NEXT IAS (Head Office) : 27-B, Pusa Road, Metro Pillar no. 118, Near Karol Bagh Metro, New Delhi-110060
Bhopal Centre: Plot No. 46, ZONE-2, M.P. Nagar, Bhopal-462011
Ph: 8081300200, 8827664612 | E-mail : mts@nextias.com | Web: www.nextias.com

Next IAS ID: PTTP220889 TC073 09-08-2023 12:11 PM

(To be filled by candidate)

Name of Candidate : POOJA MALANI

Roll No. :

Registration Number : PTTP220889 Date of Examination : 8-08-2023

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

Test - 3

Code : TC073

MTS IGP Batch 2023

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 : Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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

Next IAS ID: PTTP220889, TC073, 03-08-2023 12:11 PM

Next IAS ID: PTTP220689, TC073, 09-08-2023 12:11 PM

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 Excess amount of tax on ~~on~~ sale of certain commodities when the profit of seller rises above a certain threshold value

(Ex) Amid Russia-Ukraine war, merchant selling petroleum earned huge profits due to slump in oil prices and increasing demand, government imposed windfall tax

Role in wealth redistribution

1) A kind of progressive tax on increasing profit so help in minimising income inequality.

2) Saves consumers and their wealth from impact of inflation

NEXT IAS
Next IAS ID: PTTP220889, TC 09-08-2023 12:11 PM

Candidates must no write on this margi

3) Preserves purchasing power of people's money from being eroded.

Promoting economic equality

windfall Tax → More Tax revenue to government → More fiscal Space → New social expenditure on health and Education

Minimize equality in Education, health and hence boost in workers' productivity ← ←

greater economic equality

fig :-

Constraints

① In longer term, producers may raise prices for consumers

② A kind of periodic measure So can't bring large structural changes

③ limited effectivity in curbing Inflation which occurs due to supply chain disruption

Despite constraints, it can be said that windfall tax is one of the important measures in achieving SDG 10 of minimising inequalities.

सफलताओं और चुनौतियों पर चर्चा कीजिए।

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

Nexus IAS ID: PTP220889, TC073, 09-08-2025 12:11 PM

RBI Act 1134 empower reserve bank of India and Government of India to set ~~to~~ inflation targets for monetary policy with consensus.

Targeted inflation rate :→ 2% - 6%.

Success of implementation

(1) Excess money supply is curbed by contractionary monetary policy, thus easing inflation. by open market operations

(2) As government is present, effective measures to be taken by fiscal policy can also be ruled out.

(3) To create demand, expansionary money policy is followed which

in turn gives push to business cycle.

Challenges in implementation

(1) Liquidity Trap ⇒ People hold on to money rather than spending, in that case expansionary monetary policy fails.

(2) Populist measures by government - creates excess money supply → inflation which defeats purpose of contradictory monetary policy in curbing inflation.

Hence, to have ~~to~~ inflation under control, healthy coordination between RBI and government is need of hour.

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

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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

Recently Prime Minister of India had called millets as [Shri-Anna] which has brought millets to limelight again along with declaration of 2023 as [International year of millets] by UN.

Role in promoting Sustainable Agriculture

↳ [Drought Resistant] ⇒ Amid dangers of climate change, when 60% of farming is rained, millets are capable of growing in water scarce conditions (Eg - Rajasthan - home to 40% of millet production)

↳ [Soil fertility] ⇒ less amount of chemical fertilizers and pesticides are needed which decrease harmful effects like eutrophication of water bodies.

NEXT IAS
Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Candidates must n
write on this marg

↳ No leaching can preserve ground water and helps in enriching soil replenishment

↳ Zero methane Emissions decreases greenhouse potential of agriculture

Thus, No Greenhouse gas
Soil Fertility
Less demand of water
Reversing water pollution
→ Sustainable and Responsible Agriculture

Eg: millets → Sustainable Agriculture

Role in improving food security

1) Known as [nutri-cereals] having protein and nutrients more than other cereals.

2) [Famine Reserves] available when there is no crop production due to no rain.

3) Affordability → Price less than rice and wheat

4) Integration of millets with mid day meal and PDS ensure a balanced diet

(Eg) Tamil Nadu — Ragi khichdi in schools

Steps Taken → 1) millets institute of excellence at Hyderabad

→ 2) Global recognition at G20 summit

Hence, millets help in achieving SDG 12 (sustainable production) with SDG 2 of zero hunger

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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, निहित 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

India faces a problem of water stress with around 600 million people don't have access to drinking water coupled with regional variations in water availability.

- NOTI Nayog



Fig :- Regional disparity in water

Jal Jeevan Mission is aimed at

1) Providing Pipe water in all rural households by 2024

2) Efficient water management to reverse trends of water pollution

3) Groundwater recharge

NEXT IAS
Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Significance of mission

(1) Recognizing right to clean water as fundamental right under A-21

(2) Water management committee for cluster of villages with women head and 50% women members → developing them as community leaders

(3) Participatory policy design by taking inputs from locals and utilising indigenous knowledge

(Ex) - Traditional rain water harvesting structures

Impediments in mission

1) Poor coordination between different departments

2) No penal provision for industries operating near water sources and polluting them

3) Lack of awareness regarding scheme

(Ex) CPCB and CGWB-poor information sharing regarding groundwater

Way Ahead

1) Awareness in community about sustainable use of water

2) Enabling circular economy as mandatory provision by industries

(Ex) AMRUT have these provisions

3) Proper coordination by integrating schemes

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 सकती है। (150 शब्दों में उत्तर दीजिए) 10 अंक

Name: NEXT IAS, ITT-220689, TC073, 09-08-2024 4:21:14 PM

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 refers to the process of converting chemical energy to electrical energy by using some Chemical reactions in presence of electrolyte.

A step ahead, Battery energy storage system (BESS) fulfills two functions

1) Production of electrical energy
2) Working as a storage of electricity till the time of need.

Energy stored in it can be used by simply attaching the appliance with wires

(Eg - E-battery in e-vehicles

Multiple Applications

(1) Transforming mobility to electric vehicles and sustainable transportation

(Eg - E-Rickshaws operating on battery

NEXT IAS
Next IAS ID: PTTP220889, TC078, 09-08-2023 12:11 PM

Candidates must no
write on this margi

(2) Electrification of remote areas which are out of reach from grid power

(Ex) - Battery and inverters can be carried to produce electricity.

(3) In textile sector, it can ensure uninterrupted supply.

(Ex) - In UP, Powerlooms facing regular power cut use BESS to continue operations.

How it can revolutionize Energy program

India's thrust on energy transition

↳ Looking for alternate source of energy — Sustainable and profitable

↳ Green hydrogen Energy mission

→ BESS will enable safe transportation of hydrogen energy and make it accesible to all sectors

↳ Also it can diversify energy sources from solar, wind to others like Lithium.

Recent steps like FAME scheme, providing subsidy on e-vehicles are right steps in this direction

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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 is a dream project for India which promises to take humans to space.

Development in mission

1) Training of Astronauts with cooperation from Russia
2) GSLV Mk-III will be used → manifestation of India's space capabilities.

Challenges in Gaganyaan

(1) Initial costs of programme are high and lack of private finance puts burden on government exchequer.

Next IAS ID: PTTP220889_TS073, 09-08-2023 12:11 PM

Candidates must n
write on this marg

(2) Dilemma for govt where to spend?

↳ people living on earth and dying of hunger
↳ or on to send people to space.

(3) Possible Benefits of mission for society

1) Pride in country's space program
↓
Boost moral of youth and they'll desire to go for research purpose

2) Better communication capabilities and remote sensing images → help in quick response to a disaster.

3) 'Space Tourism' - a niche sector will be developed - creating jobs → addressing unemployment and poverty.

← Thus, 'Gaganyaan mission' is a bunch of promise - some steps like attracting private sector via INSPACe and NSDL are right steps in this direction

Next IAS ID: PTTP22[illegible], XC073, 09-08-2023 12:11 PM

Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सस्ता 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

Budget 2022 gave a push to National Green Hydrogen mission by allocating a specific amount for its propagation.

Role in tackling climate change

1) **Green Energy** – Currently, 50% of power comes from thermal sources → Global warming causing climate change. Hydrogen being green source can reverse this trend

2) **Low Carbon footprint** of energy intensive process (like transportation) can ensure
   - Environment friendly lifestyle
   - (Eg) Hydrogen fuel cell vehicle – pro poor policy as cost of mobility will also come down

3) **Sustainable Agriculture** as ammonia for urea can be produced from green

Candidates must no write on this margi

hydrogen → less pollutig and less greenhouse gas emissins.

Role in curbing pollution

Decarbonizationg → No Air Pollution
1) Transport

2) Use of Hydrogen in Carbon capture and utilisation → can curb water, soil and ocean pollution

3) Sustainable Agriculture

Challenges

→ Initial investments are high
→ need for economies of scale as Power yields from single plant is low.
→ Behavioural change in peoples' attitudes is desirable.

Therefore, need is to create a wholesome policy push to green Hydrogen by integrating it with other sector like agriculture, transportatin to achieve SDG 7 & increasig allen to greenness

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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 है? (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

Joshimath land subsidence was caused by unsustainable development of infrastructure which leads to cracks in houses and a series of disasters including landslides and earthquakes.

Lessons for Disaster Management

1) Unchecked infrastructural development in tourist areas should be avoided.

2) Proper and regular audits of buildings are necessary.

(Eg) - Hotels were operating in Joshimath without proper EIA (environment assessment)

3) Stakeholder discussion and locals' input should be taken into account in preparing rehab efforts for disaster management

Next IAS ID: PTTP220859, TC673, 09-08-2023 12:11 PM

Candidates must n
write on this marg

(Ex) - People of Joshimath are still protesting for ~~new~~ ~~hor~~ ~~kot~~ relocation to safe places, Just one time compensation was given to them.

Lesson for Environmental Conservation

(1) Big projects like hydro electricity generating dams should not be constructed at seismically weak areas

(Ex) Tapovan vishnugad Power project was initiated despite committee's recommendation

(2) Sustainable tourism by education tourists can be initiated.

(Ex) ↳) No use of plastic products

↳ 2)

(3) Learning from best practices and using existing infrastructure

Case Study :- Odisha Mangalajodi Tourism

→ Bird watching promotion → tourists are educated, the live in house of locals
→ additional income source for locals
→ new lifestyle based tourism model

The need of hour is to revisit our ancient tradition of respecting nature Earth as highlighted by Atharvaveda

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

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

Khalistan was a separatist movement initiated during post independence era and it soon take form of Punjab insurgency. In which localites were against the state as they were radicalised by Saint Bhindarewala.

Recent radical trends which shows existence of Khalistan issue :—

1] It was alleged that pro-Khalistanis are supporting farmers' protests in Punjab

2] Recent Mob attack on Punjab to Chandigarh police station to force Police to release a culprit.

3) Emergence of another charismatic leader who unfurld Khalistani flag at Red fort.

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Measures to address the issue

1) Filling governance deficit by active resolution of grievances of small and marginal farmers. Addressing their fears of contract farming by stakeholder discussion.

2) Arranging cross cultural events which can curb separatist tendencies being created by some anti-national elements (by) - on lines of Kashi sangam event, Punab dedicated event can be carried out.

3) Information and education about Sikh Gurus - Guru Nanak Dev ji to teach tolerance to masses reversing trend of fundamentalism.

4) 24 x 7 border surveillance by using suspicious, upon border communication by armed forces.

Along with this, impartial investigation in any issue by police forces and defeating false allegation can bridge trust deficit between people and administration.

Next IAS ID: PTTF22a0373, 09-08-2023 12:11 PM

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

Recently drone attacks in form of bombs dropped using unmanned aerial vehicles ~~was~~ were observed in border district of Jaisalmer in state of Rajasthan.

Drones :- Challenge to Border Security

(A) Anonymity facilitating drones

↳ Drones can be controlled remotely by anyone so difficult to trace operator.

↳ No need of identity documents to purchase them. ~~unlike~~ like other firearms.

(Eg - Militants in Eastern India can easily use them.

↳ Multiple applications

(Eg 1) In smuggling of drugs [Eg - North East]

2) Use by state actors in espionage

[Eg - In Jammu Kashmir, Pakistan operated drones were spotted]

Next IAS ID: PTTP220889, TC073, 29-08-2023 12:11 PM

Candidates must no write on this margi

(B) Ease of drone operation

↳ Easy to use even by kids, not much technical know-how is needed.

↳ Can cross terrain difficulties which conventional military vehicles find difficult to cross

[Ex - India-Myanmar borders have deep forests but communication via drones is easy]

↳ Difficult to differentiate between legitimate and illegitimate users or local population is also engaged in it.

Suggestions to tackle problem

(1) KYC should be mandatory to purchase drones.

(Ex) - DGCA new guidelines

(2) "No Fly Zone" should be declared in areas near to be International borders

↳ It will be easy to identify and differentiate them.

(Ex) - LBSNAA, Mussoorie has a dedicated no fly zone.

(3) Radio Jammers can be used to nullify drone operation operated from cross border.

Further, technological capacity of armed forces need to be enhanced to avoid crisis due to drones [Shekhatkar committee]

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।

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

(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

Electricity Amendment Bill, 2022 is a progressive step in revolutionizing electricity services by enhancing it's accessibility, availability and affordability

Provisions of Bill

*) It enables 'right to electricity' for consumers by a provision of complain if not getting 24×7 supply

*) DISCOMs will get acces to real time Power and price will be discovered on basis of green term ahead market.

*) Bundling of non renewable with renewable power is allowed to ensure non interrupted supply

*) ~~Mandatory disclosure of~~ Gradual increase in renewable share of electricity is encouraged.

Next IAS ID: PTTP220889, TC673, 09-08-2023 12:11 PM

Advantages for consumers

1) Rights based approach in accessing electricity
2) Active and timely grievance redressal (EG - can demand compensation measures)
3) They will get for what they will pay
4) Uninterrupted power supply

Advantages for Discoms

1) Access to wider market will enable discoms to operate at their full capacity
2) Economies of scale will be possible which will decrease aggregate technical and commercial losses
3) Help in fulfilling renewable purchase obligations (RPO)
4) Access to real time power market help in understanding demand dynamics → adjusting operations accordingly.

Advantages for Environment

1) Dependence on thermal power (~50%) will eventually decrease

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

2) Smart meters will help consumers to live a sustainable life' as acting monitory of electricity → alter consumption levels.

3) Carbon footprint of electricity generation will decrease.

4) Green sources like hydrogen will be promoted and beneficial for environment

Shortcomings

1. Initial cost of Smart meters is high
2. Burden to be shared by consumers
3. Debt ridden discoms find it difficult to adjust operations according to demand dynamics
4. In bundling, share of non renewable might surpass renewable energy defeating the purpose
5. Delay in resolving grivances → no penal provision in that

Measures to overcome

1) Seasonality of renewables should be addressed by enhancing hybrid Power production
2) Cost of smart meters can be subsidised
3) making process of demanding compensation easy for consumers

Candidates must n
write on this margi

भारतीय प्रतिभूति एवं विनिमय बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्त्वपूर्ण 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 is a statutory body under SEBI act which provides legal backing to its responsibility of regulating share market.

~~Challenges faced by SEBI~~

SEBI works for protection of investors' interests in following ways

↳ i) Regular monitoring of share prices to avoid distress sale

↳ ii) Rules like T+2 settlement cycle to fasten transaction process

↳ iii) Investor education platforms - a guide for responsible investment

Next IAS ID: PTTP220889, TC073, 09-06-2023 12:11 PM

Challenges faced by SEBI

(1) Poor compliance by major corporations regarding audits

Eg - Recently, it was revealed, Adani companies haven't been audited from 3 years.

(2) Stock market scams have diminished image of SEBI as regulator.

Eg Harshad Mehta Scam of 1992

(3) Poor technical capability in preventing insider trading

(4) Lack of corporate governance by senior professionals are involved in dishonest practices

Next IAS ID: PTTF-226889, [NOTE] 09-08-2023 12:11 PM

Candidates must n
write on this margi

Reforms needed

(1) Collective code of conduct (3C)

for

- Major corporations
- Influential persons
- Professionals

(2) Penal provisions for non compliance with Auditing standards and regulations should be added under SEBI Act.

(3) Use of emerging technologies like Big Data, AI should be used to curb Insider trading.

Next IAS ID: PTTP220889, TC073, 08-05-2023 12:11 PM

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 is considered as backbone of Indian economy as it contributes around 18% of GDP and employs 46% of workforce. It is a prime occupation of rural India.

Constraints impeding growth and development

(1) Poor irrigation efficiency (~35%) due to old methods like flood irrigation make farming impossible in water deficit areas

(2) Impact of climate change in form of drought → decrease crop production and cause land degradation [(Ex) - drought causes 6% of GDP (OPCC)]

(3) Overuse of fertilizers decrease soil fertility and cause eutrophication of water bodies → making agriculture a polluting livelihood

Candidates must n
write on this margi

(4) Poor integration in supply chains cause diminished performance of agri exports
(Ex) India's share of agri export = 2% in world trade

(5) Lack of cold chain and storage facilities cause wastage of food items

(6) Poor disbursal of agri credit to small and marginal farmers
(Ex) - only 15% of total credit reaches to them (RBI)

(7) No timely disbursal of compensation to farmers on account of some disaster due to improper assessment of damage.

These factors inhibit growth of agri culture as a productive activity and hinders it's modernisation.

Role of technology in Overcoming

(1) Drip Irrigation can enable precision farming, increasing irrigation efficiency (~90%)

(2) Biotechnology in form of GM crops can produce variety of crops which are drought resistant
(Ex) Bt cotton is drought resistant

NEXT IAS
Next IAS ID: PTTP220880, TC073, 09-08-2023 12:11 PM

(3) Use of drones to sprinkle pesticides and technique like fertigation will bring down quantity of fertilizers needed → decreasing production cost

(4) with vermicomposting, bio-pesticides, farming becomes sustainable and organic, demand of agri products will rise in world market

(Ex) Demand of Organic tea ↑ in Canada.

(5) Use of artefical intelligence and big data

↳ Enable farmers to sow seeds at right time to get maximum yields

(Ex) - gujarat AI farming model

↳ Big data analytics help in tracking supply chain and identifying loop holes

(Ex) - Integration of local farmers in local supply chain then integrating with global ones

~~(6) Internet of things can enable operation of cold storage~~ (6) Development of cooling technology in form of refrigerated boxes → can reduce wastage

(7) Use of drones to assess damage to and remote sensing satellites enable timely disbursal of compensation

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Candidates must n
write on this margi

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

Agriculture contributes to 80% of ground water extraction majorly needed for irrigation. 60% of farming in India is rainfed, this makes optimum utilisation of water most important.

Impact of Irrigation on Environment

1) Soil fertility → flood irrigation keeps whole field in water for long duration → decreases regenerative capacity of soil → soil pollution

2) Mixing of fertilizers can cause leaching → pollution of groundwater

3) Anaerobic conditions of paddy fields
↓
Large scale methane emissions
↓
Global warming and climate change

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Ex Agriculture accounts for 24% of global methane emissions [Global Methane Report, 2022]

Impact of irrigation on natural Resources

1. **Water** ⇒ Poor irrigation efficiency (~35%) leads to wastage of water
   - ↳ water scarcity in rainfed areas
   - ↳ fertilizer and pesticides with water runoff leads to eutrophication of water bodies.

2. **Biodiversity** ⇒ Excessive sedimentation in water bodies and cause
   - i) Coral Bleaching
   - ii) Fish kills due to expansion of dead zones
   - iii) Algal Blooms

3. **Population** ⇒ Leaching to groundwater (+) Groundwater over extraction
   - Land Salinisation and water scarcity
   - Loss of human capital

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM
Candidates must n
write on this margi

Measures to ensure sustainability

(1) Drip and Sprinkler Irrigation should be available at subsidised rates to small and marginal farmers (<2 ha)

(Ex) Par Krishi Sinchayee Yojana

(2) Using drones for fertilizers and pesticides to enable precision farming

(Ex) Kisan drones in Budget 2022.

(3) Use of emerging technologies

case study :- Gujarat Tech farming model use of AI and internet of things

→ artificial intelligence giving exact information on when to irrigate fields

→ Internet of things controlling timely on off of equipments

(4) Proper Agri extension services to farmers

(Ex) Krishi vigyan kendras.

Further, promotion of organic farming, sustainable agriculture via participatory guarantee scheme can yield better results due to social influence and peer pressure.

Next IAS ID: PTTP220889, TEST 3, 09-09-2023 12:11 PM

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

The emerging field in which India is excelling today- Atomic Energy and space technology are legacy of two prominent people Dr. Homi Jahangir Bhabha and Dr Vikram Sarabhai

Benefits in Atomic Energy

↳ Dr. Homi Bhabha designed three stage Nuclear programme of India

- Stage I :- Pressurised heavy water reactor - Uranium based
- Stage II :- Based on Plutonium which was generated in Stage I
- Stage-III ⇒ Based on Thorium

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM
Candidates must n
write on this margi

↳ India became a successful nuclear power after operation Smiling Buddha.

↳ Nuclear power can be used peacefully - It's demonstration by India in Nuclear electricity has prepared grounds of global discom

↳ India advocates for non-proliferation and disarmament

↳ Establishment of Bhabha Atomic Research Centre (BARC) ~~advoc~~ accounts for research and development at atomic level.

↳ Emerging fields like nano-technology, Quantum technology - all are based on application of molecules at atomic level. So, base prepared by Homi Bhabha - used in harnessing current trends.

Next IAS ID: PTTP220389, TC073, 09-08-2023 12:11 PM

Benefits in Space Technology

- Dr. Vikram designed India's space programme and gave direction to ISRO
  - ↳ Development of Polar satellite Launch Vehicle (PSLV) → now launching satellites of developed neighbours like - US
  - ↳ Man behind Chandrayaan-1, Rover-lander to study surface of moon
  - ↳ Bringing remote sensing satellites and Geosatellite communication satellite and making way for their peaceful use in society.

(Eg) → CARTOSAT useful in disaster management
→ GSAT series for army communication

Hence, the space legacy which India has today and is recognised by developed countries as shown in NISAR (NASA-ISRO joint mission is given by Dr Sarabhai.

Next IAS ID: PTFP220689, TC673, 09-08-2023 12:11 PM
Candidates must no write on this marg

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

Genreative 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 artificial intelligence is based on transformer technology which makes possible to get results from web- in conversational mode.

A chatbot based on generative AI can converse like humans and give quick response. (Ex) - Microsoft's Open AI- Bard.

Potential to push Boundaries of innovation in all fields:-

(1) Education → Students can interact with chatbots with their common queries → get them resolved quickly. This ensures increased productivity in devices also, Chatbots can be used to create test papers and after classroom support to students

(Ex) Coursera's Chatbot giving cliche details about course

Next IAS ID: PTTP220869 TC073 09-08-2023 12:11 PM

(2) **Agriculture & extension services** can be provided easily using chatbots in vernacular language via whatsapp

(Ex) - In India, rural development ministry launches chatbot for whatsapp to address farmers' queries. They can ask in regional language and get voice response

(3) In curbing fake news and disseminating official information amid crisis

(Ex) **Mygov - corona helpdesk** resolving quarantine queries and maintaining social distancing

(4) **Business and Markets**

↳ Quick ~~custom~~ resolution of grievances of consumers → boosting effectivity

↳ Easy to record customer feedback by conversing with them using chatbots.

(Ex) - Each commercial website popup - "How may I help you" icon

Candidates must n
write on this margi

Societal Impact and Challenges

(1) Use by students to do homework
↓
Declining morals and value of hardwork → Plagiarism / content

(2) Human biases in responses can reflect

(Ex) - Facial recognition tech in US found to have racial biases

(3) Can be used to spread fake news which can lead to mob violence and communalism

(4) In near future, Generative AI can overpower human consciousness [Elon Musk]

What can be done?

1) Frequent updation of new data
(Ex) ChatGPT was updated upto 2020

2) Constant monitoring of results to check any biases

3) Penal punishment to prevent plagiarism in content

Hence, innovation can be utilised in responsible manner to solve existing developmental problems.

Next IAS ID: PTTP220880_TC073, 06.06.2023 12:11 PM

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 महत्व 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

Mangroves are defined as halo saline bushes having a distinct kind of root system and pneumatophores which help them to survive in extreme and saline conditions.

Mangrove Alliance for climate launched at COP 27 target at:-

↳ i) Utilising mangroves in adaptation and mitigation efforts for climate change

↳ ii) Helping developing countries to deal with Impact of climate change by harnessing nature based solutions

↳ iii) Recognition to unique ability of mangroves in averting risks of disasters

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM
Candidates must no write on this marg

iv) Combined effort to restore mangrove ecosystem with specified targets.

(v) Collective mobilisation of finance for mangrove plantations to achieve objectives of REDD + [Reducing ecosystem degradation by and deforestation]

(vi) & Information dissemination on certain best practices. for best results.

Case study ⇒ Restoration effort are required by UNEP

Denmark and Indonesia - created conditions suitable for mangroves growth rather than their direct plantation.

Planted water breaks → sediments trapped → more sustainable ← mangroves grows naturally and stays

Importance in maintaining Coastal Ecology

Mangroves act as natural defence barrier to Tsunamis, cyclones, etc.

⊛ - Sunderbans prevent cyclone damage to west Bengal

NEXT IAS
Next IAS ID: PTTP220880, TC073, 09-08-2023 12:11 PM

(2) Prevents coastal erosion and Coastal flooding so used by communities as nature based solutions

(Eg) In Odisha, mangroves plantation drive after disastrous cyclone.

(3) Home to biodiversity and provide safe habitat for reproduction

(Eg) Olive ridley Turtles come for reproduction in Bhitarkanika mangroves

(4) Act as aquifer by using their sedimentation property to filter out pure water → maintaining water as a natural resource.

Therefore, global and national efforts like MISHTI (Budget 2023-24) tends to plant mangroves as active deterrent to climate change. Also helps in activities: SDG 15 ↑ terrestrial ecosystems.

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Candidates must n
write on this margi

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) is manifestation of India's capability to tilt global discourse on climate change towards resilient infrastructure and it's importance.

↳ [Our Prime minister in 4th international conference on CDRI]

Till now, India had reactive approach towards disaster management.

However, with CDRI, we have adopted a proactive stand which tends to reduce risk of disaster by integrating disaster management with main policy discourse

Fig: 1 Disaster happen → Rescue and Rehab

↳ Reactive approach

Fig: 2 Proactive approach

Preventive measures → Risk reduction → Long term changes to reduce risk ↑ If disaster happens

Next IAS ID: PTTP2[illegible]TC0732 08-08-2023 12:11 PM

(Ex) = Earthquake building code for buildings residential construction to prevent risk of earthquakes.

New strategy to tackle Disasters

(1) Moving from working in silos to coordinated course of action and having a robust urban policy paradigm which can cater to disaster management needs

(Ex)- Availability of remote sensing data to urban planners to identify local disaster hotspots [Ex- Convergence between Ministry of science and Ministry of Urban affairs]

(2) Resilient infrastructure should be made mandatory for public places first

(Ex) Green Roofs (flood avoiding roofs) for hospitals, malls, etc.

(3) Tradition and technology are two pillars of strength, harnessing them can yield results.

(Ex)- Bhunga houses in Gujarat

Candidates must no write on this margi

resilient to earthquake, technology in- built ~~can~~ in them can be studied to avoid disaster.

(4) Equipping urban local bodies with finance and relevant training can ensure robust preparedness at local level.

Ex ⇒ Disaster risk reduction plan for Panchayats can be extended to urban bodies as well.

(5) Community Awareness and training for emergency rescue.

Ex - Odisha - Tuva nitra - 450 youth committees trained in rescue efforts

(6) Moving from development to ecologically sustainable and responsible developed. Relevant changes in techniques needed to reduce disaster risk.

Ex ⇒ Mining in Himalayas should be prohibited — (Ex Joshimath land subsidence a result of unsustainable development)

2) Green and sustainable sand mining to avoid harms to rivers can reduce risk to floods.

The we should remember - Peo - people policies (3P) for disaster management are need of AMRITHAA.

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

Q.19 महत्त्वपूर्ण 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

A recent report from cybercrime cell of ministry of Home affairs depicted a 200% rise in ransomware attacks.

Ransomware attack refers to - denial of control of one's data to its actual owner by miscreants. They demand ransom (money) in order to give back access again.

Factors behind Ransomware Attack

↳ 'Data is new oil' - so ransomware attack big corporations/ sensitive data and give them threats to leak it. This data will be beneficial to their competitors.

↳ Rise in digital operations have

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM
Candidates must n write on this margi

made it easy for cyber attackers to grab sensitive personal data.

(Ex) - Call for digital financial inclusion, peoples banking data to become vulnerable

↳ troopholes in cyber security measures.

(Ex) - Israeli software Pegasus can easily bypass antivirus software as well as firewall.

Impact of these Attacks

(1) Critical Infrastructure

↳ i) Electricity supply can be disrupted if 'Power' sector is attacked

(Ex) - China's attack on Mumbai power grid

↳ (ii) Set back to digital infrastructure due to data breach

(Ex) - Digilocker, Cowin have ample amount of data, their credibility will be decreased if data is breached.

Next IAS ID: PTTP220880, TC078, 09-08-2023 12:11 PM

(2) **Economic** => Economic cost of ransomware attacks is also huge. Big corporations can lose deals and innovations to their counterparts. And if ransom is paid, then loss in profits

(3) Threat to modesty of women as they have been given threats of morphing their pictures, so forced to pay ransoms.

Need of strong cybersecurity measures

---

1) Cybersecurity insurance for corporates
2) Cybersecurity policy should be updated to bring sophisticated solutions for ransomware attacks
3) Community awareness initiatives like Cyber Swachchta Kendra should be promoted

The need of hour is to preserve human security by strengthening cybersecurity in this techade.

NEXT IAS

Candidates must n
write on this margi

Can
writ

Next IAS ID: PTTP229880, TC373, 09-09-2025 12:11 PM

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 shares a 15000 km long land borders with neighbours and has a 7500 km long coastline

This calls for need of securit at 2 levels → Territorial security
→ coastal security

Need of cooperation and coordination

↳ Blurring of borders between territory and coastal challenges

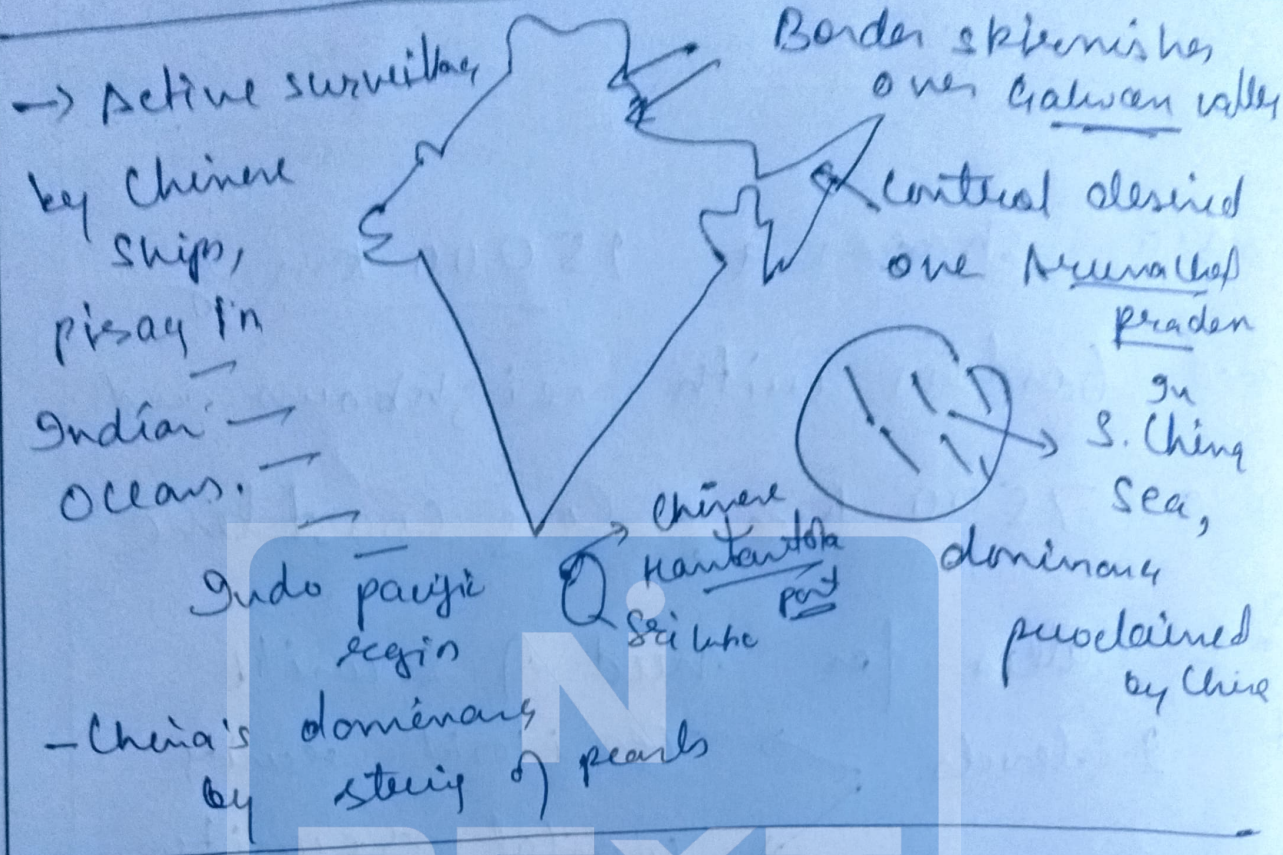
(Eg → 1) Smuggling being done by borders as well as coastal water.

—2) Illegal migrants entering from water international waters.

↳ India is facing a multifaceted security challenges, this calls for cooperated response

Next IAS ID: PTTP220880, TC073, 09-08-2023 12:11 PM

Case Study:- China's multi-dimensional attack



How to Improve coordination?

(1) Information sharing and Data Monitoring

(Ex) ITBP on Assam border can have watch at findings of Indian Coast Guard about activities in Indian Ocean

(2) Sharing of technical capacities and infrastructure

↳ Border forces can come for regular patrolling ~~using~~ in coastal areas using coast guards' infrastructure

Next IAS ID: PTTP220889, TC073, 09-08-2023 12:11 PM

(3) Integrated approach for security of national and international waters

(4) Indian Navy - doing capacity building of local Marine police force.

(5) Joint Exercises for Capacity Building and enhancing coordination

(6) Operation Sagar Kavach - Joint effort by Indian Navy and Indian Coast Guard.

With these initiatives, along with integration of coastal smuggling, Marine terrorism in NATGRID platform will help in boosting intelligence capabilities of our armed forces.