

NEXT IAS

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NEXT IAS Roll No.: MTS 23FLT KA 009 Date of Examination : 23rd July 2023

Exam Centre : Old Rajinder Nagar ☒ Bhopal ☐ Online ☐

Test Code : TC037 Program : FLT ☐ FLT+ ☒

Time : 3:15 PM - 6:20 PM

MAIN TEST SERIES 2023 (FULL LENGTH TEST-3)

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.

Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

Candidates should attempt the questions strictly in accordance with the instructions specified in the question paper and in the space prescribed under each question in the booklet. Any answer written outside the space allotted may not be given credit.

Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. :



(For filling by Examiners only)

Evaluator Code :

Q.No	Pg No.	Maximum Marks	Marks	Total
1	1			
2	3			
3	5			
4	7			
5	9			
6	11			
7	13			
8	15			
9	17			
10	19			
11	21			
12	24			
13	27			
14	30			
15	33			
16	36			
17	39			
18	42			
19	45			
20	48			
Grand Total				

Signature

MACRO COMMENTS



IMPORTANT INSTRUCTIONS

CANDIDATES SHOULD READ THE UNDERMENTIONED INSTRUCTIONS CAREFULLY. VIOLATION OF ANY OF THE INSTRUCTIONS MAY LEAD TO PENALTY.

DONT'S

1. Do not write your name or registration no. anywhere inside this Question-cum-Answer Booklet.
2. Do not write anything other than the actual answers to the questions anywhere inside your QCA Booklet.
3. Do not tear off any leaves from your QCA Booklet, if you find any page missing do not fail to notify the supervisor/invigilator.
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DO'S

1. Read the Instructions on the cover page and strictly follow them.
2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
3. Write legibly and neatly. Do not write in bad/illegible handwritings.
4. For rough notes or calculation, the last two blank pages of this booklet should be used. The rough notes should be crossed through afterwards.
5. If you wish to cancel any work, draw your pen through it or write "Cancelled" across it, otherwise it may be evaluated.
6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

Q.1 अप्रत्याशित कर (विंडफॉल टैक्स) से आप क्या समझते हैं? क्या आपको लगता है कि अप्रत्याशित करों से संपदा का प्रभावी ढंग से पुनर्वितरण हो सकता है और अधिक आर्थिक समानता को बढ़ावा मिल सकता है?

(150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Windfall tax? Do you think that windfall taxes can effectively redistribute wealth and promote greater economic equality?

(Answer in 150 words) 10 Marks

Windfall tax refers to tax on Corporations which have earned huge dividend out of global uncertainty or due to any other unprecedented factors. (eg) USA oil Companies earned billions of dollars in oil trade due to Russia Ukraine war leading to demand of windfall tax.

windfall tax for redistributing wealth & economic equality

① Imposing tax → money ~~at~~ hands of Government
↓
economy equality ← Redistribution via welfare measures

- ② Prevents Concentration of wealth → equitable distribution of wealth.
- ③ acts as progressive taxation measure → economic equality among corporations.

but at same time it may not result in redistribution

→ if government does not spend money in equitable manner

→ if taxed highly without taking effect of future considerations

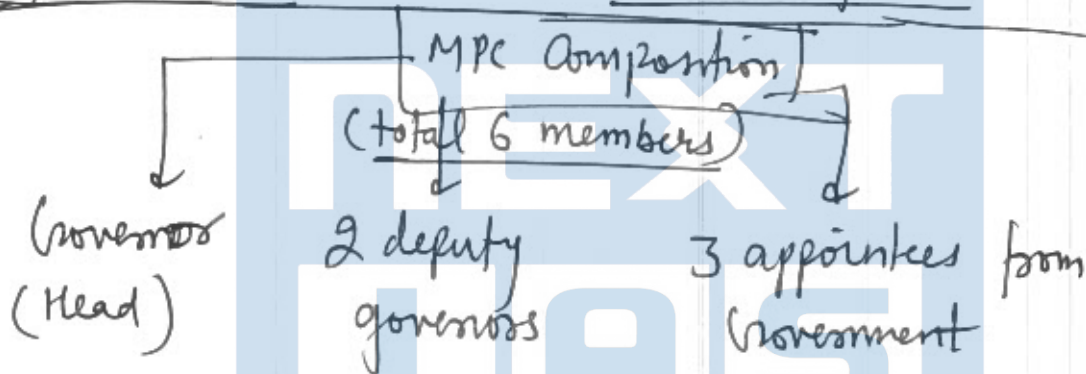
→ May disincentivise corporates → ease of doing business ↓;

for greater economic equality & wealth redistribution, focus on policies based on 'Inclusive growth' which ensures intergenerational & intragenerational equity.

Q.2 नई मौद्रिक नीति समिति (एमपीसी) व्यवस्था के अंतर्गत मुद्रास्फीति लक्ष्यीकरण को क्रियान्वित करने की कथित सफलताओं और चुनौतियों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss the perceived successes and challenges of implementing inflation targeting under the new Monetary Policy Committee (MPC) regime. (Answer in 150 words) 10 Marks

Monetary Policy Committee (MPC) was formed in 2016 under RBI act, 1934 for monetary policy based on 'Inflation targeting framework' to maintain $4 \pm 2\%$ inflation.



Perceived Successes of implementing Inflation targeting

① Inflation Control → Inflation fell under requisite range of $2-6\%$ for most of time.

② Macroeconomic Stability due to clearcut indicators in economy by

Changing Repo rate, Reverse Repo Rate → Policy certainty.

③ Resilient even in global disruptions most of time when other economies collapsed due to Inflation. (e) Pakistan, Sri Lanka.

④ Accountability mechanisms in place → if Inflation target breaches for 3 consecutive Quarters then accountable to parliament.

However perceived challenges

only Governor accountable & not the MPC as whole

no recourse even if target failed to achieve
(e) in past year Inflation ~ 7.1.

Neglecting other aspects of economy & focusing only Inflation.

need of hour is to make changes in MPC framework to broaden its horizon as per need of time.

Q.3 भारत में सतत कृषि को बढ़ावा देने और खाद्य सुरक्षा में सुधार के लिए मोटे अनाज उत्पादन की क्षमता का आकलन कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

Assess the potential of millet production in promoting sustainable agriculture and improving food security in India.
(Answer in 150 words) 10 Marks

Millet are multigrains under Cereals.
FAO declared year 2023 as 'International year for millets' with India declaring year 2018 as National year for Millets. eg Ragi, Bajra etc

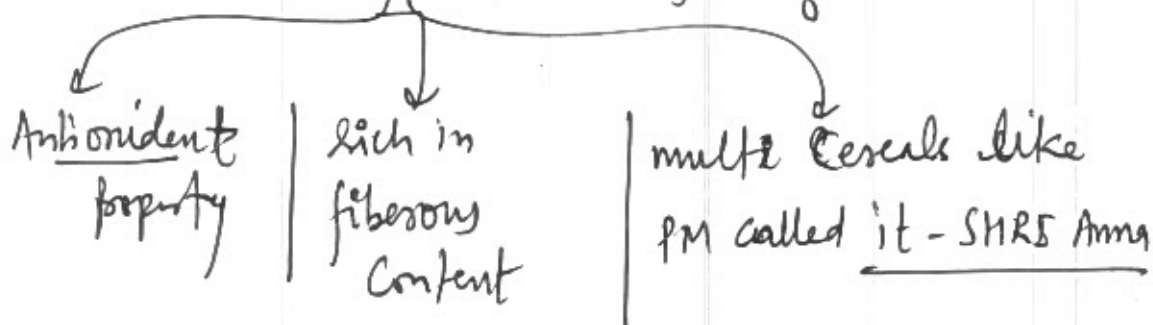
Potential of millet production

Towards Sustainable Agriculture: →

① Can be grown in nutrient poor soils as well plus enhances soil fertility.

② drought resilient crop → Can be grown in dryland areas like Rajasthan.

③ Multi benefits in form of



Towards food security :-

④ enhances nutritional requirements → nutritional security.

⑤ optimum usages of resources by utilising waste lands → food production.

⑥ high productivity due to high yield variety seeds (ex) Area under millets since 1960s reduced to $\frac{1}{3}$ but overall production is increasing.

Concerns :- Still considered as 'poor man's food' → low market demand due to

Changing habits

→ Area under Cultivation is decreasing with time. (ex) $\frac{1}{3}$ wrt 1960s.

Currently India is self sufficient but still ranks poor in Global Hunger Index (122nd), so, focus on millets is needed for nutritional security.

Q.4 जल जीवन मिशन में पेयजल की उपलब्धता और पेयजल तक पहुँच में क्षेत्रीय विषमता को समाप्त करने का सामर्थ्य है। मिशन के महत्त्व पर प्रकाश डालते हुए, वांछित उद्देश्यों की प्राप्ति में अंतर्निहित बाधाओं पर चर्चा कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Jal Jeevan Mission has the potential to end the regional disparity in the availability and accessibility of drinking water. Highlighting the significance of the mission, discuss the underlying impediments in achieving the desired objectives.

(Answer in 150 words) 10 Marks

Jal Jeevan mission was launched in 2019 to ensure tap water to each rural household by 2024. As of today, ~45% of Rural HHs are connected via JJM.

Significance: →

JJM potential to end regional disparity

⊗ Availability of water

→ brings water from water excess to water deficits

→ identifies other channels of water like traditional methods.

→ Bridge gap between water deficient and water rich regions.

⊗ Accessibility of water →

→ At doorsteps of HHs → ease of lines

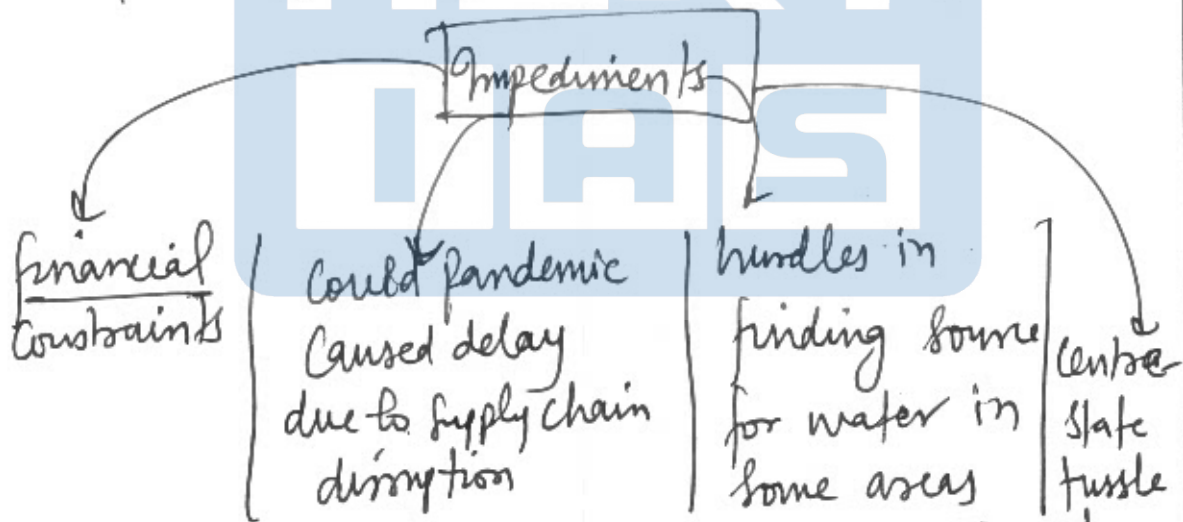
→ At cheaper rates in some regions

& free in others → Affordability

⊗ Others →

→ ensures dignified life to rural HHs.

→ enhanced tap water availability from 17% HHs (Pre JTM) to ~45% HHs (Present).



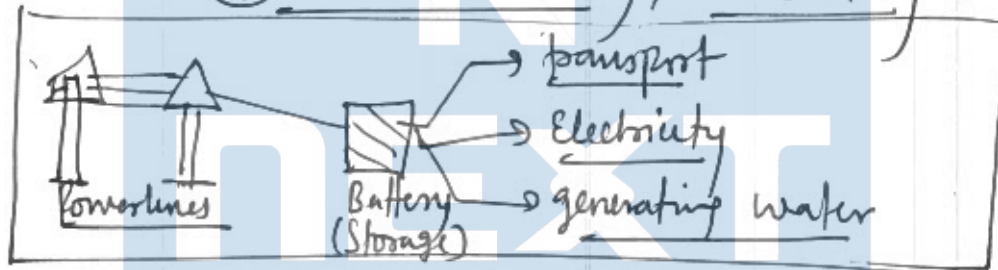
Jal hai to Kal hai Proverb is true | for implementation in some states

and sustainable use of water is needed
by making life cycle & water cycle as one.

Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Battery Energy Storage Systems (BESS)? Discuss its applications and how it can revolutionize the energy program of India. (Answer in 150 words) 10 Marks

Battery Energy Storage Systems refers to processes in which a battery stores energy and later provides it when there is need for same. (eg) Lithium Battery, Na Battery.



Its Applications:

- ① Storage of excess energy → for later use especially during peak hours.
- ② In Transport Sector → To Replace petrol, diesel based transport.
→ Promotion of Clean Transport

- ③ delivers when power not available →
Productivity Increase of Industrial Sector

How it Can revolutionise the Energy Program of India

- [Current] → India Self Sufficient in Energy but
energy fluctuation in peak hours (Summer)
- Transport Sector (largely petrol & diesel based)
 - Wastage of excess power (~57% Capacity utilisation currently)
 - Shortage in peak time & Rainy Season.

[Solution] → [Battery]

[Storage] → future use at time of need.

Recent findings of 5MMT of lithium
reserves in Jammu & Kashmir can be
gamechanger for India's economy &
would be instrumental in Realising
Panchamrit goals

- Q.6 इसरो के गगनयान मिशन में हुए विकास और उपस्थित चुनौतियों पर संक्षिप्त चर्चा कीजिए। समाज के लिए मिशन के संभावित लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss in brief developments and challenges in the Gaganyaan mission of ISRO. What are the possible benefits of the mission for the society? (Answer in 150 words) 10 Marks

Gaganyaan mission of ISRO was recently launched successfully after failed Gaganyaan-II mission (in terms of landing).

Current developments :-

→ Successfully launched & it has successfully completed 4th Stage of operation so far.

→ Currently at right course with aim to land in next month on South side of moon.

Challenges :-

→ uncertainties after failure in landing of Chandrayan II.

→ South side of moon is having

rough terrain, so difficulty in landing.

Possible Benefits for Society

- ① Traces of water which ~~was~~ discovered by Chandrayan I would be ascertained.
- ② Potential mineral resources on moon identification via rover collecting samples.
- ③ understanding the moon's unexplored region
→ more ~~insight~~ insights about its nature.
- ④ Potential for becoming base for future interplanet-ary missions.
- ⑤ Understanding the evolution of moon & infer from evolution of universe.
- ⑥ Would propel young minds about Curiosity in Scientific field.

Successful launch of Chandrayan III has given hope to billions of Indians once again to see other's asteroid's surface.

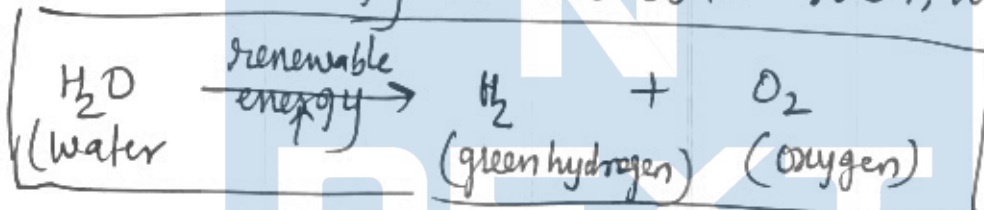
Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सरल और जादुई समाधान हो सकता है"। भारत के राष्ट्रीय हरित हाइड्रोजन मिशन के आलोक में कथन का आलोचनात्मक विश्लेषण कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"Green hydrogen can be the silver bullet in our quest to tackle climate change and pollution". Critically analyze the statement in light of India's National Green Hydrogen mission.

(Answer in 150 words) 10 Marks

Green hydrogen refers to generation of Hydrogen from splitting of water using Renewable energy sources like solar, wind.



India recently launched National Hydrogen mission and allocated funds ~14.5 K crore.

Green hydrogen Can be Silver Bullet to tackle climate change & pollution.

- ① Clean energy form → reduction of pollution.
- ② Abundent Raw material in form of water & zero wastage as O₂ is byproduct

- ③ Hydrogen fuel cells as energy provider for vehicles $\rightarrow$ Zero pollution.
- ④ Excess energy generation from sources can be stored in Hydrogen fuel tanks $\rightarrow$ efficiency + available for later use.

However Some Concerns

- ① Lack of established Supply chain $\rightarrow$ hurdle in Hydrogen energy. (eg) Currently $\sim 1\%$ of Hydrogen generated is green Hydrogen.
- ② Skill gap & Infrastructure requirements in form of fuel tanks, containers etc.
- ③ Hydrogen as gas $\rightarrow$ highly reactive & inflammable

The National Green Hydrogen mission is good start and along with clean technologies like Batteries would lead to reducing Carbon emission in longer terms.

Q.8 हाल ही में जोशीमठ, उत्तराखंड में आई आपदा के आलोक में, हिमालय क्षेत्र में आपदा प्रबंधन और पर्यावरण संरक्षण के लिए मुख्य सबक क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the key lessons for disaster management and environmental conservation in the Himalayan region, in light of the recent disaster in Joshimath, Uttarakhand? (Answer in 150 words) 10 Marks

The recent land subsidence in Joshimath along with other disasters like landslides, Avalanches, glacial lake outbursts etc. led to cost of lives & livelihood on periodic Basis.

Key lessons for disaster management

① Preparedness level! →

→ Early warning system has to be in place

→ Zoning & micro zoning of regions has to be done

→ Structural measures in form of temporary fabricated structures & other measures has to be there -

② Response level : →

- Coordinated effort by all agencies in spirit of 'whole of government' approach.
- Rescue & Rehabilitation with prioritization of vulnerable sections like women, old age.

Key lessons for Environmental Conservation

- development has to be in sync with environmental realities (e) Lapovan Hydro. project one of factor in recent Joshimath.
- Breaking Capacity of ecosystem has to be kept in mind.
- Sustainable solutions like wood material based houses, low intensity Blasts for mining as suggested by [Mishra Committee 1976].

development & environment has to go hand in hand to ensure SDU - 9.

- Q.9 "पंजाब में हालिया कट्टरपंथी रुझानों से पता चलता है कि खालिस्तान का मुद्दा अभी भी उबल रहा है।" हालिया घटनाक्रम के संबंध में कथन पर चर्चा कीजिए और इससे निपटने के उपाय सुझाएँ।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"The recent radical trends in Punjab show that the Khalistan issue is still simmering." Discuss the statement with respect to recent developments and suggest measures to handle it.

(Answer in 150 words) 10 Marks

Radicalisation is everincreasing threat to national security and recent developments in Punjab by demanding 'Khalistan' is point of concern.

Recent radical trends in Punjab & elsewhere

- ① Rise of new Khalistan leader in Punjab under ^{one} banner. ① Amritpal Singh
- ② Social media campaigns in support for Khalistan sympathizers + Attack on Police Station.
- ③ processions & Rallies in foreign land like Canada for Khalistan.
- ④ Protests in front of Indian Embassies in Australia, Canada, USA in recent times.

Measures to Handle increasing Radicalisation

Short term measures:-

- lawful Action under UAPA against those who involved in separatist activities.
- Social media monitoring cells to tap on activities
- use of Force to suppress the activities.

Long term measures

- dedicated legislation to tackle Radicalisation
- developmental approach along with political representation of local people in Punjab.
- International agreements to bring back misconceptions in India.

Radicalisation, if not contained may lead to terrorism so developmental cum security approach is way to go.

Q.10 ड्रोन संचालन में आसानी और साथ ही इसके संचालक की अनामिता, भारत की सीमा सुरक्षा की चुनौतियों में वृद्धि करती है। विस्तारपूर्वक वर्णन कीजिए और सीमावर्ती क्षेत्रों में ड्रोन समस्या से निपटने के लिए सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The anonymity and ease of drone operation contribute to the challenges of India's border security. Elaborate and give suggestions to tackle the drone problem in border areas.

(Answer in 150 words) 10 Marks

India shares nearly 15000 km long land border with 7 nations including Pakistan & China. Recent drone attack on India's Airforce Base from Pakistan side highlights seriousness of situation.

How drone operations Challenge for India's Security

- ① Remote operations → easy operability
- ② Anonymity in Acts → enhanced feasibility for operations
- ③ Carrying Capacity of drones → attacks at ease
- ④ Smaller in Size → difficulty in tracing via Radars
- ⑤ Non-traceability to owners

Suggestions

- ① Stringent drone Rules with 'No flying Zones' over critical border infrastructure.
- ② National drone policy with specific focus on border security.
- ③ effective use of existing technological solutions (e.g.) CIBMS System
- ④ Coordination with local population for 'eye & ears' support on ground.
- ⑤ Anti drone technology with Collaboration of Startup sector.

National Security ensures economic, political & other security for citizens. So, Comprehensive National Security with focus on Cyber Security is need of hour.

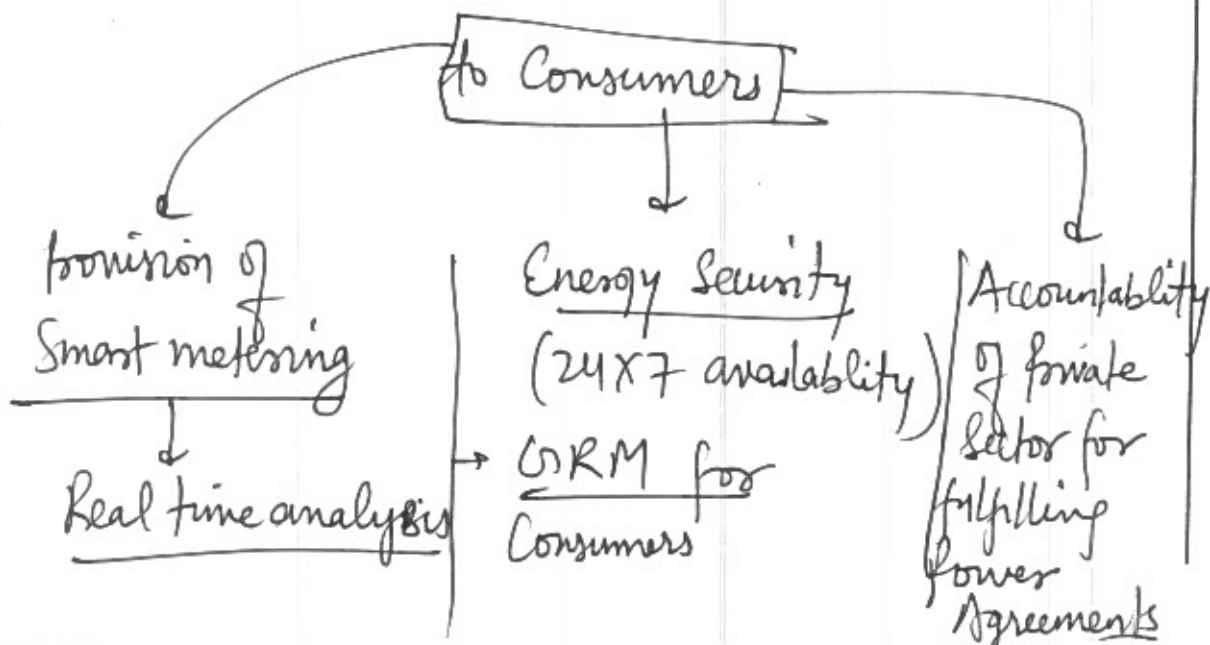
- Q.11 विद्युत संशोधन विधेयक, 2022 उपभोक्ताओं, डिस्कॉम के साथ-साथ पर्यावरण के लिए कई लाभ प्रस्तुत करता है। सविस्तार वर्णन कीजिए। साथ ही इसकी कमियों को भी सूचीबद्ध कीजिए और उन्हें दूर करने के लिए कुछ उपायों का भी सुझाव दीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

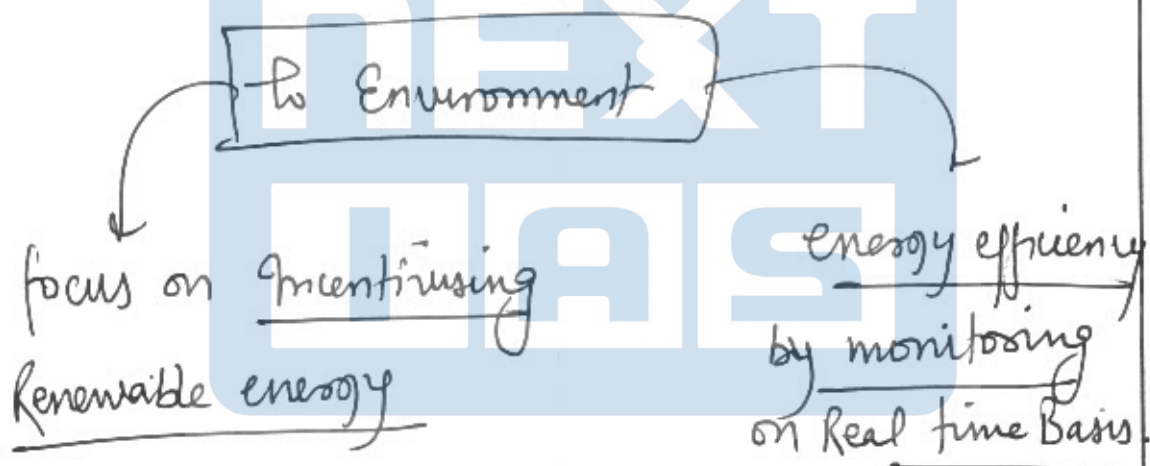
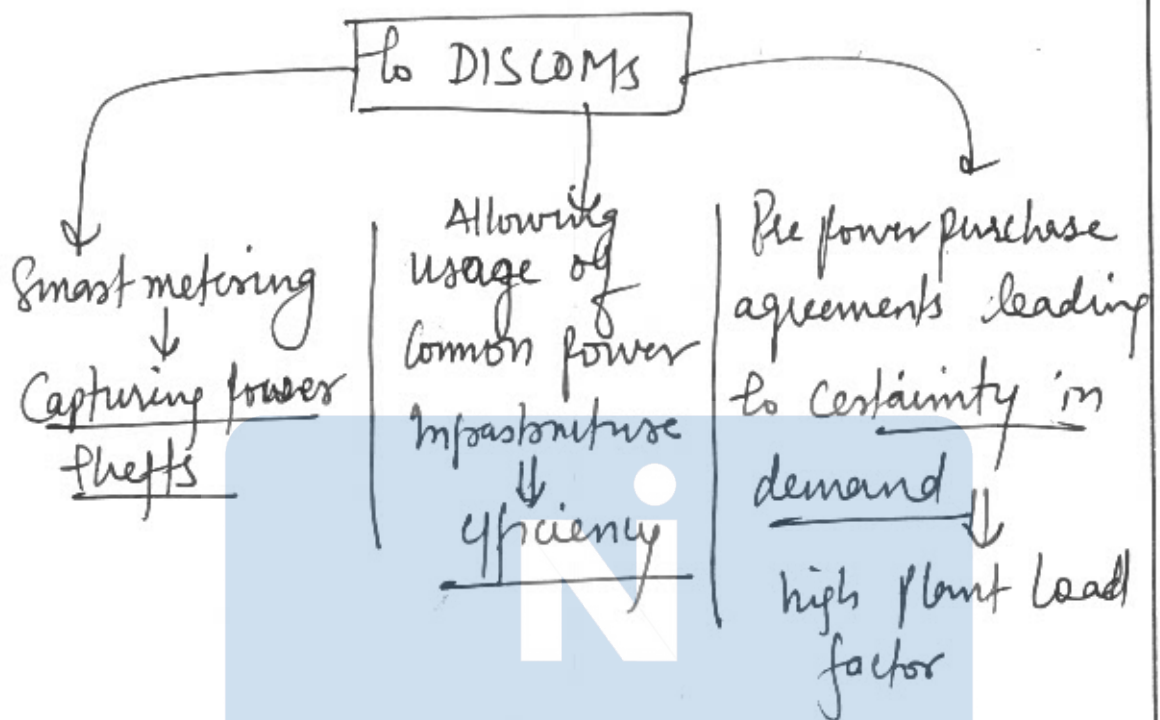
Electricity Amendment Bill, 2022 brings several advantages for consumers, DISCOMs as well as the environment. Elaborate. Also, list out its shortcomings and suggest some measures to overcome them.
(Answer in 250 words) 15 Marks

Currently India's total power generation is ~417 GW with -0.5% short from achieving self sufficiency as per ministry of power.

Electricity Amendment bill 2022 ~~are~~ is Brought in to amend Electricity act 2003.

Its Advantages →





Shortcomings in Bill →

→ Incentivises private sector but financially unviable projects would be a problem.

- Lack of Consultation with state governments
↓
protests in some states
- ⇒ No provision for 24x7 energy security
- ⇒ Not talk about land acquisition & other
infra. costs.

Way forward

- Comprehensive legislation covering land
acquisition to power at homes.
- ⇒ Consultations with All Stakeholders for
better outcome

Energy supply is critical for India
to become developed nation by 2047
as envisaged by PM modi.

Q.12 भारतीय प्रतिभूति एवं विनियम बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्वपूर्ण भूमिका निभाता है। दिये गए कथन के आलोक में, सेबी के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इस संबंध में सुधारों का सुझाव दीजिये। (250 शब्दों में उत्तर दीजिए) 15 अंक

Securities and Exchange Board of India (SEBI) plays an important role in the regulation of the share market and safeguarding the interests of investors. In the light of given statement, highlight the challenges faced by the SEBI and suggest reforms in this regard. (Answer in 250 words) 15 Marks

SEBI → Market regulator of share market (Secondary market) & Capital Bond market & Came into force via SEBI act, 1992.

Role of SEBI

- to create level playing field for All Investors
- to ensure fair trade practices in place
 - ⊕ curtailing Insider trading.
- to maintain volatility in Bond market at time of global fluctuations.
 - ⊕ Halting of trading.

- Grievance Redressal mechanisms in place for consumers.
- settling trade related dispute as well as formation of Committees for issues.
- ④ formation of Committee by SEBI in Adani-Hindenburg Saga.

Challenges faced by SEBI :-

- ⇒ Not entirely Independent → as chairmen directly appointed by government.
- ⇒ Cases of Insider trading in question
④ ex head of SEBI issue.
- ⇒ unorganised & parallel dabba trading
↓
poor Compliance
- ⇒ Resource Constraints ⇒ Lack of development of Bond market to its full potential.

Reforms

- Appointment :-> Independent Committee like appointment of CBI director.
- processes :-> more transparent & Accountable Governance by Amending SEBI act 1992.
- Stringent regulation wroto Insider trading which gives undue advantage to few.

SEBI, RBI are financial institutions & their effective functioning instills Confidence in investors for FDI & FPI.

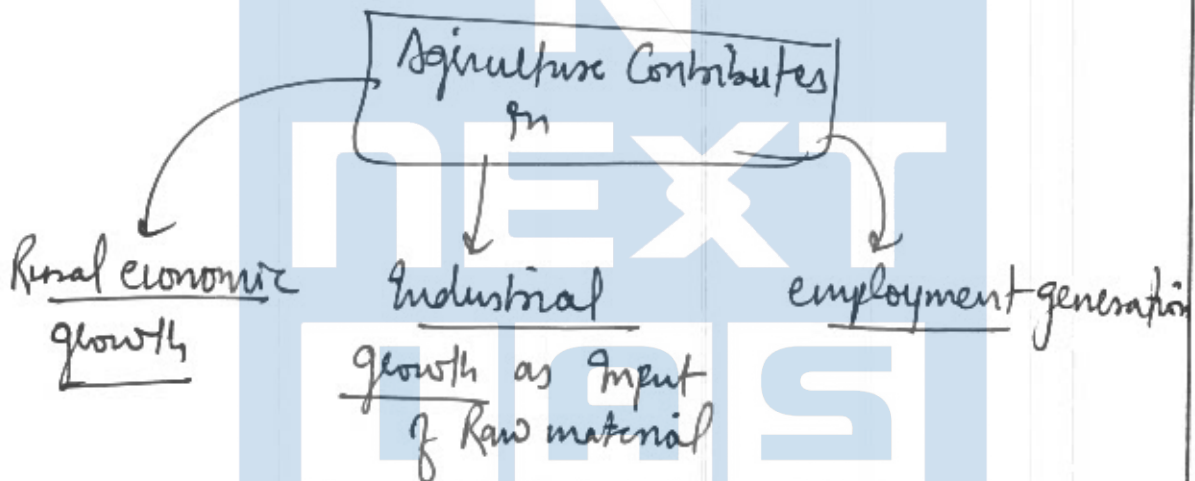
- Q.13 भारतीय अर्थव्यवस्था में एक प्रमुख योगदानकर्ता होने के बावजूद, कृषि क्षेत्र कई बाधाओं से ग्रस्त है जो इसकी वृद्धि और विकास में बाधा डालते हैं। इन बाधाओं पर काबू पाने में प्रौद्योगिकी की भूमिका पर चर्चा कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

Despite being a major contributor to the Indian economy, the agriculture sector is plagued by several constraints that impede its growth and development. Discuss the role of technology in overcoming these constraints.

(Answer in 250 words) 15 Marks

Agriculture sector employs nearly 48% of Indian population & contributes nearly 18% to Gross value added (GVA) in economy.



Several Challenges in Agriculture

Inputs:->

① seeds - mostly farm saved seeds used by farmers → poor productivity.

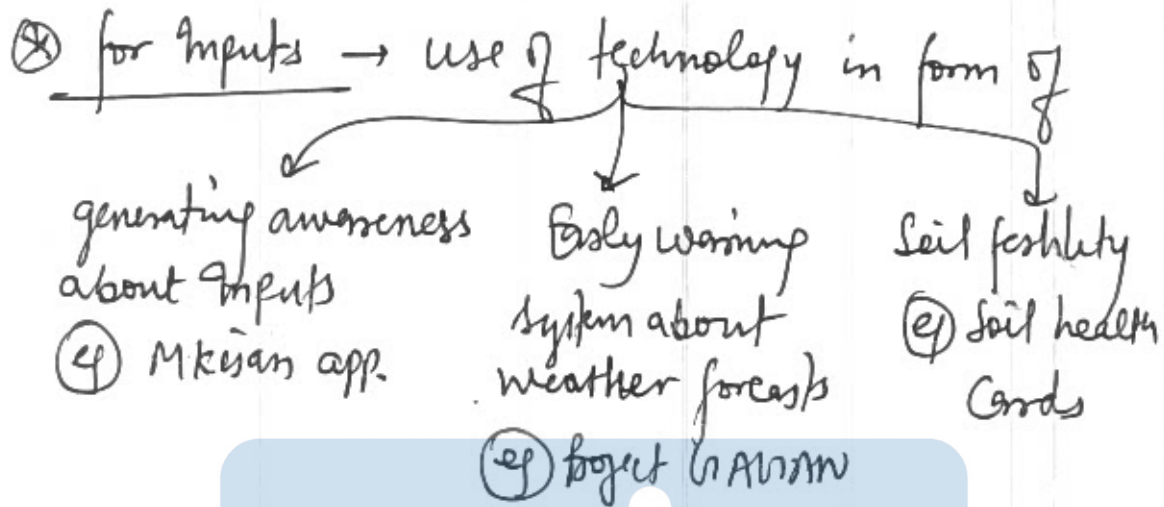
② fertilizers → Skewed ratio 7:4:1 vs ideal (4:2:1) for N:P:K fertilizers

- ③ Mechanisation → ~48% of farmers uses mechanised farms in agriculture.
- ④ Irrigation → largely with North western states. (e) again, less than 50% have access to irrigation -

Outputs

- ⑤ Storage of Agri. produce → Lack of Cold Storage Infrastructure (e) ~95 MMT Capacity exists as of today as cold storage.
- ⑥ Marketing of produce → fragmented APMC markets
- high transport costs
 - price volatility → poor price realisation.

How use of technology can help in overcoming these constraints →



⊗ for outputs :-

- ① Connecting APMCs via eNAM
⊗ currently ~1360 APMCs connected out of ~7000 in India.
- ② Price deficiency mechanisms via use of technology ⊗ Bhavantar Bhugtan Yojana, MP
- ③ use of Satellite data for right harvest.
- ④ Cold Storage technology → Storage

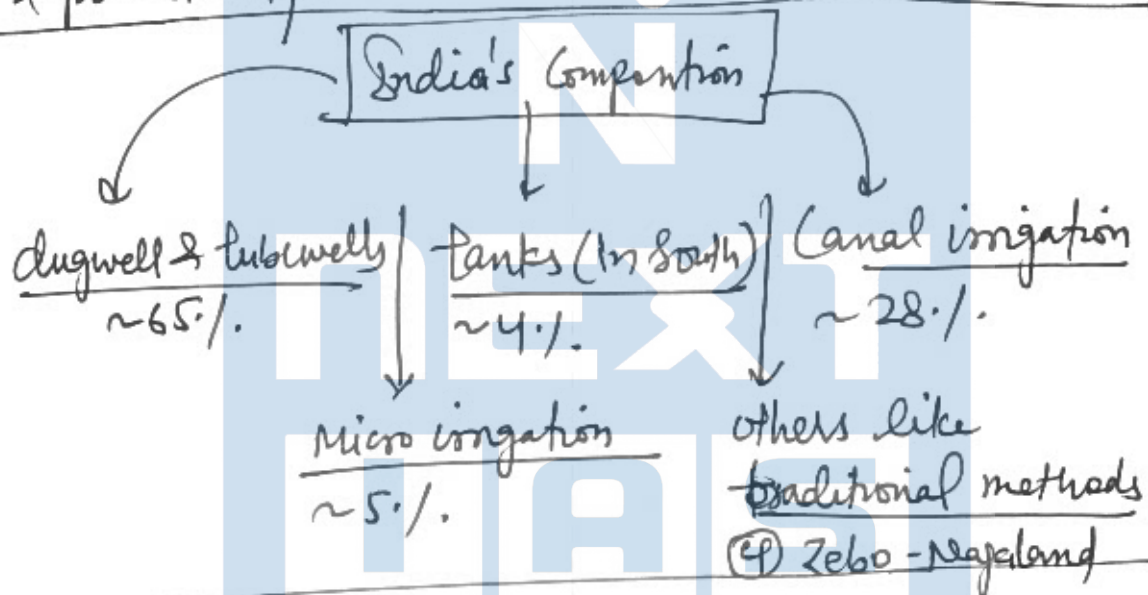
Food Processing Industry Can bring linkage from farm to Sustainability if harnessed well.

Q.14 पर्यावरण एवं प्राकृतिक संसाधनों पर सिंचाई के प्रभाव का मूल्यांकन कीजिए, और कृषि में सिंचाई पद्धतियों की संधारणीयता और समता सुनिश्चित करने के लिए उपाय सुझाएँ। (250 शब्दों में उत्तर दीजिए) 15 अंक

Evaluate the impact of irrigation on the environment and natural resources, and suggest measures to ensure the sustainability and equity of irrigation practices in agriculture.

(Answer in 250 words) 15 Marks

Irrigation is instrumental input in Agriculture by farmers for better production & productivity.



Impact of irrigation on Environment & Natural resources

Positive Impact

① requisite amount of water availability →
Soil replenishment along with production
replenishment. (e.g.) Uttar Pradesh.

- ② Soil fertility maintained → if correct amount of irrigation practices adopted.
- ③ leads to Afforestation → greenery & Natural environment.
- ④ More Area under Cultivation → more production of food grains. (eg) ~ 330 MMT in 2022-23 for India;
- ⑤ growing more crops per year → i.e. intensity of crops → food security.

negative impacts

- excessive irrigation → Soil Salinization & soil degradation. (eg) Punjab belt.
- depletion of Natural Resources → stress on water availability. (eg) NCRWB → ~17% of India's water blocks are overexploited.
- Ground pollution: (eg) ~275 districts have fluoride concentration above desired levels;

→ Skewed availability → Regional divide .

(eg) NW regions well developed in Agriculture
vs Eastern States lacking irrigation .

Measures to Sustainable irrigation

- ① focus on Micro irrigation like drip irrigation for sustainable use. (eg) PM Kisan Sishu Yojana focuses on it.
- ② Interlinking projects → from water deficit regions to water surplus. (eg) Ken-Betwa river link .
- ③ use of technology → precision agriculture via sensors → equitable use of water in fields
- ④ Soil health Cards → soil fertility with sustainable use .

for long term, following Mishra Shah Committee recommendation for water governance & finalising draft water policy is need of hour.

Q.15 परमाणु ऊर्जा और अंतरिक्ष प्रौद्योगिकी के क्षेत्र में क्रमशः डॉ. होमी जहाँगीर भाभा और डॉ. विक्रम अंबालाल साराभाई के योगदान से भारत को रणनीतिक रूप से किस प्रकार लाभ हुआ? (250 शब्दों में उत्तर दीजिए) 15 अंक

How India benefitted strategically from the contributions of Dr. Homi Jehangir Bhabha and Dr. Vikram Ambalal Sarabhai in the fields of atomic energy and space technology respectively?

(Answer in 250 words) 15 Marks

Dr. Homi Jehangir Bhabha (H.J. Bhabha) & Dr. Vikram Sarabhai (V. Sarabhai) were two pioneers in their respective fields who laid foundations for modern India via their contribution in Energy & Space field respectively.

How India has benefitted strategically from Bhabha's Contributions

⊗ Earlier focus on Atomic Energy via 3 phase programme of Nuclear Energy generation

Heavy fuelled water reactors

fast breeder reactors

use of thorium in 3rd stage.



India becoming pioneer in civil nuclear energy. i.e. Currently ~6.7 GW from Nuclear sector.

* Nuclear tests in form of Pokharan I & II in 1974 & 1998 respectively led to

India becoming
Nuclear power
in world

created defence
for hostile
neighbours

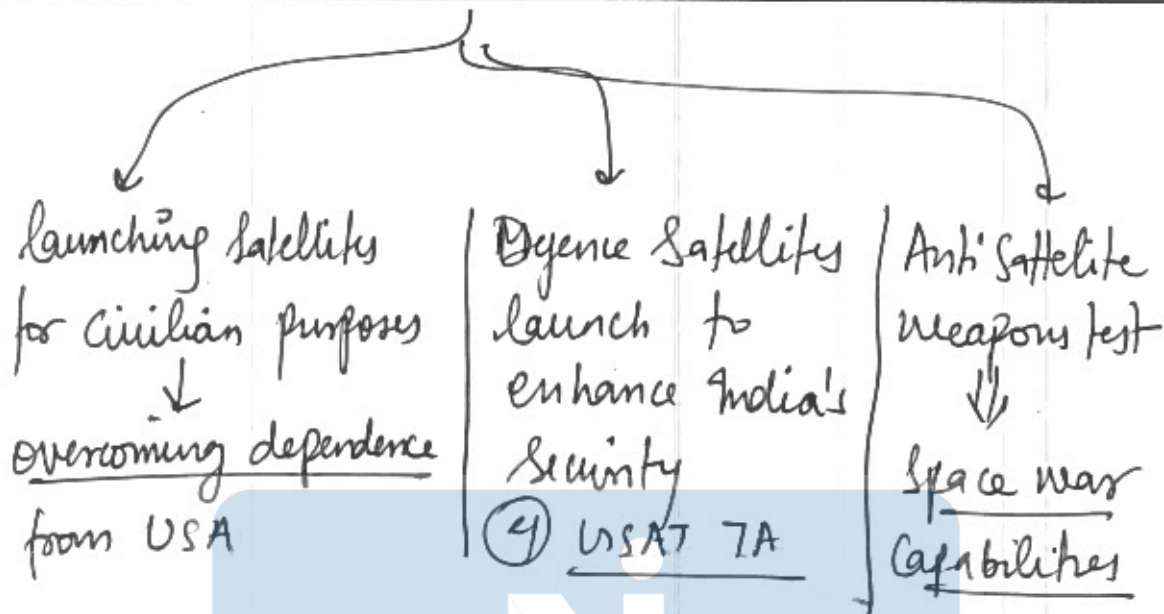
Strategic
Autonomy
in foreign
Affairs.

Overall, the foundation laid by Shabha
Culminated into India becoming nuclear
power in later years.

Strategic Contribution of Sasabhai in Space Sector

⇒ Sasabhai → was head of Space Committee formed
in 1962 which later turned into
ISRO in 1969.

↓
led to proliferation of Space Activities
by India in coming years in form of
↓



with time, the foundation led by
Sasabhai in space is giving dividends
to present generations who is further
taking it forward with Chandrayan-III
as recent successful mission.

- Q.16 जेनरेटिव एआई निकट भविष्य में नवाचार की सीमाओं को आगे बढ़ाने का सामर्थ्य रखता है, फिर भी इसका सामाजिक प्रभाव पर्याप्त चुनौतियाँ खड़ी करता है। सविस्तार उत्तर दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Generative AI holds the potential to push the boundaries of innovation in the near future, yet its societal impact raises substantial challenges. Elaborate. (Answer in 250 words) 15 Marks

Generative AI refers to use of Machine learning and data Analytics to create meaningful information, conclusion or any output. (eg) Chat GPT, Google's BARD etc

Generative AI as tool for innovation →

① Health Sector → use of AI in performing Surgeries based on input by Generative AI

→ Reading Research papers which are lengthy & cumbersome → Simplifying it for use.

② Education Sector → Solving doubts of students in interactive manner

→ writing Short Stories, poems, essays etc. as per demand.

③ Art & Creative Industry → Potential to mark electronic shift in Content generation & Story telling.

④ Technological Advancements & Corporate Sector :-

deep Analysis of data & taking out different Interpretations from it → usability of data Res.

⑤ Societal Applications / Governance →

→ use in Tax returns, Auditing, Interlinkages etc.

→ Smart traffic management, facial recognition using Centralised data base etc

Yet its Societal Implications raises Concerns →

① Proliferation of deep fakes using AI

↓

Promotion of fake news & disharmony.

② Morphed Pics of Individuals for vested interests.

② Data bias threat → Input data
may be bias towards particular race, religion

etc. (e.g.) china using generative AI
against Uighar muslims (Alleged)

③ Societal divide → between haves & have-nots
in terms of Rural-Urban; developed-developing
nations

Way forward

→ Continuous Refinement of data sets

→ global governance on Generative AI is
needed.

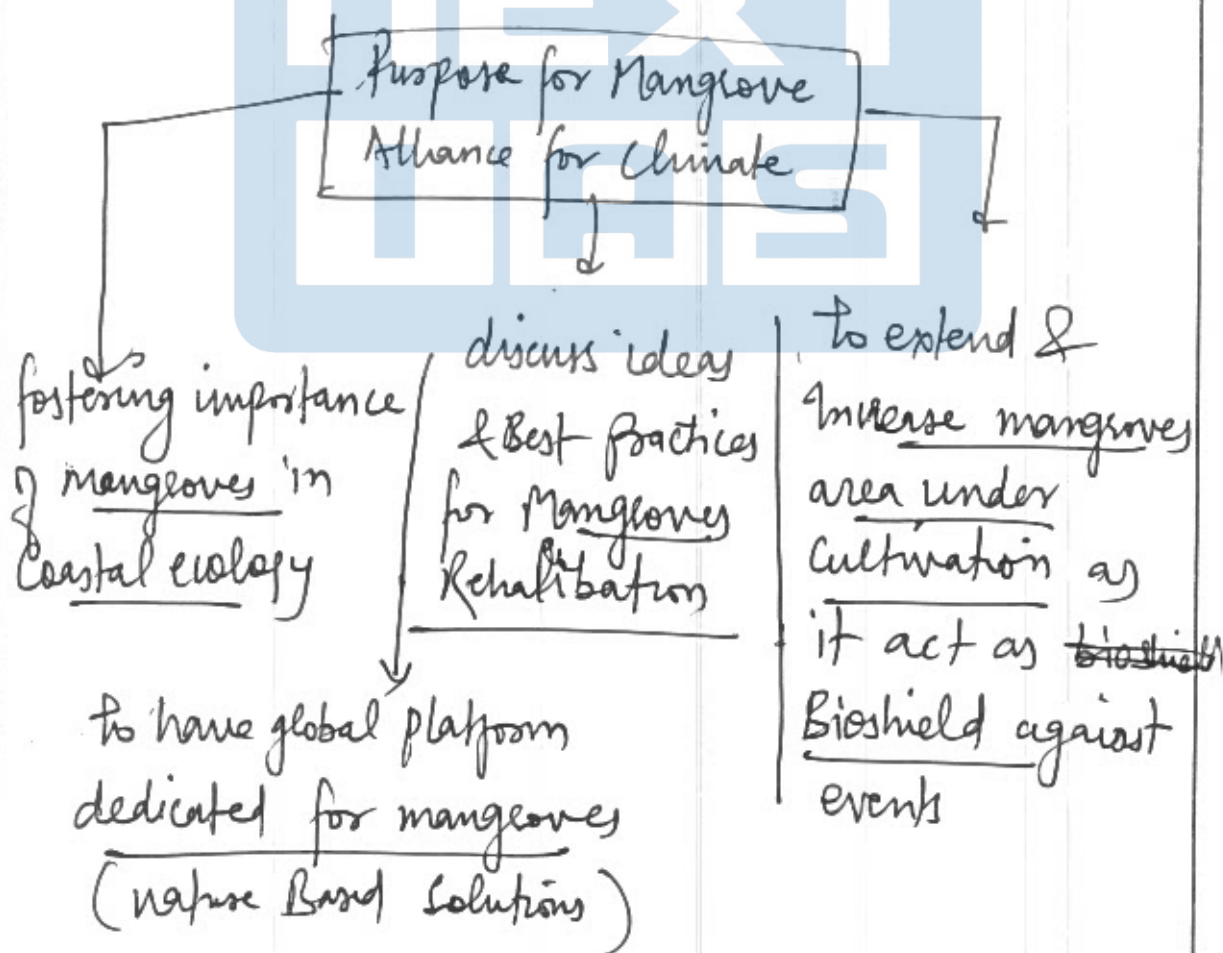
→ Accountability for Actions has to be fixed

Recent initiative of G7 on Global
governance for AI is step in right
direction.

Q.17 नवंबर 2022 में मिस्र में COP27 संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन में लॉन्च किये गए "जलवायु के लिए मैंग्रोव गठबंधन" के उद्देश्य को स्पष्ट कीजिए। उष्णकटिबंधीय देशों की तटीय पारिस्थितिकी को बनाए रखने में मैंग्रोव के महत्त्व पर विस्तार से प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Explain the purpose of the "Mangrove Alliance for Climate" launched at the COP27 UN Climate Change Conference in Egypt in November 2022. Elaborate on the importance of mangroves in maintaining the coastal ecology of tropical nations. (Answer in 250 words) 15 Marks

Recently, COP27 Summit in Sharm El-Sheikh Egypt led to formation of 'Mangrove Alliance for Climate' along with 'Loss and damage fund' to tackle climate change.



Importance of Mangroves in maintaining Coastal ecology

- ① water filtration in coastal areas → prevention of salt water intrusion from oceans.
- ② protection of water bodies by Acting as natural barriers.
- ③ Disaster resilience → first line of defence against disasters like Cyclones, Tsunami.
- ④ ~~Bangladesh employs cycl~~
mangrove rehabilitation in Fiji
- ④ ecological services in form of medicinal plants
- ⑤ Biodiversity promotion → Environmental protection
- ⑥ Rising water levels in tropical regions! → mangroves acts as shield to protect coastal regions.

Way forward :-

→ Promotion of Mangrove rehabilitation with help of Community Participation.

⑨ Ethiopia mangroves rehabilitation can be emulated - UNEP.

→ Climate finance to be in place to tackle climate change.

Mangroves along with Coastal reefs/Corals and wetlands promotion has to be there with Collaboration of nations to ensure SDG 14 & 15.

- Q.18 आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

The Formation of the Coalition for Disaster Resilient Infrastructure brings more robustness to the Disaster Management approach in India. Comment and justify the need for a new strategy to tackle Disasters in India.
(Answer in 250 words) 15 Marks

Coalition for disaster resilient Infrastructure (CDRI) was launched by India in 2019 at Environmental Summit as an effort of India towards Disaster risk reduction.

How CDRI brings robustness to India's approach

- ① Global best practices can be adopted by India which would be shared under CDRI.
 - ④ Japan's handling of Earthquakes.
- ② preparedness measures in sync with Sandaï framework for DRR (2015-30)
- ③ International Collaborations of India with Institutions for best response.
 - ④ Cyclone risk mitigation with aid of World Bank.

- ④ periodic summits & mechanisms leads to disaster related efforts coming at forefront.
- ⑤ 'whole of government' approach envisaged under CDRF can be implemented by India.

Issues in Current Strategy of India in DRR

- ① high on intent, low on execution →
- eg DM plans for 33 disasters exist on paper but lack of effective implementation on ground.
- ② National disaster mitigation fund → exists under NDMA, 2005 but not operationalised.
- ↓
- Reactive approach towards disasters.
- eg Recent floods in Delhi saw no pre planning.
- ③ top bottom approach instead of Bottom's up approach.

④ Lack of Infrastructure at local level →
National disaster management Authority comes into
picture in even small disasters.

⑤ low focus on Manmade Disasters (e) Rail accidents

So, need of hour is to have renewed
Strategy to tackle disasters (⇒)

Bottoms up
approach
as Recommended
by 2nd ARC

periodic mock
drills for disasters
as a proactive
measure

Zoning & Microzoning
of each disaster
along with setting
up of Mitigation
fund at State &
Central level.

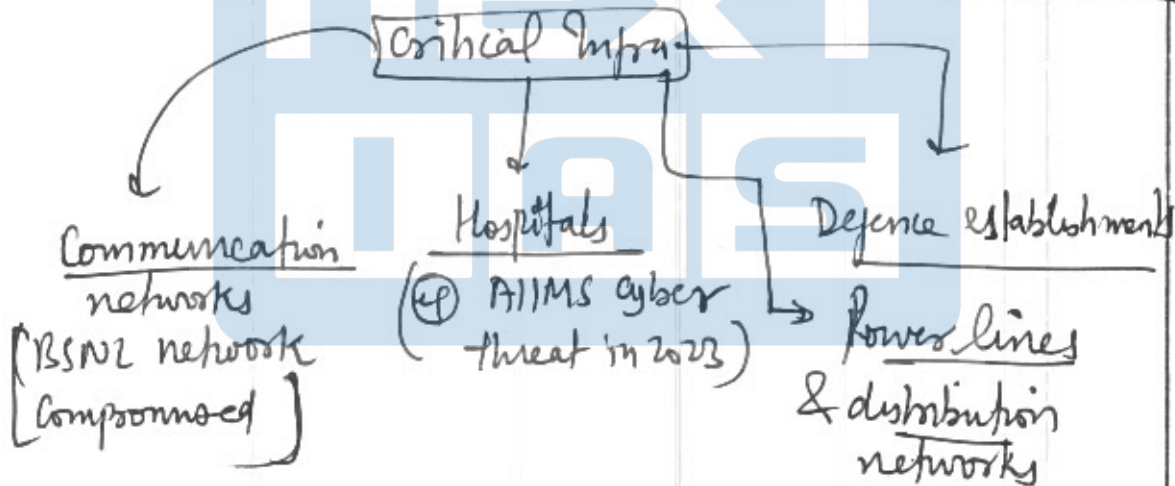
Disasters are act of god but human
losses are act of men. Recent launch of
Disaster risk reduction document by
Panchayati raj ministry based on bottom's
up approach is step in right direction.

- Q.19 महत्वपूर्ण बुनियादी ढाँचे (क्रिटिकल इंफ्रास्ट्रक्चर) और प्रमुख निगमों को लक्षित करने वाले रैंसमवेयर हमलों में हुई हालिया वृद्धि ने मजबूत साइबर सुरक्षा उपायों और नीतियों की तत्काल आवश्यकता पर प्रकाश डाला है। इस प्रवृत्ति में योगदान देने वाले प्रमुख कारकों पर चर्चा करते हुए, विभिन्न क्षेत्रों पर इन हमलों के प्रभाव का विश्लेषण कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

The recent rise in ransomware attacks targeting critical infrastructure and major corporations has highlighted the urgent need for stronger cybersecurity measures and policies. Discussing the key factors contributing to this trend, analyze the impact of these attacks on various sectors.

(Answer in 250 words) 15 Marks

As per recent report, there has been 500% increase in cyber attacks in India during last 2 years with Ransomware attacks like Petya dominating the list.



Why such trends in recent past? :-

- ① Sophisticated technologies in market → easy to target via these tools.
(e.g. use of Drones operated from elsewhere)

- ② Lack of Robust Cyber security related Policy in India → Increased vulnerability.
- ③ digital ecosystem → Largely Imported phones, laptops from China & other nations → Potential threats (eg) Day zero threats
- ④ reliance on foreign cyber ecosystem → critical data leaks potential (eg) Aadhar data leakage issue.
- ⑤ use of AI → via deep fakes & other technologies leading → Ransom attacks.

Impact of these ~~sectors~~ ^{Attacks} on various sectors →

- ① Health Sector → Crippling the system
↓
putting lives of patients on risk.
- ② Communication networks → may lead to leaking sensitive Communication details to enemies.

③ Individual level → Cyber Attack leads to threatening, Blackmailing of Individuals.

④ Industrial Sector → disruption of Supply chains
↓
loss to economy.

due to above impact, need for Robust measures

in form of →

Legislative → Creation of Strong data protection framework.

→ National Cyber security Policy

Executive → digital literacy formation

→ do's & don't at time of Cyber Attacks.

Emulating Kerala's Cyber dome project at national level along with following

Omulsan Rai's Committee's recommendations

for Cyber Security is way to go.

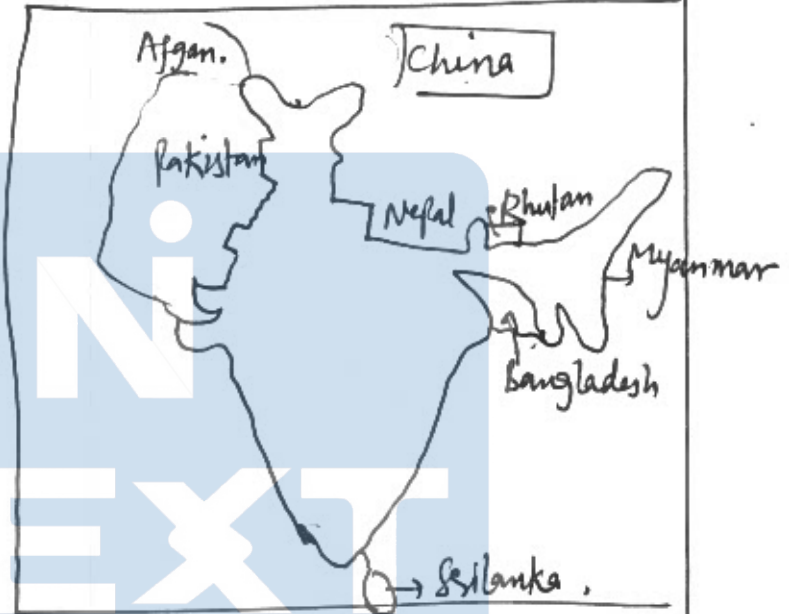
Q.20 सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है?

(250 शब्दों में उत्तर दीजिए) 15 अंक

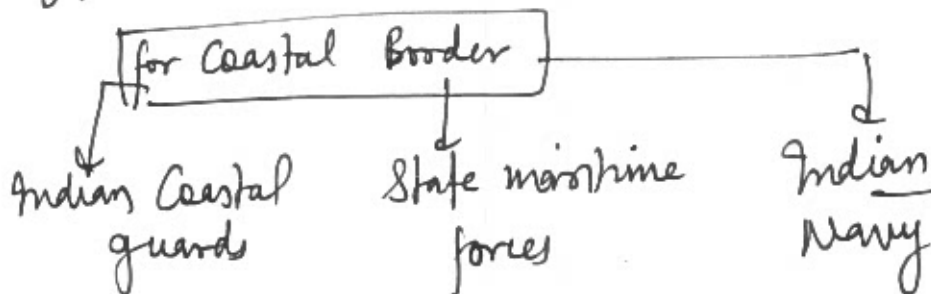
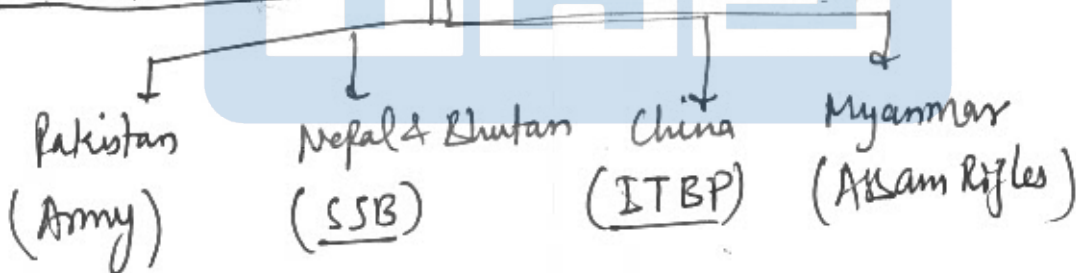
In the context of border security, how can cooperation and coordination between different security agencies be improved to ensure effective and efficient management of coastal and terrestrial borders?

(Answer in 250 words) 15 Marks

India have
total 7500 km
long Coastline &
nearly 15000 km long
terrestrial border
with neighbouring
nations.



[Current mechanism for terrestrial border]



Coordination & Cooperation among forces can be improved via

① Technological solutions → for effective Communication
Coordination among various forces.

② CIBMS as technological tool.

③ Inter Coordination among forces → by
clearly streamlining roles & responsibilities
across borders.

④ Joint task force consisting of All officials
from across the forces → Centralised Command.
↓
faster & effective
actions

⑤ Creation of single Maritime force instead
of various agencies as recommended by
various Committees.

⑥ for territorial border security → All forces can
be under Ministry of defence instead of

dual Control as of now via Home ministry
& defence ministry.

- ⑥ Coordination with security forces across border
for tackling
- Illegal migration
 - hacking
 - Army
 - Human
 - Drugs
 - organised crime & insurgency

- ⑦ Integrated Battle groups → Small numbers, tech-enabled & highly skilled for faster operations.

eg) In emergency hit areas.

The appointment of Maritime Security Coordinator and Chief of Joint Staff is step in right direction but decision for establishing Integrated Theatre Commands like A&N Command would be game changer.

Space for Rough Work

Candidates must not
write on this margin

