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Roll No. : PTTP 221597

Registration Number : ..... **Date of Examination :** 11.9.23

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.

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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. : .....


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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

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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.

Candidates must not write on this margin

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

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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

MPC is a 6 Member Committee headed by the RBI governor which aims to keep inflation within the 4±2% bracket.

Successes of inflation targeting

1) Inflation through government intervention has been between 2-6%.

2) Repo Rate increase raises Confidence and does Inflation Control.

3) Loans through banks get affected with Changes in Repo Rates.

4) Persuasion from MPC also Controls Inflation.

Candidates must not write on this margin

Challenges

1) Many take loans from informal sources like moneylenders.

2) External events → Russia-Ukraine war beyond control of MPC.

3) COVID-19 → "Black Swan Event" led to inflation.

4) Fluctuation in Oil prices and harvests in agriculture beyond MPC

5) MPC does not control government spending on subsidies and infrastructure/populist schemes.

MPC has been largely successful in inflation targeting as seen since its formation.

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Q.3 भारत में सतत् 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

~~Millets are nutri cereals~~

2023 is the 'International Year of Millets' as celebrated by the UN.

Millets Promotive Sustainable agriculture →

1) Extracts less nutrients from the soil, keeping soil fertility and nitrogen content high.

2) Less water required by Millets vis-a-vis cereal crops, saving water

3) Requires less fertilizers → reducing runoff → reducing eutrophication

4) Promotes Natural farming and organic farming.

5) Hardy, crops with higher shelf life and drought resistant.

Candidates must not write on this margin

Improving food security

1) less liable to pest attacks compared to wheat and rice

2) High nutrition content → zinc and iron. Will help tackle anaemia.

3) Can be grown in arid, semi arid, drought prone regions providing food security. Eg: Rayalseema, Dharwad, Mamutnala.

4) Good alternate in years of crop failure.

Millets can be utilized in India through inclusion in PDS and reducing Monoculture. It can help in achieving SDG-2 and SDG-3. (Ending hunger & poverty).

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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 Missions

Aims to have 'Har ghar Jal' through tapped water installation in all homes.

Significance of Mission

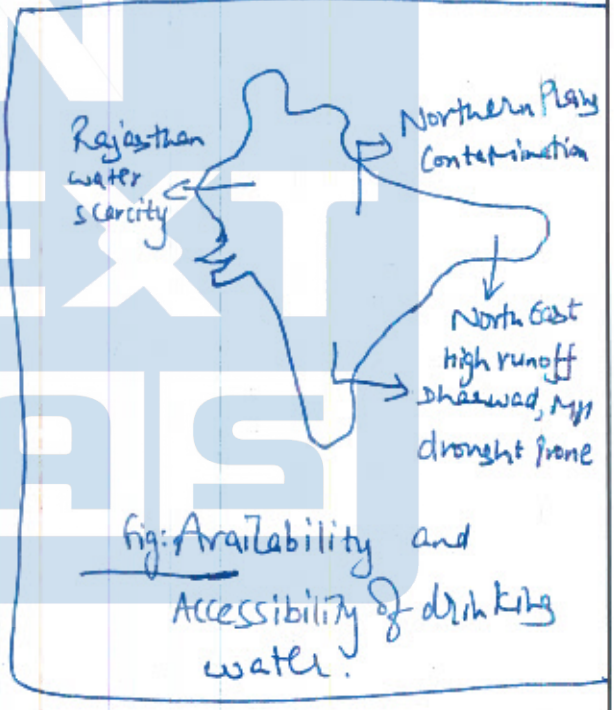


fig: Availability and Accessibility of drinking water.

1) Tapped water – to all houses.
2) Uncontaminated water will be available for drinking.
3) Infrastructure – taps, Pipes, Canals etc. for transporting water safely.
4) Reduce Groundwater extraction and Contamination.

Candidates must not write on this margin

5) Reduce water stressed areas → 600 Million Indians live here. (Niti Aayog)

Impediments in achieving Objectives

1) Initial Costs of infrastructure installation too high.

2) Illegal groundwater extraction and water mafia. Eg: Delhi

3) Large population → easier contamination of water.

4) Repair and maintainence high cost

5) Revival of local water bodies difficult → encroached.

Way Forward

1) Volunteers, Civil Society, Local Governments → maintain local water sources

2) Sustainable local solutions to be practised. Eg: Amrit Sarovars in Punjab

Safe drinking water can be achieved through 'one water Approach'.

Candidates must not write on this margin

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 refer to batteries storing energy to be used in transportation or for other purposes.

Applications

1) Lithium ion battery
→ In electric vehicles is a necessary component.

2) Solar Energy
→ Can be stored during the day to be used during the night time.

3) Off Grid electricity Storage
→ through BESS Can lead to energy in Rural / Off grid areas.

Candidates must not write on this margin

4) Used in heavy / hybrid vehicles.

1) National Solar Mission → will benefit

2) FAME 2.0 → EVs manf activity and battery storage technology will get a fillip.

Revolutionizing India's energy programme

3) De Carbonizing transport sector and faster transition to Electric based operations

4) Harness Renewable Energy for electric generation, rail operations

5) Will help reach 'Panchamrita' promises as per Paris Climate Deal.

BESS will transform India into a technological prowess and global leader in energy systems.

Candidates must not write on this margin

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 is a mission of ISRO to send Vyomnauts into Space

Development
- 1) Successful Pad Abortion Test
- 2) Successful Soft landing after coming back in atmosphere done.
- 3) Training to be done of Vyomnauts in Russia.
- 4) Reusable Launch Rocket Successful

Challenges

1) Nature of impact on Vyomnauts
- Physical health
- mental
- emotional

Candidates must not write on this margin

2) Reentry into Atmosphere and safe landing a challenge.

3) First of its kind Mission by ISRO.

4) Limitations of technology

Benefits to society

1) New technology can help in future missions

2) Can open Space Tourism for Indians.

3) Inspiration to children and reverse brain drain

4) Increase in future possibility of Indians on Moon and Mars.

Gaganyaan mission will open up India and its capabilities to the WORLD.

Candidates must not write on this margin

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

Recently India's Union Budget included the National Green hydrogen Mission with aim to make India a leader in its production and export.

Analysis of Green hydrogen

1) Created from Renewable Resources through solar energy etc. by electrolysis.
→ But RE production is low in India.

2) In vehicles → reduce Pollution
→ Fuel Cells production limited and Expensive

3) High Calorific Value of hydrogen
→ But, difficult to store and is inflammable.

Candidates must not write on this margin

4) Can cut down import bills of fossil fuel.

→ But limited production with high initial infra. costs

5) Cleaner source of fuel.

→ But, merger with CNG will still have emissions.

→ Current production from coal and oil.

6) High export potential.

→ Storage issues

Green Hydrogen if produced and stored well will go a long way against CC and pollution, yet focus on other forms of RE need to continue.

Candidates must not write on this margin

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

Recently, Subsidence and Caving in of land in Joshimath showed the ills of development in Himalayan regions.

Lessons for DM

1) Poor monitoring systems of NDRF and SDRF.

2) Poor Planning by DM agencies

3) Illegal and unplanned Constructions leading to Subsidence.

4) Digging of Canals, Reservoirs etc. and their harms.

5) Poor research before taking on activities in the regions

Candidates must not write on this margin

Lessons for environmental Conservation

1) Proper Mapping and Hazard Risk Vulnerability Zoning of a place required.

2) Projects to be in line with nature of terrain.

3) Local Community to be Consulted before Projects.

4) Environmental Impact Assessment to be thorough.

5) Projects to consider Watershed Management and drainage systems

India needs to build Sustainable projects sensitively as per the fragile Himalayan terrain.

Candidates must not write on this margin

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

The recent taking down of Indian flag in Indian embassy in UK and protests in Punjab show existence of Khalistan in India.

Recent developments

1) Protests for Khalistan in UK.

2) Sympathisers organizing March in Canada

3) Attack on Indians by Khalistani supporters in Australia

4) Lawrence Bishnoi arrest and conflict with Khalistanis.



fig: Khalistan aspirations

Candidates must not write on this margin

5) Graffiti of 'Khalistan Zindabad' Slogans on Delhi Metro Stations.

Measures to handle

1) Stop funding and support from Pakistan.
2) MEA to take strict action and dialogue with other countries.
3) Combative force against Khalistani terrorists.
4) Block online pages in support for Khalistan.
5) Strict monitoring and policing of hotbed regions through intelligence networks.

Khalistan issue should be tackled at its roots and propaganda to be identified.

Candidates must not write on this margin

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

Recent drone entries in Punjab and Jammu bringing drugs and money have raised concerns of drones in border areas.

material brought through drones
- → Guns, grenades
- → drugs
- → Fake Currency notes
- → Sensitive messages

Reasons for using drones
1) Cheap options
2) No human smuggling involved.
3) Easy to Use.
4) Difficult to catch and spot.
5) Can be replaced

Candidates must not write on this margin

Suggestions to tackle it

1) 'No fly Zones' in border areas.

2) Sensors like BOLD-QIT and others to spot drones

3) Use Satellite technology to monitor lower border airspace.

4) Diplomacy with Pakistan regarding it.

5) Monitoring and shooting down of drones.

6) Use best practices from Israel facing the same problem.

Indian army needs drone Catchers and robust monitoring systems to prevent such attacks.

Candidates must not write on this margin

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

Recently, the Parliament passed the Electricity Amendment Bill, 2022 to overhaul the Power sector.

Advantages for Consumers →

1) Smart meters to be installed in all households.

2) Renewable Energy generation can be sent to grids saving electricity bills for Consumers.

3) More choice to choose electricity provider.

4) Lower Bills for Consumers

Candidates must not write on this margin

Benefit to DISCOMS →

1) Can Procure Renewable Energy at lower costs than fossil fuel based energy.

↳ 2) Will lead to lower debt burden to DISCOMS.

↳ 3) Infra. upgradation → Lower transmission and distribution losses

Benefit to Envt. →

1) Focus on Renewable energy → lesser emissions.

2) Less usage of coal in electricity production.

↳ 3) Decarbonization of energy production.

Shortcomings

1) Does not address funding issues and current unsustainably high debt of DISCOMS.

Candidates must not write on this margin

2) Poor Awareness among Consumers regarding Choices

3) Does not address high transmission and distribution losses.

4) Does not make it Mandatory on States to take action.

Way Forward

1) States to take cognizance and take action.

2) Better awareness among Consumers regarding rights offered to them.

Sustainable energy can usher India into the 21st Century.

Candidates must not write on this margin

Q.12 भारतीय प्रतिभूति एवं विनिमय 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 was established by an Act of Parliament in 1992 to ensure fairplay in the Share Markets of India.

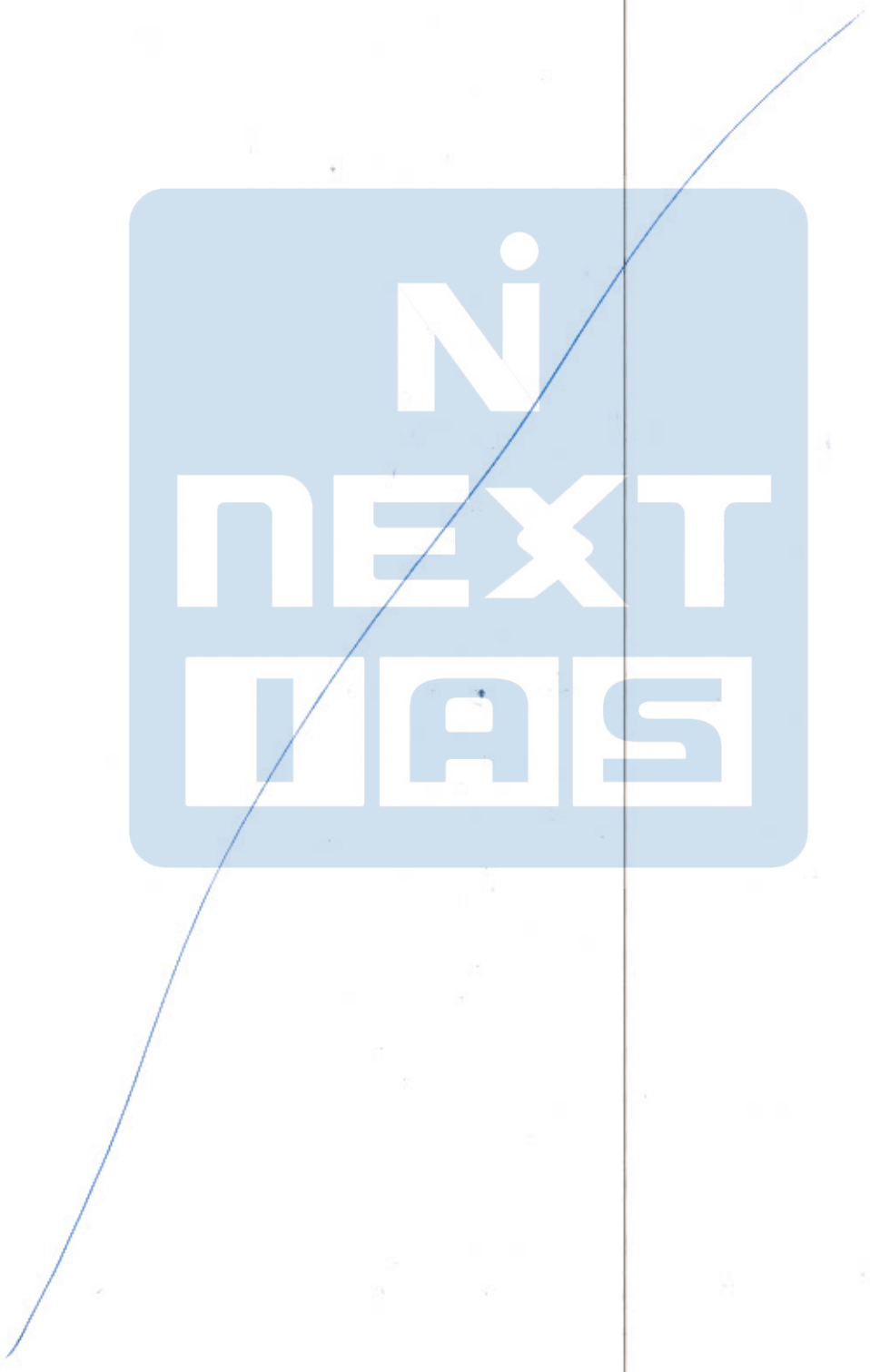
Functions

1) Registering of firms.
2) Monitoring of wrongdoings in Share Market
3) Clearing Contracts of firms to be registered for listing in SENSEX and BSE.

Candidates must not write on this margin

Challenges faced

Candidates must not write on this margin



Candidates must not write on this margin

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 in India

Employs ~ 45% of the population Contributing to ~ 17% of the GDP.

Constraints impeding growth

Pre Sowing

1) Poor Access to Credit to farmers → ~ 25% from non formal sources → high interest.

2) Poor Availability of seeds → Low 'Seed Replacement Rate'

3) Poor Market and weather knowledge before Sowing

4) Handkerchief size Landholdings — Average 1.08 ha. (Agri. Census, 2016)

Candidates must not write on this margin

During

1) Poor access to irrigation → Go for flood irrigation
2) Low level of Mechanization. → No Machines for small lands
3) Wrong use of fertilizers and pesticides → High Contamination, unexportable.

Post Harvest

1) Poor and expensive transportation and roads
2) Middlemen exploitation + Mandis issues.
3) Poor storage facilities → "Distress sale" → Perishing of grains
4) No exports, Packaging and Marketing idea or technology.

Role of Technology

1) Precision farming and fertigation for irrigation.
2) Drone usage to keep an eye on health of crops and pests.

Candidates must not write on this margin

3) AI, IoT and Big Data analytics for healthier crops and right time to harvest
   eg: ~~Microsoft~~ weather app
4) eNAM → Mandis to prevent distress sale and higher profits
5) Mobile Soil Testing labs for Soil Health.
6) new seed varieties → Biotechnology → drought resistant and pest resistant.
7) JAM trinity → for Direct Benefit transfer.

Way Forward

1) Emulate best practices from China and Israel.
2) Increase Public investment in agriculture (~~1%~~ 2%) and R&D facilities.
3) Contract farming, Cooperative farming and Land Consolidation with higher Mechanization

A More technology inclusive agriculture will lead us to a Atmanirbhar Bharat.

Candidates must not write on this margin

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

Around 55% of India has irrigation while the rest is rainfed. Haryana, Punjab have 98% irrigation while Bihar and North East > 10%.

Impact of irrigation on environment and natural resources

1) Green Deserts → Can alter the landscape by increasing crops. Eg: Paddy in Rajasthan due to Indira Gandhi Canal.

→ But, it can disturb the local biodiversity and soil conditions.

2) Invasive species and weeds can be introduced due to irrigation

Eg: Interlinking rivers between States

Candidates must not write on this margin

3) Increase Crop production and land Productivity.

→ However, Can promote Monoculture and go against Agro-climatic Zoning.
Eg: Punjab and Haryana - Paddy.

4) Affect local Marine biodiversity through change in water temperature.

→ Can also lead to runoff and eutrophication.

5) Can lead to issues in drainage basins of the watershed causing waterlogging.

Measures for Sustainability and equity of irrigation

1) Precision irrigation → Sprinklers Can lead to sustainable irrigation

2) Allowing groundwater recharge and

Candidates must not write on this margin

Mapping of aqua basins underground.

3) Use of technology, R&D and knowledge to farmers regarding irrigation.

4) Use of fertigation, Integrated Farming Systems.

5) Practice Natural farming and Organic farming. Eg: ZBNF

6) Equitable Canal systems allowing water to reach last miles. Eg: Maharashtra issue of water equity.

Irrigation is necessary for Crop productivity but should not alter the ecosystem of the place.

Candidates must not write on this margin

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

Homi J. Bhabha and Vikram Sarabhai are called the 'father of atomic energy and space technology' respectively in India.

Benefit from Homi J. Bhabha

1) Nuclear Technology

India's 3 step programme to harness thorium available in abundance in India to create Plutonium and Uranium for energy purposes.

→ Indian nuclear plants → self

Candidates must not write on this margin

Sufficient and not needing to import ~~nuclear~~ fissile nuclear material

2) Saving Forex and making India a responsible nuclear nation.

3) Nuclear bomb → Culmination of Bhabha's work.

4) BRAC in Mumbai

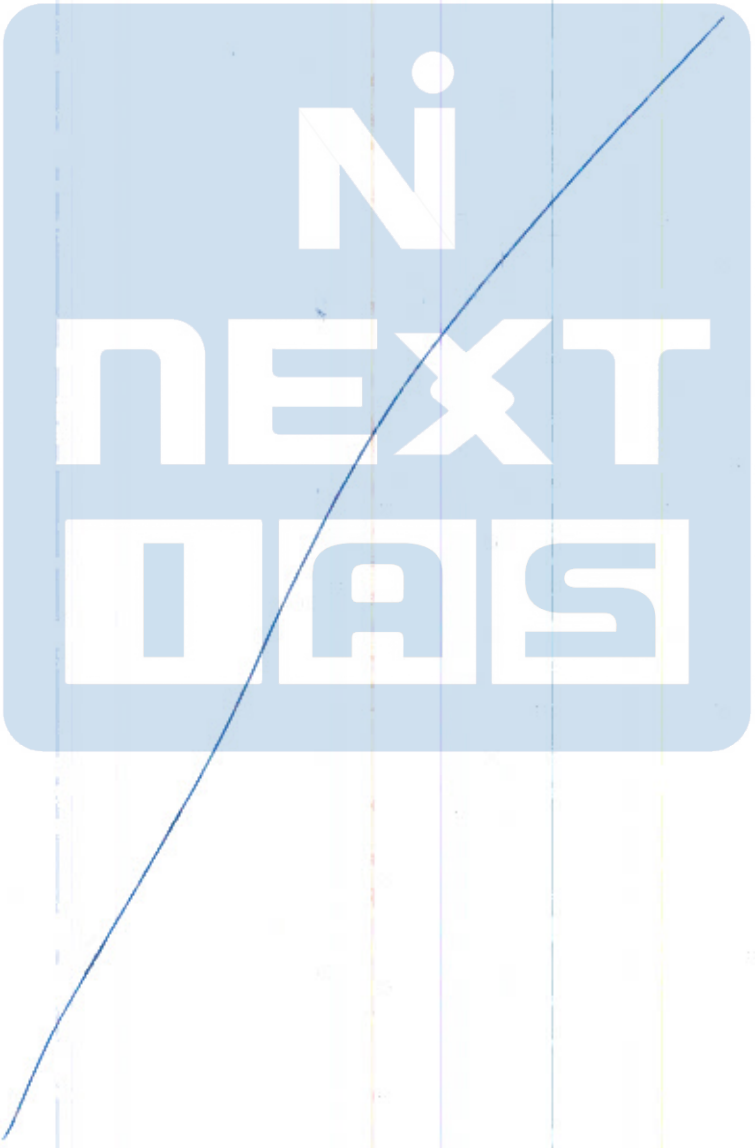
Vikram Sarabhai

1) Expertise for ISRO → Helped in early breakthroughs and missions.

2) Established IIM – Ahmedabad.

Candidates must not write on this margin

Both of them are Pioneers for science in India and their examples can reverse brain drain in India



Candidates must not write on this margin

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

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 AI refers to an area of AI that is creative and generate songs, poetry, essays etc. quickly and precisely.

Potential to push boundaries

1) Swiftness in innovation

Eg: Chat GPT can write an essay or research documents in minutes

2) Music industry

→ Can generate songs in an instant even in voices of dead singers.

3) Singularity → Can refine a thought

Candidates must not write on this margin

or a process faster than humans.

4) Take decisions → much precisely than humans.

Eg: Diagnosing certain ailments like Cancer.

5) Sports → Can beat humans in chess, and video games.

6) Defence → Used in drones and fighter jets efficiently.

Societal Impact

1) Unemployment

Eg: Creative writers, essayists, songwriters can be replaced.

2) Diminish human creation

→ AI created material can

Candidates must not write on this margin

replace human creativity.

3) Ethical dilemmas → Discrimination by AI as it works on human fed data.

Eg: Facial recognition systems discriminate based on race in USA.

4) Elon Musk → AI will take over humans if not controlled.

Generative AI can change the way humans live but should not replace humans, instead should work for them.

Candidates must not write on this margin

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

Mangrove Alliance for Climate was launched at 27th CoP of UNFCCC with the following purpose:

1) To protect and preserve Mangrove forests of the world.

2) To help Mangroves Survive Climate Change

3) Reduce deforestation, illegal mining and exploitation of resources in Coastal areas.

4) Share global best practices with each other.

5) Fulfill SDGs 15 and 16.

Candidates must not write on this margin

1) Protects against floods, tidal surges and cyclones

2) Bioshields against cyclones and tsunamis.

3) Can act as reservoir of water as well harbour high biodiversity Eg: Corals, fishes, birds etc.

Importance of Mangroves

4) Source of livelihood → food and fuel for coastal communities.

5) Blue Economy → Can promote local economies.

6) Tourism, Cultural and aesthetic value for the region.

Candidates must not write on this margin

Way forward

1) 'Green Zones' and 'Special Ecological Zones' Classification for them.

2) Prevent illegal Sand mining, developmental activities and deforestation in such regions.

3) Prevent Encroachment of Coastal areas.

Mangroves create a unique ecosystem in Coastal tropical areas and global solutions Can help preserve them.

Candidates must not write on this margin

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

CDRI is the initiative of Countries like India, Japan and Australia to built disaster resilient infrastructure and Practices.

Robustness to DM in India

→ 1) foreign technology, experts and techniques will be brought in.

→ 2) Global Best Practices will be adopted.

→ 3) Quicker Response Systems and Communication technologies

→ 4) help in 'Build Back Better' of Sendai framework.

Candidates must not write on this margin

CDRI also provides India the opportunity to showcase its expertise in Cyclone Management, Eq management etc. to the world

Need for a new Strategy

1) Disaster Management Acts 2006 is a decade old

2) High disasters and damage continue in India. Eg: Chamoli floods, Uttarakhand

3) India → old infrastructure with systems not in place.

4) 68% India prone to Eqs, (12) to floods, large coastline to cyclones

5) Deficiences in DR guidelines and implementation as seen during COVID-19.

Candidates must not write on this margin

Way forward

1) Learn Best practices from Concerned Countries.
Eg: Cyclones and Tsunamis from Japan.

2) Infra building with foreign technologies retrofitted.
Eg: EU standards for EQ in buildings.

3) Amend Disaster Management Act in line with Sendai framework revisions.

4) Make DM more inclusive and gender friendly.

CDRI is a global alliance that can make the world safer.

Candidates must not write on this margin

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

Recently Petya Ransomware attack in India has raised questions on cybersecurity.

Critical Infrastructure

- Power Grids
- Nuclear Plants
- Defence equipment
- Hospitals
- Airplanes

→ 1) Attack on Kudankulam Plant

Need for Stronger Cybersecurity

→ 2) 'Data is the new oil' → high digitization.

→ 3) Cashless economy and banking system softwares

→ 4) Protect Vulnerable Populations and Savings.

Candidates must not write on this margin

1) 800 million internet users in India - CTRAI).

2) Increasing digitization and Money transfers. Eg: UPI, RTGS, NEFT.

Key factors Contributing to this trend

3) Hardware Imports → Chinese hardware in Laptops, Power grids etc.

4) Online Storage of data and their sensitive nature.

5) Outdated Cybersecurity policy and poor R&D by India

Impact on Sectors

1) Power → Mumbai grid failure during COVID.
→ Can lead to darkness and losses.

2) Health
→ ~~Hospitals~~ Sensitive health records can

Candidates must not write on this margin

be misused and used for attacks as it is sensitive information.

3) Nuclear Sector

→ Can paralyze Power generation or threaten human lives through malfunction.

4) On Citizens

→ loss of Privacy, misuse of data through social media

5) Banking Sector

→ loss of crores of Rupees and sensitive financial records.

India needs to increase R&D into firewall systems and produce hardware for Critical infra to protect itself from Ransomwares.

Candidates must not write on this margin

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 shares along border with 7 countries and has a 7500km long coastline making border security a major issue

Different security agencies in India

- Assam Rifles
- SSB
- Indo-Tibetan Police Force
- Border Guards
- Paramilitary – CISF, Border Police
- Coast Guard
- Indian Navy

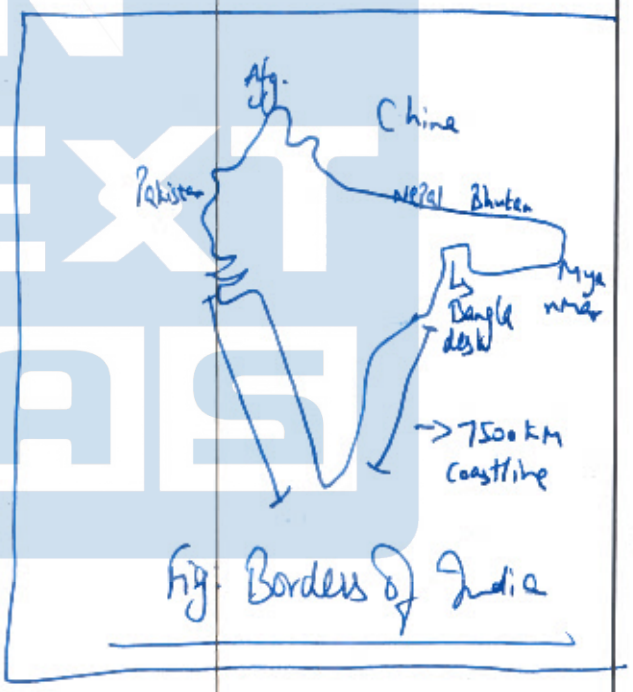


Fig: Borders of India

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Issues with coastal and terrestrial borders

1) Terrain

→ River borders with Bangladesh
→ Hilly with Pakistan, Afghanistan
→ Forests with Myanmar.

2) Smuggling

→ Teak and gold → Myanmar
→ FICN, drugs arms → Pakistan
→ People, cattle → Bangladesh, Nepal

3) Length of borders

4) Multiple border security agencies

5) Technological limitations

Thus, a high need is there to improve cooperation and coordination

Candidates must not write on this margin

Ways to improve

1) Central database for intelligence sharing.

2) Reducing number of security agencies and merging them.

3) Better technological interventions → CIBMS as per Madhukar Gupta Committee.

4) BOLD-QIT sensors usage.

5) Use of AI for border security as per N. Chandrasekaran Committee.

6) Inter-Security agency training and deputations.

7) Theatre Commands to be made.

Border Security needs to be vigilant and coordinated for safe borders.

Candidates must not write on this margin

Space for Rough Work