, namely, heaven, earth, and netherworld. His consort is called Bhubaneshvari.
- **Lingaraja Temple** is a Hindu temple dedicated to Shiva and is one of the oldest temples in Bhubaneswar, the capital of the Indian state of Odisha.
- The temple represents the quintessence of the Kalinga architecture and culminating the medieval stages of the architectural tradition at Bhubaneswar.
- The temple is believed to be built by the kings from the Somavamsi dynasty, with later additions from the Ganga rulers.
- The temple is built in the Deula style that has four components namely:
 - ♦ Vimana- (structure containing the sanctum)
 - ♦ Jagamohana - (assembly hall)
 - ♦ natamandira - (festival hall)
 - ♦ bhoga-mandapa - (hall of offerings)
- **Bhubaneswar** is called the Ekamra Kshetra as the deity of Lingaraja was originally under a mango tree (Ekamra) as noted in *Ekamra Purana*, a 13th-century Sanskrit treatise.
- **The central deity of the temple, Lingaraja**, is worshipped both

as Shiva and Vishnu.

- **The harmony between the two sects of Hinduism**, Shaivism, and Vaishnavism, is seen in this temple where the deity is worshipped as **Harihara, a combined form of Vishnu and Shiva**.
- Lingaraja temple is **maintained by the Temple Trust Board and the Archaeological Survey of India (ASI)**.
- The other attraction of the temple is the **Bindusagar Lake**, located in the north side of the temple.
- On the western banks of Bindusagar, lies the **garden of Ekamra Van** named after the Hindu mythological texts where Bhubaneswar the capital city of Odisha was referred as **Ekamra Van or a forest of a single mango tree**.
- The temple is **out of bounds for non-Hindus**.

Kalinga Architecture:

- In Kalinga Architecture, basically a **temple is made in two parts, a tower and a hall. The tower is called deula and the hall is called jagmohan**.
- **The walls of both the deul and the jagmohan are lavishly sculpted** with architectural motifs and a profusion of figures.
- The most repeated form is the **horseshoe shape**, which has come from the earliest times, starting with the large windows of the chaitya-grihas. **It is the deul or deula which makes three distinct types of temples in Kalinga Architecture**.
- The style consists of **three distinct types of temples: Rekha Deula, Pidha Deula and Khakhara Deula**. The former two are associated with Vishnu, Surya and Shiva temples while the third is mainly with Chamunda and Durga temples.
- The Rekha Deula and Khakhara Deula houses the sanctum sanctorum while the Pidha Deula constitutes outer dancing and offering halls.
- This style broadly **comes under the Nagara style**.
- **Examples of Kalinga architecture:** Rajarani temple (Bhubaneswar); Jagganath Temple, Puri.

WORLD HERITAGE DAY 2021

Recently the World Heritage Day was celebrated

About:

- Every year, **the United Nations** marks **April 18** as the International Day for Monuments and Sites, in many countries also celebrated as World Heritage Day.
- The **theme** for this year is **"Complex Pasts: Diverse Futures"**.
- Globally, the day **is promoted by the International Council on Monuments and Sites (ICOMOS)**.
- India is home to **38 UNESCO World Heritage Sites**, out of the 1121 such spots identified around the world.
- **Only China, Italy, Spain, Germany, and France** have more

locations on the list than India.

- To mark World Heritage Day, various programmes and tours are organised by heritage sites. People can also take part in seminars or group discussions on heritage-related topics.

History:

- **ICOMOS in 1982** had decided to celebrate April 18 as the International Day for Monuments and Sites or World Heritage Day.
- Approved by UNESCO in 1983 during its 22nd General Conference, the day is dedicated to recognising sites of historical importance, raising awareness regarding them, and stressing the need to restore and preserve them.
- The day, thus, promotes cultural importance, while also highlighting the many impediments in doing so.
- **Every year, a theme is proposed** for the day which guides the celebrations and the many activities that ICOMOS National and International Scientific Committees and by other bodies.

Theme 2021:

- This year, UNESCO has decided on **"Complex Pasts: Diverse Futures"** as the theme for World Heritage Day celebrations.
- "The conservation of cultural heritage requires careful examination of the past, and its practice demands provision for the future," the world body said on its website.

Significance:

- The day is observed **to raise awareness about the cultural heritage** that we see around us.
- It is also aimed at **promoting historical monuments and sites** through which we can actually preserve the cultural integrity of a community as well.
- "Deterioration or disappearance of any item of the cultural or natural heritage constitutes a harmful impoverishment of the heritage of all the nations of the world," the World Heritage Convention (1972) stated.
- "Together with ICOMOS, the UNESCO World Heritage Centre supports inclusive and diverse points of view in heritage identification, conservation and transmission to **future generations**."
- As the day is being observed **amid the Covid-19 crisis**, it has invited people to participate in the celebrations by visiting UNESCO World Heritage **sites virtually through the online exhibits on Google Arts & Culture**.

World Heritage Sites in India:

- Currently, there are **38 World Heritage Sites located in India**.
- Of these, **30 are 'cultural'**, such as the Ajanta Caves, Fatehpur Sikri, Hampi monuments and the Mountain Railways of India

and **7 are 'Natural'**, including Kaziranga, Manas and Nanda Devi National Parks.

- **One is classified as 'Mixed'**, the Khangchendzonga National Park.
- In 2019, **'Jaipur City'** became the 38th addition to the India list under Culture.

NEW YEAR FESTIVALS

Vice President wishes nation ahead of the upcoming festivals.

About:

- These festivals mark the beginning of traditional New Year and reflect our country's composite culture and rich heritage.
- The harvest season in our country is an occasion to celebrate the vitality and abundance of nature.

Key highlights:

- **Ugadi**
 - ♦ It is also known as Samvatsaradi.
 - ♦ It is the New Year's Day for the states of Andhra Pradesh, Telangana, and Karnataka.
 - ♦ It is festively observed in these regions on the first day of the Hindu lunisolar calendar month of Chaitra.
 - ♦ The day is observed by drawing colourful patterns on the floor called Muggulu, mango leaf decorations on doors called torana, buying and giving gifts such as new clothes, giving charity to the poor, oil massage followed by special bath, preparing and sharing a special food called pachadi, and visiting Hindu temples.
 - ♦ The pachadi is a notable festive food that combines all flavors – sweet, sour, salty, bitter, astringent and piquant.
 - ♦ In Telugu and Kannada Hindu traditions, it is a symbolic reminder that one must expect all flavors of experiences in the coming new year and make the most of them.
- **Gudi Padava**
 - ♦ Gudhi Padwa is a spring-time festival that marks the traditional new year for Marathi and Konkani Hindus along with other fellow Hindus.
 - ♦ It is celebrated in and near Maharashtra and Goa on the first day of the Chaitra month to mark the beginning of the New year according to the lunisolar Hindu calendar.
 - ♦ The word padava or padavo comes from the Sanskrit word pratipada which refers to the first day of a lunar fortnight.
 - ♦ The festival is observed with colourful floor decorations called rangoli, a special Gudhi flag (garlanded with

flowers, mango and neem leaves, topped with upturned silver or copper vessel), street processions, dancing and festive foods.

- **Chaitra Sukladi**

- ♦ Chaitra Sukladi is the New Year in traditional Hindu calendar based on the beginning of the new moon.
- ♦ Sukladi means starting from the bright half of the month or from the day after Amavasi (no moon).
- ♦ Shukladi method is followed in the calendars followed in Maharashtra, Karnataka and Andhra Pradesh.
- ♦ In North India also Shukladi method is used to celebrate the Vikram Samvat New Year.

- **Cheti Chand**

- ♦ Cheti Chand is a festival that marks the beginning of the Lunar Hindu New Year for Sindhi Hindus.
- ♦ It typically falls in late March or early April in the Gregorian calendar on or about the same day as Gudi Padwa in Maharashtra and Ugadi in other parts of the Deccan region of India.

- **Vaisakhi**

- ♦ Also pronounced as Baisakhi is observed by Hindus and Sikhs.
- ♦ It is a historical and religious festival in Hinduism and Sikhism.
- ♦ It is additionally a spring harvest festival for many Indians.
- ♦ Vaisakhi is also a historical and religious festival in Sikhism.

- **Vishu**

- ♦ It is a Hindu festival celebrated in the Indian state of Kerala, Tulu Nadu region in Karnataka, Mahé district of Union Territory of Pondicherry, neighbouring areas of Tamil Nadu and their diaspora communities.
- ♦ The festival marks the first day of Medam, the ninth month in the solar calendar followed in Kerala.

- **Puthandu**

- ♦ It is also known as Puthuvarudam or Tamil New Year, is the first day of year on the Tamil calendar and traditionally celebrated as a festival.

- **Bohag Bihu**

- ♦ It is a traditional aboriginal ethnic festival celebrated in the Northeastern Indian state of Assam and other parts of northeastern India by the indigenous ethnic groups of Assam, and marks the beginning of the Assamese New Year.
- ♦ The festival is of mostly aboriginal origin comprising Tibeto-Burman, Austro-Dravidian, Tai and Alpine elements.

INDIA ENERGY DASHBOARDS (IED) VERSION 2.0

The government think tank NITI Aayog has launched India Energy Dashboards (IED) Version 2.0.

About:

- The India Energy Dashboards Version 2.0 has recently been launched by NITI Aayog.
- The IED provides time series data from FY 2005-06 until FY 2019-20.

IED Version 2.0:

- **Aim:** NITI Aayog's India Energy Dashboards (IED) aims to provide single-window access to the energy data in the country. It aims to provide interesting visualisations of data to get an intuitive understanding of the sector. It is a work in progress and hopefully an initial step towards building a comprehensive, open and freely accessible energy data portal for India.
- **Need:** The energy projections are key as we need to seize today's opportunities to build a sustainable tomorrow. India has five energy ministries and multiple energy-consuming sectoral ministries leading the energy discourse in the country. India can no longer afford to operate in a siloed energy data paradigm.
- **Features:**
 - ♦ **Enhanced data download:** It enables easy downloading of data into convenient spreadsheet formats in a cleaner, more intuitive way.
 - ♦ **Data from multiple sources:** IED provides data at sub-yearly frequencies as well. This includes monthly data and API linked data from some portals maintained by the government agencies. The monthly data is sourced from the monthly reports that are regularly published for the electricity, petroleum and natural gas sectors. API linked data from Saubhagya, UJALA, PRAAPTI, and Vidyut PRAVAH has been incorporated in the portal.
 - ♦ **Feedback:** A Feedback and Suggestions forum for the engagement of the energy data user community has been incorporated.
 - ♦ **Issue tracking system:** A semi-automated workflow/ issue-tracking system for managing periodic updates to the IED. The workflow system performs basic checks and data validation, helping to avoid incorrect data entry;
 - ♦ **State data:** Addition of technical and financial data of

electricity utilities available from the regulatory documents in the state of Maharashtra. Regulatory data specifically for the area served by the state-owned distribution utility – MSEDCL has been added. The Dashboards will include other states data in future.

- ♦ **Saubhagya:** Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya is to provide energy access to all by last mile connectivity and electricity connections to all remaining un-electrified households in rural as well as urban areas to achieve universal household electrification in the country.
- ♦ **UJALA:** The Unnat Jyoti by Affordable LEDs for All was launched with a target of replacing 77 cr incandescent lamps with LED bulbs. To nullify the high-cost of LEDs that acted as a barrier previously in adoption of energy efficient systems, the scheme was implemented to set up phase wise LED distribution across the nation to provide people with affordable LED bulbs and energy efficient appliances.
- ♦ **PRAAPTI:** In a bid to rein in errant distribution companies (discoms) that delay payments to power generation companies, the Power Ministry has launched the Praapti web portal. 'Praapti' stands for 'Payment ratification and analysis in power procurement for bringing transparency in involving of generators'.
- ♦ **Vidyut PRAVAH App:** one can now get information related to electricity availability, shortage and pricing on their mobile phones. The mobile App provides a wealth of information pertaining to the current demand, shortages if any, surplus power availability and prices in the Power Exchange.

WORLD PRESS FREEDOM INDEX

The World Press Freedom Index was released on 20th April 2021 and India's rank was 142nd, same as last year's, among 180 countries.

About:

- The World Press Freedom Index is released every year by Reporters Sans Frontiers (Reporters without Borders).
- The Index ranks 180 countries and regions according to the level of freedom available to journalists determined by pooling the responses of experts to a questionnaire devised by RSF.

May, 2021

- The criteria used in the questionnaire are:
 - pluralism,
 - media independence,
 - media environment and self-censorship,
 - legislative framework,
 - transparency, and
 - the quality of the infrastructure that supports the production of news and information.
- In 2021, the first position is held by Norway, consecutively for 5 years, followed by Finland and Denmark.
- Last position is of Eritrea.
- China holds 177th position.
- Among South Asian nations only Pakistan and Bangladesh are faring worse than India, at 145 and 152 respectively.
- Report shows that journalism, the main vaccine against disinformation, is completely or partly blocked in 73% of the 180 countries ranked by the organization.

India's Ranking:

- India's rank is seeing a downfall since the last 5 years when it was at 133 in 2016.
- India is termed "bad" along with Brazil, Mexico.
- This declination in rank shows the curbs put on journalists during their work.
- According to the Report, India is considered as one of the most dangerous countries for the people in Journalism. It is so because, each Government critique is termed as Anti-national. In 2020, the government took advantage of the coronavirus crisis to step up its control of news coverage by prosecuting journalists providing information at variance with the official position. The situation is still very worrying in Kashmir, where reporters are often harassed by police and paramilitaries.
- The laws of Sedition and clause of national security are used as per the benefit of the Government. Sedition Law has for long been in limelight for its draconian nature. It was discarded by Indians even during Colonial times, still there are no changes made in it till now.
- The curtailment of the freedom and harassment of the Government's critique are even extended to Social media. Twitter's algorithm is different for India thereby censoring any content not in the good vibe of the Hindutva regime going on in the country.
- Journalists are exposed to every kind of attack, including police violence against reporters, ambushes by political activists, and reprisals instigated by criminal groups or corrupt local officials.

RESTRICTIONS ON FREEDOM OF SPEECH AND EXPRESSION

India's constitution proudly enshrined Article 19 (1) (a) providing Freedom of Speech and Expression to the citizens of the country. Freedom of Press is not explicitly mentioned under this Article but it is implied to be a part of the Article. Although it had some reasonable restrictions mentioned in Article 19(2) pertaining to:

- Sovereignty and integrity of India
- Security of the State
- Friendly relations with foreign states
- Public order
- Decency or morality
- Contempt of court
- Defamation
- Incitement to an offence

2021 World Press Freedom Index

(Selected countries and territories)

Ranking		Country/ territory	Ranking		Country/ territory
2020	2021		2020	2021	
1	➡ 1	Norway	119	➡ 113	Indonesia
2	➡ 2	Finland	101	➡ 119	Malaysia
4	➡ 3	Sweden	140	➡ 137	Thailand
9	➡ 8	New Zealand	136	➡ 138	Philippines
26	➡ 25	Australia	139	➡ 140	Myanmar
42	➡ 42	South Korea	142	➡ 142	India
43	➡ 43	Taiwan	158	➡ 160	Singapore
45	➡ 44	U.S.	175	➡ 175	Vietnam
66	➡ 67	Japan	177	➡ 177	China
80	➡ 80	Hong Kong	180	➡ 179	North Korea

Source: Reporters Without Borders

India's Response:

- A committee set up by the Indian government last year to suggest ways of India improving its ranking in the World Press Freedom Index has concluded that the media is doing well and that India's poor score – which it says is **"not in line with the ground situation"** – is the product of **"western bias"**.
- Fearing such an adverse assessment, the Index Monitoring Cell was set up under the Information and Broadcasting Ministry in 2020. Its task was to improve the rank of the World Press Freedom Index.

REPORTERS WITHOUT BORDERS (RSF)

- A French NGO
- Established in 1985
- HQ: Paris
- Publishing world Press Freedom Index since 2002
- Aims to safeguard the right to information

ICONIC CHENAB BRIDGE

Indian Railways completed the arch closure of the iconic Chenab Bridge in Jammu & Kashmir.

About:

- The construction of the arch of the world's highest railway bridge i.e. Chenab bridge that soars 359 metres above the bed of the Chenab river in Jammu and Kashmir has been completed recently.
- The Northern Railways zone of Indian Railways termed the achievement a milestone.



The Chenab Bridge:

- **Length:** Indian Railways is constructing the iconic Arch Bridge of 1.3 KM length on River Chenab as a part of the USBRL project to connect the Kashmir valley to the rest of the nation.
- **Cost:** It is being constructed at a cost of ₹1,486 crore as part of the Udhampur-Srinagar-Baramulla Railway Link (USBRL) project.
- **Height:** This is the highest Railway Bridge in the world being 359 m above the river bed level.
- **Cable cranes:** For the first time, erection of the members of the arch by overhead cable cranes was done on the Indian Railways network.
- **Fabrication:** Bridge construction involved the fabrication of 28,660 million tonnes steel, 10 lakh cum earthwork, 66,000 cum concrete as well as 26 kilometres motorable roads.
- **Software:** For structural detailing, the most sophisticated 'Tekla' software was used.
- **Design life:** Design life of the bridge is expected to be 120 years.
- **Wind tolerance:** Bridge is designed to withstand high wind speed up to 266 Km/Hour.

- **Blast load:** Bridge is designed for blast load in consultation with DRDO for the first time in India.
- **Seismic tolerance:** It is designed to bear earthquake forces of highest intensity zone-V in India.
- **Testing:** First time on Indian Railways, Phased Array Ultrasonic Testing machine is used for testing of welds.
- **Welding:** First time on Indian Railways, NABL accredited lab is established at site for weld testing. Approx. 584Km welding is done to join the different parts of the structure, which is to the tune of distance between Jammu Tawi to New Delhi.
- **Design:** Height of the cable crane's pylon at Srinagar end is 127m, which is much taller than Qutub Minar of 72m. Launch of curved viaduct portion is done for first time on Indian Railways using End Launching Method.
- **Warning system:** Extensive health monitoring and warning systems planned through state of art instrumentation.

CHENAB RIVER

The Chenab is formed by the confluence of two streams, Chandra and Bhaga, in the western Himalayas in Himachal Pradesh. It flows west through Jammu and Kashmir between the steep cliffs of the Siwalik Range (south) and the Lesser Himalayas (north). Turning southwest, it continues into Pakistan, descending from the uplands into the broad alluvial lowlands of Punjab province. After receiving the Jhelum River near Trimmu, the Chenab empties into the Sutlej River, a tributary of the Indus River. Its total length is about 974 km, and it feeds several irrigation canals.



Multiple Choice Questions

1. Consider the following statements about Human Rights.
 1. Universal Declaration of Human Rights was proclaimed by the UNGA and was the first such declaration for universally accepted fundamental human rights.
 2. India played a crucial role in drafting it.
 3. The '2020 Country Reports on Human Rights Practices' are reports compiled by the United Nations General Assembly, assessing the human rights situation in all countries of the world.

Which of the above statement(s) is/are correct?

(a) 1 and 2 only (b) 1 and 3 only
(c) All of the above (d) 2 and 3 only
2. Consider the following statements about UN Economic and Social Commission for Asia and the Pacific (UNESCAP).
 1. It is UN's regional hub to promote inter-governmental co-operation on inclusive and sustainable development.
 2. It reports to the UN Economic and Social Council.
 3. India is a member of the UNESCAP.

Which of the above statement(s) is/are correct?

(a) 1 and 2 only (b) 1 and 3 only
(c) All of the above (d) 2 and 3 only
3. Consider the following statements about Access to COVID-19 Tools (ACT) Accelerator.
 1. It is a global collaboration launched in April 2020 to accelerate development, production, and equitable access to COVID-19 tests, treatments, and vaccines to end the pandemic as soon as possible.
 2. It is not a decision-making body or new organization.
 3. It is an initiative of the United Nations General Assembly.

Which of the above statement(s) is/are correct?

(a) 1 and 2 only (b) 1 and 3 only
(c) All of the above (d) 2 and 3 only
4. Which of the following organizations released the State of World Population Report 2021: My Body is My Own?
 - (a) World Health Organization
 - (b) OECD
 - (c) United Nations Population Fund (UNFPA)
 - (d) Amnesty International
5. Consider the following statements about EatSmart Cities challenge.
 1. It has been launched by the Ministry of Consumer Affairs, Food and Public Distribution in collaboration with FSSAI.
 2. It aims to nudge the urban populace to make the right food choices and help build a healthier and happier nation.
 3. It is open to all cities in India.
 4. It complements the Smart Cities Mission.

Which of the above statement(s) are correct?

(a) 1 and 2 only (b) 2 and 4 only
(c) 1, 3 and 4 only (d) All of the above
6. Consider the following statements with respect to the Tribal Health Collaborative 'Anamaya'.
 1. It was launched by Ministry of Tribal Affairs and Ministry of Health and Family Welfare.
 2. It involves NGOs and other private players to build a sustainable, high-performing health eco-system to address the key health challenges faced by the tribal population of India.
 3. The Collaborative will be operational in all the States/UTs with more than 60% tribal population in the beginning.

Which of the above statement(s) is/are correct?

(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above
7. Consider the following statements with respect to opium cultivation in India.
 1. It can be done only on government notified tracts of land and presently it is legally cultivated in 3 states.
 2. The licence to legally cultivate opium in India has to be renewed every year.
 3. Central Bureau of Narcotics under Ministry of Health and Family Welfare oversees the opium cultivation and trade in India.
 4. The Narcotics and Psychotropic Substances Act 1985 defines who is an 'addict' and prescribes penalties for violation of the provisions of the Act.

Which of the above statement(s) is/are correct?

(a) 1, 2 and 4 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) All of the above
8. Consider the following statements regarding life expectancy in India.
 1. The life expectancy of a child born in India is more than the world average.
 2. In India, females have a higher average life expectancy compared to males.
 3. The life expectancy has increased by approximately 20 years in the last half century for every Indian.
 4. Rural life expectancy is more than urban life expectancy and the gap is widening.

Which of the above statement(s) is/are correct?

(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above
9. Consider the following statements regarding life Mental Health and Normalcy Augmentation System (MANAS) App.
 1. It is a comprehensive, scalable, and national digital wellbeing platform to augment the mental well-being of Indians.
 2. Based on life skills and core psychological processes, MANAS integrates the health and wellness efforts of various ministries and scientific institutions.

Which of the above statement(s) is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None of the above

10. Consider the following statements about Aahaar Kranti Mission.

1. The Mission aims to spread awareness about nutrition and make accessible nutritious food, fruits, and vegetables in India for all.
2. The motto of the movement is 'Uttam Aahaar- Uttam Vichaar' or 'Good Diet-Good Cognition'.
3. The Mission lays special emphasis on locally sourced, balanced nutritional diet.

Which of the above statement(s) is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above

11. Consider the following statements about Corals.

1. They are plants belonging to the group named Cnidaria.
2. All types of corals form large calcareous reefs.
3. They have a symbiotic relationship with zooxanthellae, from which they derive their vibrant colours.
4. Biomineralization and the interactive spatial distribution of protein within the stony coral structure might help the corals to survive climate change.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 3 and 4 only (d) All of the above

12. Consider the following statements about Leaders Summit on Climate

1. The virtual Summit was convened by USA wherein 40 world leaders were invited.
2. The Summit is a part of series of global summits leading the COP 26 to be held in Glasgow in November 2021.
3. India and USA jointly launched the Clean Energy Agenda 2030 Partnership at the Summit.
4. At the Summit, USA also tripled all of its earlier Nationally Determined Contributions (NDC) towards fighting climate change.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1 and 3 only (d) All of the above

13. Consider the following statements about Blue Flag certified beaches.

1. Beaches around the world are given this certification, which serves as an eco-label for water quality, environmental management, education and safety at the beach.
2. Denmark-based non-profit Foundation for Environmental Education runs the Blue Flag programme.
3. An international jury awards the certification based on stringent criteria.
4. India has 8 Blue Flag certified sites in all the coastal states.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 3 and 4 only (d) All of the above

14. Consider the following statements about Beach Environment and Aesthetics Management Service (BEAMS).

1. It is India's own eco-label for sustainable development and management of beaches.
2. It is managed by the Society of Integrated Coastal Management (SICOM) under the aegis of the Ministry of Environment, Forests and Climate change, Government of India.
3. The program promotes beach recreation in absolute harmony with nature.
4. India plans to add 1000 more beaches in the next 3-4 years as Blue Flag certified beaches.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 3 and 4 only (d) All of the above

15. The State of the Global Climate Report is released by which of the following?

- (a) United Nations Environment Program
(b) World Meteorological Organization
(c) National Oceanic and Atmospheric Administration (NOAA)
(d) G20\

16. Consider the following statements about World Meteorological Organization.

1. It is a specialized agency of the United Nations.
2. Its secretariat is based at Geneva, Switzerland.
3. It releases the State of Global Climate Report.
4. Together with UNEP, it set up the International Panel on Climate Change (IPCC)

Which of the above statement(s) is/are correct?

- (a) 1 and 2 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) All of the above

17. Consider the following statements about United Nations Children's Fund (UNICEF).

1. It works to protect children's rights in more than 190 nations.
2. It is headquartered in Vienna, Austria.
3. The Executive Board of the UNICEF represents 10 regions of the world and the Board Members serve a five-year term.
4. State of the World's Children is an annual flagship publication of UNICEF.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1 and 4 only (d) All of the above

18. Consider the following statements about Prime Minister's Kisan Urja Suraksha Evum Utthan Mahabhiyan (KUSUM) scheme.

1. The scheme aims to provide financial and water security to farmers.
2. It has three components which involve construction of decentralized solar plants, installation or solarization of agricultural pumps.
3. The scheme has target of achieving 50000 MW of solar power by 2022.
4. Ministry of Power is the nodal ministry.

Which of the above statement(s) is/are correct?

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1 and 2 only (d) All of the above

May, 2021

- 19.** Consider the following statements about Maritime India Vision Document 2030.
1. The Vision document aims to propel India as a leader in maritime and shipbuilding sector.
 2. It plans to develop thematic cruise tourism circuits.
 3. It proposes a Maritime Development Fund to meet capital needs of the maritime sector.
 4. Ministry of Ports, Shipping and Waterways is the nodal ministry.
- Which of the above statement(s) is/are correct?
- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
(c) 1 and 2 only (d) All of the above
- 20.** Consider the following statements about hippopotamus (hippopotamus amphibius)
1. They are second largest land animal after elephant.
 2. They are found in all the tropical regions of the world presently.
 3. They remain submerged under water for long periods in a day to maintain coolth in hot weather.
 4. In India, they are protected under Schedule V of the Wildlife Protection Act, 1972.
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) All of the above
- 21.** Consider the following statements about Groundwater Management in India.
1. Central Ground Water Board (CGWB) is the National Apex Agency entrusted with the responsibilities of providing scientific inputs for management, exploration, monitoring, assessment, augmentation and regulation of ground water resources of the country.
 2. Central Ground Water Authority (CGWA) was constituted under sub-section (3) of Section 3 of the Environment (Protection) Act, 1986 for regulating and controlling ground water development and management in the country for long-term sustainability.
 3. Both function as offices under Ministry of Environment, Forests and Climate Change.
 4. CGWB collects groundwater data through a network of observation wells placed throughout India.
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 only (b) 1, 2 and 4 only
(c) 2, 3 and 4 only (d) All of the above
- 22.** Consider the following statements about Production Linked Incentive Scheme for Food Processing Industries (PLISFPI).
1. The Scheme aims to support India's food processing industry and make it globally competitive.
 2. Recently, the Cabinet approved an outlay of Rs. 109000 Cr for the scheme.
 3. Scheme will be implemented over a six-year period from 2021-22 to 2026-27.
 4. The Scheme would be monitored at Centre by the Empowered Group of Secretaries chaired by the Cabinet Secretary.
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1, 3 and 4 only (d) All of the above
- 23.** Consider the following statements about Shaphari Scheme of certification.
1. The Scheme aims to establish farm certification system for production of antibiotic residue free shrimp to enhance the consumer confidence, meet international standards and promote hassle free export.
 2. It is implemented by the The Marine Products Export Development Authority (MPEDA).
 3. The certificate awarded under the scheme will be valid for two years.
 4. The Scheme is based on the United Nations' Food and Agriculture Organization's technical guidelines on aquaculture certification.
- Which of the above statement(s) is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1, 3 and 4 only (d) All of the above
- 24.** Consider the following statements about Gangetic River Dolphin
1. It is the National Aquatic Animal of India.
 2. Its IUCN status has been downgraded to vulnerable as a result of several conservation measures.
 3. The breeding season of the Gangetic dolphin extends from January to June.
- Which of the above statements is/are correct?
- (a) 1 only (b) 1 and 2
(c) 1 and 3 (d) 1, 2 and 3
- 25.** Consider the following statements about Doomsday Glacier
1. It is Antarctica's fastest melting glaciers
 2. It's grounding line has water at just 2 degrees above freezing point.
- Which of the above statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None of the above
- 26.** Consider the following phenomena
1. Elevated Heat Pump 2. Snow-Darkening Effect
 3. Solar-Dimming Effect
- Which of the above leads to increase in rainfall?
- (a) 1 only (b) 1 and 2
(c) 2 and 3 (d) 1, 2 and 3
- 27.** Which ministry is responsible for coordinating National Mission for Sustaining Himalayan Ecosystem (NMSHE)?
- (a) Ministry of Earth Sciences
(b) Ministry of Science and Technology
(c) Ministry of Environment
(d) Ministry of Renewable Energy
- 28.** Consider the following statements about Central Pollution Control Board (CPCB)
1. It is a statutory organization constituted under the Air (Prevention and Control of Pollution) Act, 1981.
 2. It provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986
- Which of the above statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

- 29.** Consider the following statements about National Green Tribunal (NGT)
1. It is a statutory body established in 2010 under the National Green Tribunal Act.
 2. It is mandated to make disposal of applications or appeals finally within 6 months of filing of it.
 3. It can even try civil cases under Public Liability Insurance Act of 1991.
- Which of the above statements is/are correct?
- (a) 1 and 2 (b) 2 and 3
(c) 1 and 3 (d) 1, 2 and 3
- 30.** Sturgeon recently seen in news is a type of
- (a) Fish (b) Crocodile
(c) Turtle (d) Butterfly
- 31.** Consider the following statements about the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976
1. It says that the rights over the land, minerals, and such resources found beneath the ocean, inside the territorial waters, continental shelf, and exclusive economic zones of the nation are shared by both the Central and the state governments.
 2. It provides the right of innocent passage to all foreign ships through the territorial sea without any prior notice
- Which of the above statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None of the above
- 32.** Recently seen in the news, India has gifted PS Zoroaster, a ship, to which of the following countries?
- (a) Maldives (b) Madagascar
(c) Seychelles (d) Sri Lanka
- 32. (c)**
- 33.** With reference to NIXI, consider the following statements:
1. It is a not for profit Organization under the Companies Act 2013.
 2. The main objective is to continuously work for enhancing and improving the quality of Internet and Broadband services.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 34.** What does IPv6 stand for?
- (a) Internet Provider version 6
(b) Internet Protocol version 6
(c) Internet Promoter version 6
(d) Intermediate Protocol version 6
- 35.** Which of the following countries are members of E9 Countries Group?
1. India 2. Brazil
 3. Nigeria 4. Mexico
 5. United Kingdom
- Select the correct answer using the codes given below:
- (a) 1, 2, 3 and 4 only (b) 1, 2, 4 and 5 only
(c) 2, 3, 4 and 5 only (d) 1, 2, 3, 4 and 5
- 36.** Global Education Meeting (2020 GEM) was held by which of the following organizations?
- (a) UNDP (b) UNESCO
(c) WEF (d) IMF
- 37.** With reference to COVID-19 mRNA vaccines, consider the following statements:
1. mRNA vaccines do not use the live virus that causes COVID-19.
 2. mRNA never enters the nucleus of the cell.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 38.** With reference to Biotechnology Industry Research Assistance Council (BIRAC), consider the following statements:
1. It is a not-for-profit Public Sector Enterprise set up by the Department of Science and Technology (DST), Government of India.
 2. It is an agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 39.** Ingenuity Mars Helicopter, recently seen in the news, is a project of:
- (a) ESA (b) NASA
(c) ISRO (d) JAXA
- 40.** Which of the following statements is correct regarding the objective of Perseverance Rover?
- (a) To map Venus's surface with radar.
(b) To explore Pluto up close, flying by the dwarf planet and its moons
(c) To search for ancient life, gathering rocks and soil on Mars
(d) To provide new information about the asteroids
- 41.** The World Press Freedom index is published by which of the following organizations?
- (a) Institute for Economics and Peace (IEP)
(b) World Economic Forum (WEF)
(c) Walk Free Foundation
(d) Reporters Sans Frontieres (RSF)
- 42.** With reference to AIM-PRIME, consider the following statements:
1. It is launched by NITI Aayog in collaboration with Bill & Melinda Gates Foundation (BMGF).
 2. It is aimed at promoting science based, deep technology ideas to market through training and guidance over a period of 12 months.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 43.** With reference to Atal Innovation Mission (AIM), consider the following statements:
1. It is a flagship initiative set up by the Ministry of Education.
 2. It is an initiative to promote a culture of innovation and entrepreneurship in the country.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 44.** With reference to Harlequin Ichthyosis, consider the following statements:
1. It is a rare genetic disorder in newborns with very less chances of surviving.

May, 2021

2. The baby is born with very thin and soft skin.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
45. Harlequin Ichthyosis, recently in news, is:
(a) a bacterial parasite (b) a variety of plant
(c) an invasive species (d) a rare genetic skin disorder
46. With reference to Brucellosis, consider the following statements:
1. It is a viral disease.
2. It is a type of zoonotic infection, i.e., it spreads from animals to people.
Which of the statements given above is/are incorrect?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
47. With reference to National Animal Disease Control Programme (NADCP), consider the following statements:
1. It is a flagship for vaccinating 100% cattle, buffalo, sheep, goat and pig population for FMD and 100% bovine female calves of 4-8 months of age for brucellosis.
2. It is a Central Sector Scheme where 100% of funds shall be provided by the Central Government to the States / UTs.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
48. With reference to the Aditya-L1 mission, consider the following statements:
1. Aditya-L1 is a India's First scientific mission to study the Sun.
2. It has been designed and will be built in collaboration between ISRO and NASA.
3. It will be launched using the PSLV-XL from Sriharikota.
Which of the statements given above is/are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
49. Which of the following correctly explains the "ARIES"?
1. ARIES is a leading research institute in Nainital Uttarakhand which specializes in Astronomy, Solar Physics, Astrophysics and Atmospheric Sciences.
2. It is an autonomous body under the Department of Science and Technology (DST), Government of India.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
50. With reference to the "neutrino detectors" consider the following pairs:
- | Neutrino Observatories | Location |
|------------------------|-------------------|
| 1. Baikal-GVD | Lake Baikal |
| 2. Ice Cube | South pole |
| 3. Antares | Mediterranean sea |
- Which of the pairs given above is/are correctly matched?
(a) 1, and 3 only (b) 2 and 3 only
(c) 2 only (d) 1, 2 and 3
51. With reference to the "Baikal-GVD Telescope consider the following statements:
1. It is mission to study in detail the elusive fundamental particles called neutrinos.
2. Russian scientists launched one of the world's biggest underwater neutrino telescopes called the Baikal-GVD in the waters of Lake Baikal the world's deepest lake situated in Siberia.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
52. With reference to the "Great Indian Bustard consider the following statements:
1. The Great Indian Bustard (GIB) is the State bird of Rajasthan, is considered India's most critically endangered bird.
2. It is most often found in arid and semi-arid grasslands, so it is known as flagship grassland species.
3. In India, the population confines mostly to Rajasthan and Gujarat.
Which of the statements given above is/are correct?
(a) 1 and 3 only (b) 2 and 3 only
(c) 1 and 2 (d) All of the Above
53. Consider the following statements:
1. The Govt of India initiated Project Great Indian Bustard, on World Environment Day 2013, identifying and fencing off bustard breeding grounds in existing protected areas.
2. The Ministry of Health, and Family Welfare has included the Great Indian Bustard (GIB) under the Species Recovery Programme.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
54. With reference to "Disk-Footed Bat", recently seen in news, consider the following statements:
1. India's first bamboo-dwelling bat with sticky disks, has been found near Nongkhylllem Wildlife Sanctuary in Meghalaya.
2. Due to its Flattened Skull and Sticky Pads enabled the bats to roost inside narrow spaces such as bamboo internodes.
3. The disk-footed bat (*Eudiscopus denticulus*) is a species of vesper bat in the Vespertilionidae family found in Laos, Myanmar, southern china, Vietnam and Thailand.
Which of the statements given above is/are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the Above
55. With reference to the "Nongkhylllem Wildlife Sanctuary consider the following statements:
1. The Sanctuary falls in the Western Himalayan Global biodiversity hot spot.
2. It is located in the Ri-Bhoi district of Meghalaya and spread over an area of 29 sq kms & famous for tourist attraction.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
56. Consider the following statements with reference to B R Ambedkar
1. He participated in all three Round Table Conferences.
2. The book - Annihilation of Caste was published by him.
3. Independent Labour Party was founded by him.
Which of the following statements is/are correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

- 57.** Consider the following statements with reference to Babu Jagjivan Ram
1. He was the first Deputy PM of the country.
 2. He founded the All-India Depressed Classes League.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 58.** With reference to Jallianwala Bagh Massacre consider the following statements
1. It is also known as Amritsar massacre.
 2. People had gathered against the arrest of Bhagat singh and Sukhdev.
 3. Hunter Commission was formed on the basis of this event.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 59.** Which of the following pairs are correctly matched?
1. Ugadi – Maharashtra
 2. Gudi Padava – Meghalaya
 3. Vishu – Tamil Nadu
 4. Bohag Bihu – Assam
- (a) 1 and 2 only (b) 3 and 4 only
(c) 4 only (d) All of the above
- 60.** Consider the following statements with reference to Poet Sarala Das
1. He also wrote the book Laxmi Narayana Vachanika.
 2. He was the first scholar to write his works in Odia language.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 61.** Consider the following statements with reference to Shivakumara Swamigalu
1. He was a prominent Lingayat scholar.
 2. He was known as the "Walking God".
 3. He was considered as the incarnation of Basavanna.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 62.** Consider the following statements with reference to Jyotirao Phule
1. He was pioneers of women's education in India.
 2. He is the founder of Satyashodhak Samaj.
 3. He worked for the eradication of untouchability and the caste system.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 63.** Consider the following statements with reference to World Cities Culture Forum (WCCF)
1. It is a network of local governments.
 2. The World Cities Culture report is published by them.
- Which of the following statements is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 64.** Which of the following country is NOT a part of BIMSTEC?
- (a) Bangladesh (b) Sri Lanka
(c) Nepal (d) Indonesia
- 65.** With reference to Geography of Iran consider the following statements
1. It is located in West Asia.
 2. The main mountain chain is the Zagros Mountains.
 3. Farzad-B pipeline belongs to Iran where India is investing massively.
- Which of the following statements is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 66.** With reference to the Armenian Genocide consider the following statements:
1. The Armenian Genocide was the systematic mass murder and ethnic cleansing of around one million ethnic Armenians from Anatolia and adjoining regions by the Ottoman Empire and its ruling party.
 2. It often called the FIRST genocide of the 20th century,
 3. On April 24, Joe Biden became the first US President to declare that the 1915 systemic massacre of Armenians constituted an act of genocide.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 67.** With reference to the "Lingaraja Temple consider the following statements:
1. Lingaraja Temple is a Hindu temple dedicated to Shiva and is one of the oldest temples in Bhubaneswar, the capital of the Indian state of Odisha.
 2. The temple is built in the Deula style.
 3. The temple is believed to be built by the kings from the Somavamsi dynasty, with later additions from the Ganga rulers.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the Above
- 68.** Consider the following statements:
1. In Kalinga Architecture, basically a temple is made in two parts, a tower and a hall. The tower is called deula and the hall is called jagmohan.
 2. This style broadly comes under the Nagara style.
 3. The style consists of three distinct types of temples: Rekha Deula, Pidha Deula and Khakhara Deula. The former two are associated with Vishnu, Surya and Shiva temples while the third is mainly with Chamunda and Durga temples.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the Above
- 69.** Consider the following statements:
1. Mahavira, also known as Vardhamana was the 24th Tirthankara of Jainism. He was the spiritual successor of the 23rd Tirthankara Parshvanatha.
 2. Mahavira practiced intense meditation and severe austerities for 12 and a half years, after which he attained Kevala Gyan (omniscience).
 3. Mahavira achieved Kevala Jnana (omniscience, or infinite knowledge) under a Sala tree on the bank of the River Rijubalika near Jrimbhikagrama.
- Which of the statements given above is/are correct?
- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the Above

May, 2021

70. With reference to the "World Heritage Day 2021 consider the following statements:

1. Every year, the United Nations marks April 18 as the International Day for Monuments and Sites, in many countries also celebrated as World Heritage Day.
2. The theme for this year is "Complex Pasts: Diverse Futures.
3. Globally, the day is promoted by the International Council on Monuments and Sites (ICOMOS).

Which of the statements given above is/are correct?

- (a) 1 and 2only (b) 2 and 3only
(c) 1 and 3only (d) All of the Above

71. With reference to the "World Heritage Sites in India: consider the following statements:

1. Currently, there are 38 World Heritage Sites located in India, out of these, 30 are 'cultural' 7 are 'Natural' sites present.
2. The Khangchendzonga National Park classified as 'Mixed' World heritage site.
3. In 2019, 'Jaipur City' became the 38th addition to the India list under Culture.

Which of the statements given above is/are correct?

- (a) 1 and 2only (b) 2 and 3only
(c) 1 and 3only (d) 1, 2 and 3only

72. With reference to "National Climate Vulnerability Assessment Report", recently seen in news, consider the following statements:

1. It is submitted by Indian Institute of Technology Mandi and Indian Institute of Technology Guwahati In collaboration with Indian Institute of Science, Bengaluru.
2. It identifies the most vulnerable states and districts in India with respect to current climate risk and key drivers of vulnerability.
3. Key indicators for the assessment include percentage of population living below the poverty line; income share from natural resources; the proportion of marginal and small landholdings, women's participation in the workforce.

Which of the statements given above is/are correct?

- (a) 1 and 2only (b) 2 and 3only
(c) 1 and 3only (d) 1, 2 and 3only

73. Consider the following statements:

1. Maharashtra has been ranked lowest among states likely to be affected by climate vulnerability in a first-of-its-kind assessment report released by Department of Science and Technology (DST).
2. Nandurbar is among 51 districts most vulnerable to climate change.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

74. With reference to "National Climate Vulnerability Assessment Report, recently seen

in news, consider the following statements:

1. It can assist in ranking and identification of the most vulnerable districts and states and help states prioritise adaptation planning and investments.
2. It will also benefit climate-vulnerable communities across India through development of better-designed climate change adaptation projects.
3. It may also aid to plan disaster management.
4. The report has helped identify the most vulnerable states, districts & panchayats and will aid in prioritizing adaptation investment, developing and implementing adaptation programs

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 2, 3 and 4 only
(c) 1, 3 and 4 only (d) All of the Above

75. The term 'Chimera research' recently seen in news is related to:

- (a) The first time grown human cells in monkey embryos.
(b) Over production of immune cells.
(c) Over-production of glucose leading to enhanced blood sugar.
(d) Reduced oxygen levels causing hypoxic situation.

76. With reference to the "Chimeric research: consider the following statements:

1. To grow cells of two different species together offers scientists a powerful tool for research and medicine.
2. It could help in drug evaluation and address the critical need for organ transplantation.
3. Chimeric tools provide a new platform to study how certain diseases arise.

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3 only

77. With reference to the "Crew-2 Mission" consider the following statements:

1. It is the second crew rotation of the SpaceX Crew Dragon and the first with international partners.
2. Out of the four astronauts, two are from NASA and two are from the Japan Aerospace Exploration Agency (JAXA) and the European Space Agency (ESA).
3. Their central focus during this time will be to continue a series of Tissue Chips in Space studies.
4. Members of this mission conduct microgravity studies, investigate food physiology.

Which of the statements given above is/are correct?

- (a) 1 and 3 only (b) 2, 3 and 4 only
(c) 1, 3 and 4 only (d) All of the Above

78. Consider the following statements with reference to regulation of divorce, maintenance and alimony in Islam:

1. Talak-e-Tafweez is the wife's right to divorce her husband.
2. Khula provides right to wife to get her marriage dissolved through Darul Kaza or Shariat Court.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

79. Consider the following statements with reference to provisions in India regarding divorce alimony :

1. All matters related to divorce and alimony in India are currently regulated y single law.
2. Muslims have been demanding to promote Sharia laws in such cases.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

80. Consider the following statements with reference to demand for an autonomous state within Assam:

1. 22nd Amendment of the constitution provided for an autonomous state within Assam.
2. It inserted Article 244 A in the constitution.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

- 81.** Consider the following statements with reference to Sixth Schedule of the constitution:
1. It provides for formation of autonomous regions in all states having significant tribal population.
 2. It provides for formation of autonomous districts councils to govern the tribal regions.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 82.** Consider the following statements with reference to star campaigner:
1. If the Prime Minister as star campaigner expenditure incurred on security will be borne by the government.
 2. If a minister is a star campaigner and he travels with Prime Minister, his expenditure will be not be counted.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 83.** Consider the following statements with reference to conditions required for appointment of a person in public services:
1. A Person acquitted due to benefit of doubt is not eligible for public employment in India.
 2. A man facing trial and is neither acquitted nor convicted is eligible for public employment.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 84.** Consider the following statements with reference to transfers and postings of personnel in Central Vigilance Commission :
1. The commission has restricted the tenure of posting of CVC personnel to three years at one place.
 2. It has been done in order to maintain transparency, objectivity and uniformity in approach.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 85.** Consider the following statements with reference to the Tribunals Reforms (Rationalization and Conditions of Service) Ordinance, 2021:
1. It has replaced the existing tribunals and vested those powers in the High Courts.
 2. Tribunals are Quasi-Judicial constitutional bodies .
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 86.** Consider the following statements with reference to tribunals in India:
1. Tribunals were first recommended by Swaran Singh Committee.
 2. These were incorporated by provisions of 44th amendment act of constitution.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 87.** Consider the following statements with reference to Central Bureau of Investigation:
1. It has been constituted after the recommendations of the Santhanam Committee.
 2. It is a statutory body formed by Delhi Special Police Establishment Act, 1946.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 88.** Consider the following statements with reference to SUPACE Portal:
1. It has been designed by Indian Space Research Organization to educate children about space.
 2. It is based on artificial intelligence.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 89.** Consider the following statements with reference to Infrastructure Investment Trust:
1. These are collective investment vehicles which are similar to a mutual fund.
 2. It enables direct investment of money from individual and institutional investors.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 90.** Consider the following statements with reference to Infrastructure Investment Trust:
1. Insurance companies are not eligible for investment in such trust.
 2. Minimum Investment required for investment in such trust is Rs. 2000.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 91.** Consider the following statements with reference to regulation and rating of Infrastructure Investment Trusts:
1. These trusts are regulated by Reserve Bank of India.
 2. InvITs in India has been accorded highest safety level (AAA) by credit rating agency CRISIL.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 92.** Consider the following statements with reference to Ways and Means Advance:
1. It provides immediate cash only to Central government.
 2. The cash provided under this scheme has to be returned within 14 days.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2
- 93.** Consider the following statements with reference to Ways and Means Advance:
1. The interest charged upon the Ways and Means Advances is usually equivalent to Reverse Repo Rate.
 2. On default in payment, interest rate is increased by two percentage points.
- Which of the statements given above is/are correct?
- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

May, 2021

94. Consider the following statements with reference to Madhu Kranti portal:

1. It is an initiative of National Bee Board (NBB) which comes under Ministry of Agriculture and Farmers Welfare.
2. It aims to check the quality and the source of adulteration of honey.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

95. Consider the following statements with reference to Honey Corners Initiative:

1. The initiative aims to open a honey corner in every NAFED Bazaar in order to provide marketing support to all Farmers Producer Organizations.
2. It will further explore the possibilities of online marketing of honey and honey products.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

96. Consider the following statements with reference to National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED):

1. It has been registered under the Multi State Co-operative Societies Act.
2. It aims organize, promote, and develop marketing and storage of agricultural and forest produce.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

97. Consider the following statements with reference to Honey Production in India:

1. India is the largest producer of honey in the world.
2. In last five years, honey production in India has constantly reduced.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

98. Consider the following statements with reference to production of urea by coal gasification:

1. Main constituents required for Urea production are Nitrogen, Hydrogen and Carbon-di-oxide.
2. The technology uses Syn gas from coal gasification to supplement Nitrogen and Hydrogen while Carbon-di-oxide is obtained from air.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

99. Consider the following statements with reference to urea production and consumption in India:

1. India's 55% of domestic fertilizer consumption comprises of Urea.
2. Most of the urea in India is produced from Natural Gas.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

100. Consider the following statements with reference to Codex Alimentarius Commission:

1. It provides for international food standards, guidelines and codes of practice which is followed by importers and exporters around the world.
2. It has been developed by World Trade Organization.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

ANSWER KEY

1. (a)	2. (c)	3. (a)	4. (c)	5. (b)	6. (a)	7. (a)	8. (b)	9. (c)
10. (d)	11. (c)	12. (a)	13. (a)	14. (a)	15. (b)	16. (d)	17. (c)	18. (c)
19. (d)	20. (b)	21. (b)	22. (c)	23. (D)	24. (c)	25. (c)	26. (b)	27. (b)
29. (b)	29. (d)	30. (a)	31. (d)	32. (c)	33. (c)	34. (b)	35. (a)	36. (b)
37. (c)	38. (b)	39. (b)	40. (c)	41. (d)	42. (c)	43. (b)	44. (a)	45. (d)
46. (a)	47. (c)	48. (c)	49. (c)	50. (d)	51. (c)	52. (d)	53. (d)	54. (d)
55. (b)	56. (d)	57. (c)	58. (c)	59. (b)	60. (c)	61. (d)	62. (d)	63. (c)
64. (d)	65. (a)	66. (d)	67. (d)	68. (d)	69. (d)	70. (d)	71. (d)	72. (d)
73. (c)	74. (d)	75. (a)	76. (d)	77. (d)	78. (c)	79. (d)	80. (c)	81. (b)
82. (a)	83. (a)	84. (c)	85. (c)	86. (a)	87. (a)	88. (b)	89. (c)	90. (d)
91. (b)	92. (d)	93. (b)	94. (c)	95. (c)	96. (c)	97. (d)	98. (a)	99. (c)
100. (a)								

Subjective Questions

GS Paper-I

1. Falling groundwater levels not only affects agriculture but also has a wider impact on the environment. Elaborate. **10**
2. The Neo-Buddhist movement started by Ambedkar was a radical movement which was different from its predecessors in many ways. Critically analyze. **15**

GS Paper-2

3. After Seventy Years of Independence, India doesn't have uniform civil law on divorce and alimony. Discuss. **15**
4. Who is considered as a Star Campaigner? What are the conditions which have been put by election commission of India while deciding the expenditure incurred by a star campaigner? **10**
5. How is a person not eligible for public employment? Is it justified that a person acquitted by the court of on benefits of doubt is considered ineligible for public employment? **10**
6. Recent decision of central vigilance commission to rotate transferring of its officials every three years is a right step to check collusion with its subjects. Discuss. **15**
7. Vesting Powers of tribunals into high courts will end partiality and expedite justice delivery system. Discuss. **15**
8. Discuss the use of artificial intelligence in Judiciary. Has it the ability to expedite the justice delivery system? **10**
9. After World Press Freedom Index, Chandler Good Government Index has criticized India's unethical and undemocratic attitude towards civil society members and press. Discuss. **15**
10. SWAMITVA Scheme is a land mark in history of land ownership certification and will boost the infrastructure development in rural areas. Discuss. **15**

GS Paper-3

11. The Opium cultivation in India is highly regulated. Elaborate the socioeconomic and legal issues in opium cultivation in India and suggest measures to overcome them. **10**
12. Promotion of E-governance in different departments and ministries is the need of hour at the time when India is gracing telecom revolution and fourth Industrial revolution. Discuss. **10**
13. Excessive groundwater extraction is seen in major wheat growing areas of northern India. Discuss the measures to arrest groundwater depletion in India. **15**
14. The inefficiencies existing in the structure and functioning of central and state pollution boards needs an urgent overhaul. Examine the statement in the wake of recent NGT orders for improving their functioning. **10**
15. Demand of autonomous states within the state can fuel insurgency and alienate tribals from main stream society. Elucidate. **15**
16. Promotion of Infrastructure Investment Trust in major Maharatna, Navratna and Mini Ratna Companies can boost the prospects of investment. Elucidate. **10**
17. Monetary tools like Ways and Means Advance have emerged as effective tools to combat short time cash crunch amid pandemic, Elucidate. **10**
18. Promoting Apiculture in India can be an alternative way to aid Mixed agriculture system in India and increase the farmer's income'. Elucidate. **10**
19. Production of urea from coal gasification is sustainable to environment on the one hand while decreases import dependency on the other. Elucidate. **10**

GS Paper-4

20. Black Marketing, Hoarding, Overpricing and mismanagement has unearthed the cruel face of human values during current pandemic. Elucidate. **15**