

TEST CODE 8 1 3 4 0 7

MGP 2025

Time Allowed : Three Hours

समय : तीन घंटे

Forum IAS

Maximum Marks : 250

अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	VISHAKHA KADAM		
Roll No./अनुक्रमांक	1900 1910147582	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	1900	Date/दिनांक	15 th July 2025

*Center Code : For Online - 1900 / Delhi : Karol bagh - 1901, ORN - 1902, Mukharji Nagar - 1903 / Patna : Boring Rd. - 2001 / Hyderabad : Jawahar Nagar - 2101

INDEX TABLE / अनुक्रमिका			INSTRUCTION / अनुदेश		
Q. No. प्र.सं.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक	1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet. कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।		
1			2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory. उत्तर पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।		
2			3. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।		
3			4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. उत्तर प्रवेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।		
4			5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off. प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।		
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Total/कुल अंक	250		For Student Only / केवल परीक्षार्थी प्रयोग हेतु		
Examiner's Discretion/मूल्यांकन कर्ता का विवेक :			Start Time/प्रारंभ करने का समय :	End Time/समाप्त करने का समय :	
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन <input type="checkbox"/> Offline/ऑफलाइन <input type="checkbox"/>	
*Examiner's Discretion is the marks awarded at the discretion of the examiner based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy. मूल्यांकन कर्ता का विवेक अंक आपकी लिखावट, प्रस्तुति, आरेखों के उपयोग, प्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आती के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।			For Office Use Only / केवल कार्यालय प्रयोग हेतु		
			ECN CODE/ ईसीएन कोड :	EG/ईजी :	Evaluation Date/ मूल्यांकन तिथि :
				① ② ③ ④ ⑤	

Note: Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion classes for the tests are also available online in your portal to aid in your preparation. Further, students are requested to see the good copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and means to improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS = Answered What is Asked.** This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first place. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjectivity of the examiner.
2. **CD & VA = Content Density & Value Addition.** Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit and space limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of (but not all!) suggestions, ideas, quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.
3. **S & F = Structure & Flow =** Whether you have structured your answer properly or not. Whether the answer has been broken into parts and sub-parts and each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.
4. **P & R =** How your answer performs on the criteria of **presentation, ease of read, clarity and apparent effort** in writing the answer. This affects the subjective components of assessment.

Q.1) While the Employment Linked Incentive (ELI) scheme and the Production Linked Incentive (PLI) scheme are both designed to boost economic growth, they employ different approaches and focus on distinct outcomes. Elaborate. (10 marks, 150 words)

जबकि रोजगार आधारित प्रोत्साहन (ELI) योजना और उत्पादन आधारित प्रोत्साहन (PLI) योजना दोनों को आर्थिक संवृद्धि को बढ़ावा देने के लिए प्रारंभ किया गया है, वे अलग-अलग तरीकों का उपयोग करते हैं और अलग-अलग परिणामों पर ध्यान केंद्रित करते हैं। सविस्तर वर्णन कीजिए। (10 अंक, 150 शब्द)

The ELI and the PLI both operate in the manufacturing sector with the purpose of two different effects

Employment Linked Incentive (ELI) scheme

- ① Aim : to Boost employment in the manufacturing sector, crucial for ensuring employment linked growth.
- ② It focuses on incentivising industries via their proclivity to recruit, train and retain labour force.
- ③ It's special focus is on labour intensive industries such as foot wear and leather industries.

Production Linked Incentive Scheme

- ① Aim: to promote production and sales scaling of strategic and sunrise industries.
- ② It focuses on improving commercial viability, expanding production, & boosting product sales and profits.
- ③ Thus, it incentivises the purchase of any production - boosting measures such as machinery and other technical inputs.
(warehouses, inventory etc.)
- ④ As it is tilted toward capital intensive industry. (eg) Foxconn etc.)

Both schemes are crucial to ensure the growth of the economy on sustainable terms - for industrial development and long term industrial stability.

Feedback

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AWIS			
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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

Q.2) What do you understand by 'Reverse Brain Drain'? Identify the key drivers of the rising trend of this phenomenon in the country. (10 marks, 150 words)

'रिवर्स ब्रेन ड्रेन' से आप क्या समझते हैं? देश में इस घटना की बढ़ती प्रवृत्ति के प्रमुख कारणों की पहचान करें।

(10 अंक, 150 शब्द)

Reverse Brain Drain refers to the
return of national talent due to
various international fluctuations.

Key Drivers of Reverse Brain Drain

- ① Hypernationalist policies being followed by some developed countries leading to curtailment of immigration.
eg) America First policy.
- ② International conflicts and crises have led to unsafe and non-conducive research and work environments.
eg) Israel - Gaza war → return of university grads from Israel

③ Rising instances of racism and violence have made migration unsafe and unlikely.

Potential in Reverse Brain Drain

① Enable their prosperity in Indian Industry and research

eg) ANRF, One Nation, One Subscription.

② Development of research education and universities to boost intellectual stimulation

eg) HEPA, GIAN etc.

③ Ensuring they are commensurately rewarded for their level of training

Demographic Dividend window and the phenomena of reverse brain drain can present an opportunity for an India-led global growth.

Feedback

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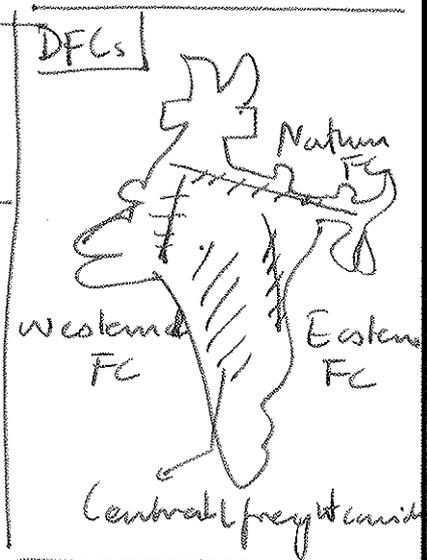
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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

Q.3) The Dedicated Freight Corridor (DFC) not only enhances logistics efficiency but also represents a pivotal milestone in the country's infrastructure development and economic growth. In this context, describe the significance of the Dedicated Freight Corridor. (10 marks, 150 words)

डेडिकेटेड फ्रेट कॉरिडोर (DFC) न केवल लॉजिस्टिक्स दक्षता को बढ़ाता है बल्कि देश के बुनियादी ढांचे के विकास और आर्थिक संवृद्धि में एक महत्वपूर्ण मील का पत्थर भी दर्शाता है। इस संदर्भ में, डेडिकेटेड फ्रेट कॉरिडोर के महत्व का वर्णन करें। (10 अंक, 150 शब्द)

The dedicated freight corridors scheme has boosted regional linkages and trade across India.

Milestone in Country's
Infrastructure Development



- ① Improved logistics costs (currently at 13%)
- ② Links trade centres (CNP, Northern plains) to markets via high speed rail.
- ③ Improved employment and livelihood security (in railways and beyond).

Significance!

- ① Boost cost efficiency and emissions reduction (higher mileage with lesser cost)
→ electrification by 2030 can ensure net zero of railway transit
- ② Boosted Regional and pan India trade (eg KISAN rail → better price realization; Steel companies from iron mines etc.)
- ③ Primary revenue generation for the railway which enables subsidised passenger transport (cross subsidy regime)

The DFC has wide potential for ensuring green transport, decreasing logistics costs and improving agri-prosperity

Feedback

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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

Q.4) Define precision agriculture. How can it help in optimizing crop production and resource management? (10 marks, 150 words)

परिशुद्ध/प्रिसिजन कृषि को परिभाषित करें। यह फसल उत्पादन और संसाधन प्रबंधन को अनुकूलित करने में कैसे मदद कर सकती है? (10 अंक, 150 शब्द)

Precision Agriculture can be understood as integration of AI, IoT, machine learning and other technologies for optimal input and management of agriculture.

Optimisation of Crop Production & Resource Management

① Input precision:- precise inputs of irrigation and fertiliser

Key Fertigation processes linked with AI, IoT and nano sensors for optimality
 ⇒ rational fertiliser use NPK (4:2:1)

② Farm Management Information System

↳ inputs on soil fertility, organic content, growth potential, health of crops are ~~now~~ derived and reported.

③ Pesticide Management :- accurate and minimum application of nanopesticide chemicals
 ⇒ protect crops from excessive pesticidal use

④ Deficit Area irrigation system :- partial irrigation and minimum application of water for survival and growth of plant
 ⇒ suitable for dryland agriculture

⑤ Nano sensors and Nanotechnology can document and report on root and leaf health.

⑥ Leaf colour chart by IRRI can indicate plant health and input requirements.

Precision Agriculture at scalable levels can ensure sustainable and climate resilient agriculture and food systems.

Feedback

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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

Q.5) Why has rice not seen similar innovation in processed food products compared to wheat, despite being a staple in many regions of the country? (10 marks, 150 words)

देश के कई क्षेत्रों में मुख्य खाद्यान्न होने के बावजूद, प्रसंस्कृत खाद्य उत्पादों में चावल के संदर्भ में गेहूँ की तुलना में समान नवाचार क्यों नहीं देखा गया है? (10 अंक, 150 शब्द)

Rice - wheat historically and presently dominates the Indian cropping pattern and dietary pattern.

Processed Food Innovations in Wheat

- ① Wheat is produced internationally as a primary crop (eg) Ukraine, US etc.) in grassland regions
- ② As a result, wheat is historically a tool of food innovation as well as sustenance leading to processing toward:
 - ↳ Pastas and breads (Europe)
 - ↳ Pizzas and Burgers (US fast food chain)
 - ↳ In India → Rotis, and other bread

Innovations in Rice Crop

Although there have been notable innovations (Dosas, dried & crushed rice applications in desserts, rice cakes etc), it is comparatively limited because:-

- ① Primary staple in East Asian and developing countries where food processing industries is still limited
- ② Cultural isolation and lack of linkages and market popularity of rice-based items
eg) Japan's rice cakes ^{are} little known
- ③ Sustenance crop → directly consumable as rice which is nutritious and filling by itself (limited diversion of rice).

PM Sampada Yojana can boost food processing and with it food and culinary experimentation for market success.

Feedback

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TOTAL MARKS			



Q.6) Explain the working principle of the pumped storage hydropower system. What are the key advantages it offers compared to other power storage technologies? (10 marks, 150 words)

पंप स्टोरेज हाइड्रोपावर सिस्टम के कार्य सिद्धांत की व्याख्या करें। अन्य पावर स्टोरेज तकनीकों की तुलना में इसके मुख्य लाभ क्या हैं? (10 अंक, 150 शब्द)

The pumped hy storage hydropower system is a mechanism to promote grid stability and balance grid volatility.

Working Principle of Pumped Storage Hydropower System

- ① During times of surplus energy generation from renewables such as solar and wind, the system stores power, pulling the pump upwards.
- ② During times of energy deficit, the system releases energy via gravity and water pumps down transferring energy to the grid.

Key Advantages Compared to Other Power Storage Technologies

- ① It is cost-effective as compared to green hydrogen storage systems
- ② It can be easily integrated into existing grid - since it is works based on river flow and regime
- ③ It is regionally implementable at state level \Rightarrow enabling rapid storage construction
 (eg) Karnataka's Shwaratri pumped storage hydropower system.

The pumped storage hydropower system will enable India's transition to a net zero country by 2070 in an inclusive manner.

Feedback

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Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.7) Describe the major outcomes of the 29th session of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). (10 marks, 150 words)

जलवायु परिवर्तन पर संयुक्त राष्ट्र फ्रेमवर्क कन्वेंशन (UNFCCC) के कॉन्फ्रेंस ऑफ पार्टिज (COP) के 29वें सत्र के प्रमुख परिणामों का वर्णन करें। (10 अंक, 150 शब्द)

The 29th session of the COP to the UNFCCC was held at Baku, Azerbaijan.

Major Outcomes

- ① Coal phase down must be undertaken at rapid pace by 2030.
- ② Baku Harmoniya Pledge to improve climate ~~to~~ resilient agriculture and a climate secure farmer, and food system.
- ③ Global Biofuels Alliance that India pledged - aimed to contribute to energy diversification via bio-based fuels.

④ New Collective Quantified Goal (NCOG)
~~to~~ for developed countries to meet their climate commitments and recognise their historical responsibility commitment of 300bn per year until 2035 as ~~pos~~ needed opposed to ~~need~~ \$1.3 trillion for just transition.

⇒ However, the technicalities have not been clarified.

⑤ Preparation for India's role as host of CoP

CoP29 was deemed by many developing countries, including India, as a disappointment due to lack of commitment shown by member nations.

Feedback

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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			

Q.8) How can emerging solar technologies address the twin challenges of resource scarcity and environmental degradation? Illustrate your answer with recent innovations in the field.

(10 marks, 150 words)

उभरती सौर प्रौद्योगिकियाँ संसाधनों की कमी और पर्यावरण क्षरण की दोहरी चुनौतियों का समाधान कैसे कर सकती हैं? क्षेत्र में हाल ही में हुए नवाचारों के साथ अपने उत्तर को स्पष्ट करें।

(10 अंक, 150 शब्द)

Recently, the Government of India has launched PM Surya Ghar Yojana providing for concessional rooftop solar for 1 crore homes

Emerging Solar Technologies Addressing
Resource Scarcity and Degradation

① Solar efficiency via the use of perovskites in solar cells and panels will boost efficiency in solar energy

⇒ cost effective and improved energy output

② Solar self drying panels will reduce the use of water in washing panels and in water-scarce regions (Rajasthan,

Karnataka).

③ Decentralised solar Mini Grids can promote non-grid connected electricity generation for remote regions.

⇒ Thus, ~~create~~ remove need for ~~to~~ ~~limit~~ burning wood in tribal dominated regions.

④ Rainwater Harvesting integrated Solar panels boost both water conservation and energy generation ⇒ enabling sustainable cities and communities.

⑤ Grid returning solar power panels that return energy to grid upon surplus energy (balancing grid autonomously), and boosting cost efficiency.

India's solar leadership (ISA, DSOWOQ) is unparalleled, its convergence with emerging technologies will further boost solar promise.

Feedback

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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			



Q.9) What is 'research security'? What are the key hurdles in ensuring research security in India?
(10 marks, 150 words)

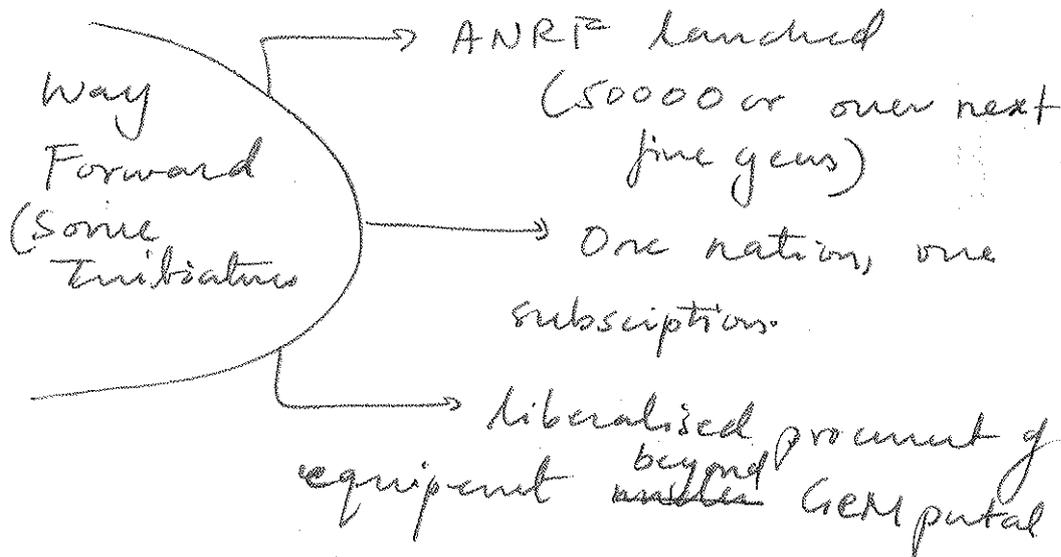
'शोध सुरक्षा (Research Security)' क्या है? भारत में शोध सुरक्षा सुनिश्चित करने में प्रमुख बाधाएँ क्या हैं? (10 अंक, 150 शब्द)

'Research security' refers to the ability of a nation to foster independent, sustained and protected research.

Key Hurdles in Ensuring Research Security

- ① Lack of Research Ecosystem → leaves many without institutional support, follow up, stipend, mentorship.
- ② Less research uptake among youth:
only 253 out of a million take up research whereas in the US → 1000 per million take up research.
- ③ Low R&D expenditure → ~~0.36~~ 0.6% of the GDP with private sector contributing only 0.36%. (Israel → 4% of GDP.)

④ Access to international research is limited
 ⇒ interaction between research regimes is limited and innovation is thus unfettered.



Research security is a necessary pillar in the growth and of our youth and in their critical skills.

Feedback

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TOTAL MARKS			



Q.10) The Armed Forces (Special Powers) Act, 1958 (AFSPA) is necessary for maintaining peace and stability in the 'disturbed areas'. Critically examine. (10 marks, 150 words)

सशस्त्र बल (विशेष शक्तियां) अधिनियम, 1958 (AFSPA) 'अशांत क्षेत्रों' में शांति और स्थिरता बनाए रखने के लिए आवश्यक है। आलोचनात्मक परीक्षण करें। (10 अंक, 150 शब्द)

The AFSPA Act of 1958 is a security act that seeks to curb insurgency and cross border incursions and violence in the North East.

Necessary for maintaining Peace & Stability

- ① It provides wide powers to the army to arrest, take forceful action, and even shoot upon witnessing suspicious and dangerous activity.
- ② The MHA has justified AFSPA on the basis of the security crisis prevailing in the north east, given:-
 - ↳ international borders with hostile nations
 - ↳ porous borders and illegal incursions (2000 ~~into~~ incursions between 2018-19).

↳ armed smuggling
↳ insurgent groups (NCCN, Kukri
Separatist group
etc.)

It is an unnecessary Intervention

① The AFSPA can be questioned on
the basis of the array inefficiency
wide ranging powers

⇒ violates human rights and causes
further tensions

② Legislations such as VAPA, NIA,
and PMLA 2002 already exist to
address unsocial elements
(2019 amendments give further security
powers).

③ It is argued that developmental
incentives must be ramped up to
discourage militancy and gain trust.

The fine balance between security and
development must be tread to ensure a

Feedback

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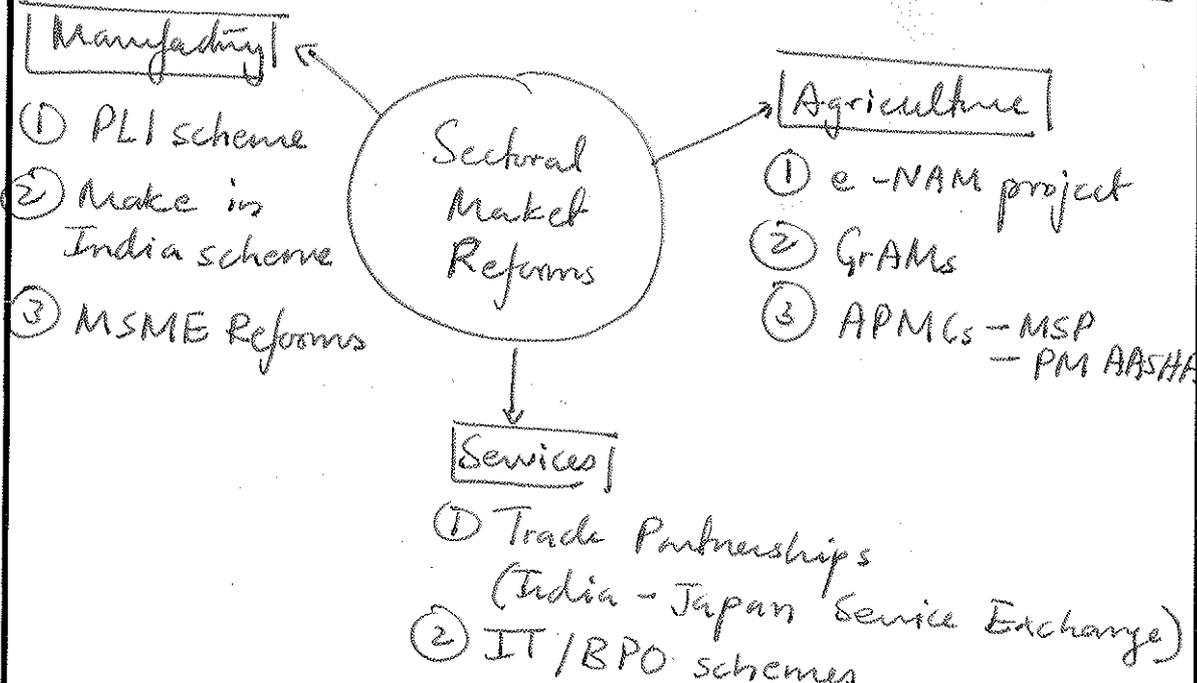


Q.11) How has inadequate progress on factor market reforms impacted India's double-digit growth aspirations? What measures has the government taken in this regard? (15 marks, 250 words)

कारक बाजार सुधारों (फैक्टर मार्केट रिफॉर्म्स) पर अपर्याप्त प्रगति ने भारत की दोहरे अंकों की विकास आकांक्षाओं को कैसे प्रभावित किया है? सरकार ने इस संबंध में क्या उपाय किए हैं? (15 अंक, 250 शब्द)

Factor market reforms refer to interventions in the market in order to boost production, growth and guide the direction of the economy

Inadequate Progress on Factor Market Reforms



Inadequate Progress

1) Informalisation of most entities - MSMEs are 90% within the informal sector

leading to lack of access to institutional credit
and modern technology

- ② Fragmented nature of Agri-cultural Market
with high cartelisation, uneven distribution
of APMCs (concentrated in Punjab and Haryana)
- ③ MSP → only penetrates to about 6% of
farmers (Shantakumar Committee) with
85% small and marginal ~~top~~ excluded
- ④ Digital Market Interventions → have been
unable to take off completely due to:-
↳ low digital literacy (53% farmers)
↳ rural urban divide (60% v. 13% tele
density)
- ⑤ Manufacturing Schemes → not well implemented
(PLI, Make in India) and favor
already large companies (eg Foxconn,
Samsung in Noida)

Measures by the Government

① Introduced FTT Foreign Trade Policy 2023 which aims to develop value chain ~~exp~~ of exports from the districts itself (grass roots trade ecosystem) → boost exports, rural economy & MSMEs

② Model APLM Act 2017 → convergence with BharatNet, PGMDISHA can boost digital access for farmers and rural ~~use~~ industries to boost awareness, value addition and linkages

③ India Stack → DigiLocker (2bn documents)
 → VPI (8bn transactions/month)
 → Aadhaar enabled Systems
 have boosted economic transactions and money multiplier effect.

④ Green Growth Initiatives → subsidised green sectors (eg) Bio E3 policy

Initiatives in line with sustainable growth, SDG7, SDG13 can ensure Viksit Bharat at 2047

Feedback

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Please put tick marks in the above table.
 Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.12) What are the factors responsible for the recent depreciation of the Indian Rupee? Discuss its implications for the economy and suggest policy measures to stabilize the currency.

(15 marks, 250 words)

भारतीय रुपए के हाल ही में हुए अवमूल्यन के लिए कौन से कारक जिम्मेदार हैं? अर्थव्यवस्था पर इसके प्रभावों पर चर्चा करें तथा मुद्रा को स्थिर करने के लिए नीतिगत उपाय सुझाएँ।

(15 अंक, 250 शब्द)

The Indian rupee has recently hit an all time low of ₹83.5 against the dollar. There are various factors for this downward trend.

Factors Responsible for ~~Be~~ Depreciation of Indian Rupee

- ① Import prices and inflation in the economy
 (a) high crude oil prices due to Iran-Israel war, Ukraine-Russia war
 ⇒ both primary exporters of oil to India
- ② Dollar strengthening due to various recent undertakings by the US Administration such as equalising trade deficits, America First policy etc.

③ Domestic Economy → supply chain constraints due to natural disasters, monsoonal season (urban flooding) etc. can lead to dip in exports and trade transactions.

④ Remittances → from the Gulf has seen a dip due to wider crisis in the region.

Implications for the Economy

I [Positive Impacts]

① Promotes Indian expats abroad
⇒ improving competitiveness vis a vis China

② Borrowers ~~not~~ with loans priced in Indian currency will benefit with rise in real income.

II Negative Implications

- ① Expensive inputs of crucial raw material (fertilizers, APIs, etc which are linked to crude oil prices as well)
- ② Could stall domestic manufacturing
- ③ Possible inflation in the economy

Policy Measures to Stabilise Currency

- ① RBI measures → Buying Indian currency and selling dollars in the global currency market can improve the rupee.
- ② Controlling Inflation → open market operations by the RBI → to buy G-Secs will reduce liquidity
- ③ Improving Exports over the long-term can resolve this chronic issue.

∴ The key to Indian rupee strength lies in energy diversification → reducing dependence on

Feedback

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Q.13) While Farmer Producer Organizations (FPOs) can resolve the issues of small farmers and boost agrarian economy, the realization of their potential is hindered by a multitude of factors. Analyze.

(15 marks, 250 words)

जबकि किसान उत्पादक संगठन (FPOs) छोटे किसानों की समस्याओं का समाधान कर सकते हैं और कृषि अर्थव्यवस्था को बढ़ावा दे सकते हैं, लेकिन उनकी क्षमता का एहसास कई कारकों से बाधित है। विश्लेषण करें।

(15 अंक, 250 शब्द)

Farmer Producer Organisations are structured groups of small and medium farmers that collectively secure themselves against the vagaries of the farm economy.

① There are 8 Lakh FPOs, largest movement of agrarian sector.

FPOs can Resolve Issues of Small Farmers and Boost Agrarian Economy

① Resource optimisations: costs of fertilisers, pesticides and seeds and credit are distributed among members
 ⇒ pool lead to scaling of production with land pooling (average size → 1.15ha)

② Bargaining Power :- stand upto

cartelisation in APMCs, demand fair returns, even undertake rewording contract farming agreements

eg) IFFCO, CASICOM

③ Agricultural credit: wider access to institutional credit (only 40% of small and marginal farmers receive formal credit) with enhanced collateral to pledge

④ Improved Production outcomes due to economies of scale

eg) AMUL cooperatives → Operation Flood, now with India as largest milk producer in the world

⑤ Risk taking → improved chances of success in ventures such as horticulture and floriculture

eg) Nashik → grape farmer's FPO ⇒ seen profits of ₹1000-5000 / Kg

Hindered by Multitude of Factors

- ① Bras and Caste Isolation in Rural areas \Rightarrow prevent true cooperations
- ② Lack of linkages for FPOs (roads, infrastructure, market access) \Rightarrow collective lack of profit.
- ③ Recognition and legal registration is lacking for governmental support etc.
- ④ Lack of infrastructural support to boost scaling up of production
eg) cold chain infrastructure, lack of warehouses
- ⑤ Low prices and sticky behaviour, linked to MSP prices.

Linkage with e-NAM, expansion of banking (SIDBI, NABARD) and agricultural extension services can boost farmer security and FPO as a pole of rural growth.

Feedback

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Q.14) Discuss the significance of aquaculture towards nutrition security, livelihood generation, and economic growth. Also mention various initiatives taken by the government to promote sustainable aquaculture in the country. (15 marks, 250 words)

पोषण सुरक्षा, आजीविका सृजन और आर्थिक संवृद्धि के लिए जलीय कृषि के महत्व पर चर्चा करें। देश में धारणीय जलीय कृषि को बढ़ावा देने के लिए सरकार द्वारा की गई विभिन्न पहलों का भी उल्लेख करें। (15 अंक, 250 शब्द)

Aquaculture is the business of rearing marine and freshwater species within coastal zones and ponds for commercial gains.

★ India has the 2nd largest aquaculture sector in the world.

Significance of Aquaculture

I Nutritional Security :- it supplements rice-wheat dominant dietary pattern across India \Rightarrow increased proteins, Omega 3 elements

wide potential for convergence with POSHAN, ICDS in coastal regions.

II Livelihood Generation :- Fisheries is part of allied agriculture sector forming 25% of Agri GDP. At least 40% of

workforce are involved in fisheries to boost
income and social security

(eg) Shrimp farming in Sunderbans.

III Economic Growth :- India has tremendous
potential with 7500 km coastline

↳ It is currently the largest producer of
Tuna, one of the largest exporters of Shrimp.

↳ Fisheries and aquaculture is a prime
profession for island economy (A&N,
Lakshwadeep → recognised by Budget
2025-26)

Initiatives to Promote Sustainable Aquaculture

① PM Matsya Sampada Yojana :- boosts
infrastructure (cold chain, transportation,
to credit) for efficient aquaculture
harvesting

- ② [Export Policy] → aquaculture products are facilitated by APEOA which certifies products and makes them marketable.
- ③ [Blue Economy 2017]: Aims to set up regional aquaculture clusters, provide ~~or~~ bio-based aquaculture ponds in order to boost sustainability and reduce carbon footprint.
- ④ [CRZ Rules] promotes demarcation of coastal land to prevent encroachment on marine aquaculture ponds (Aquafarming, Aquasheds).

Feedback

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TOTAL MARKS			

The Aquaculture sector presents an alternative to scarce land based-farming, improving sustainability can make this mainstay sector.



Q.15) What is gene therapy? What makes it a better treatment option than the conventional approaches? (15 marks, 250 words)

जीन थेरेपी क्या है? पारंपरिक तरीकों की तुलना में यह बेहतर उपचार विकल्प क्यों है?

(15 अंक, 250 शब्द)

Gene therapy refers to the manipulation of genetic matter in order to induce positive clinical outcomes.

Concept of Gene Therapy

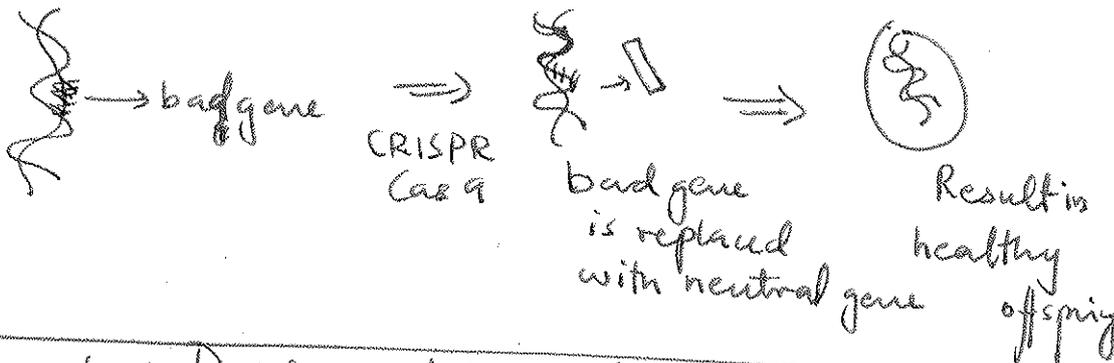


Fig 01: Depiction of Simple Gene Therapy

- ① It can be used to treat ailments such as sickle cell anaemia (SCA), Beta-thalassaemia etc. (monogenic diseases)
- ② Its applications have also been found in eradicating mitochondrial diseases (three parent baby).

③ Potentially a useful for scaling treatments for other diseases like Cancer (eg) CAR-T cells.

Better Treatment Option Than Conventional Approaches

① It is a permanent fix \Rightarrow relatives to conventional approaches.
 \Rightarrow Thus, improved quality of ~~fin~~ life, & convenience with painless treatment

② It can be passed down to offspring
 \Rightarrow potential for eradication of the defective gene from the human race.

③ Highly effective and precise \rightarrow not simply palliative, but addressed the disease at the genetic or source level

Feedback

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TOTAL MARKS			

④ Lack Curative Treatment → can even be applied before birth to the foetus' genes to ensure a healthy offspring.

[Limitations]

- ① High cost, lack of access in developing countries ~~in~~ and poorer regions
- ② High technical skills and resources required.
- ③ Risk factor: high stakes with wrong implementation of procedure (off target mutations could be disastrous)

Any new technology must be tested for affordability and scalability, without which it can lead to exclusion in health benefits.



Q.16) Why are countries keen on developing their own space stations? What obstacles do they face in the process, and how can these be overcome? (15 marks, 250 words)

राष्ट्र अपने स्वयं के अंतरिक्ष स्टेशन विकसित करने के लिए क्यों उत्सुक हैं? इस प्रक्रिया में उन्हें किन बाधाओं का सामना करना पड़ता है, और इनसे कैसे निपटा जा सकता है? (15 अंक, 250 शब्द)

Space Stations, typically deployed in the low earth orbits, are useful for R&D, space experimentation and strategic purposes.

① The countries of China, India and Russia are attempting to develop space stations as an alternative and in addition to the international space stations by:

Keeness on Developing Space Stations

① Support scientific ventures such as human space flight missions (Gaganyaan), other interplanetary missions (Chang-e of China) and deep space missions

② Scientific Experiments and R&D → space experiments, i.e., R&D in micro-gravity conditions can boost lead to several useful findings eg CROPS by ISRO ⇒ germination of seeds in space.

③ Strategic and Dual Use purposes due to increasing militarisation of space and potential for use for on ground conflict.

④ Diplomatic potential → space stations can enable joint ventures between countries (for space diplomacy)

Obstacles in the Process

① High technical skills, cost in building and establishing space station
↳ several flights as-define delivery missions,

technologies such as SPADEX (docking), RLV-TD must be operational and reliable

② Highly crucial safety standards must be met to ensure the station remains human grade

③ Protection and monitoring of space station requires additional support satellites.

Steps to Over come |

① Private sector synergy with skyroot & Agnikul under IN-SPACE framework.

② Technology transfer and agreements with spacefaring nations such as NASA, Roscosmos

③ Increased R&D and technological development (National Aeronautics Research Facility)

Above all, India must ensure deployment and operation in accordance with Artemis Accords to promote space 2030

Feedback

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TOTAL MARKS			



Q.17) Climate change is causing profound alterations in ecosystems, triggering cascading impacts on biodiversity, ecosystem services, and human livelihoods, which demands integrated approaches to conservation and climate adaptation. Analyse. (15 marks, 250 words)

जलवायु परिवर्तन पारिस्थितिकी तंत्र में गंभीर परिवर्तन ला रहा है, जिससे जैव विविधता, पारिस्थितिकी तंत्र सेवाओं और मानव आजीविका पर व्यापक प्रभाव पड़ रहा है, जिसके लिए संरक्षण और जलवायु अनुकूलन के लिए एकीकृत दृष्टिकोण की आवश्यकता है। विश्लेषण करें। (15 अंक, 250 शब्द)

Climate change refers to long term change in climate of the Earth resulting in cascading impacts on biosphere, hydrosphere and atmosphere.

Profound Alterations

① Ecosystems → leading to fragmentation of ecosystems, narrowing of edge ecosystems and alteration of ecosystems (eg. Polar glacial ecosystems).

② Biodiversity → leading to habitat fragmentation, no migration of species, extinctions and threatening of endemic species
(eg. Arctic fox moving further northward latitudes).

③ Ecosystem Services → provisioning, regulating,
supporting ecosystem services are delayed,
non-functional, erratic

eg) Hydrosphere → extreme rainfall events,
increase in sea level ⇒ affects cycle

④ Human livelihoods → deep settlements
dependent on ecosystem as well as
natural resources may be displaced,
suffer unemployment, lose cultural heritage

eg) cultural loss → Mōēi tribe has seen
submergence of ancestral burial sites

displacement → of Papua new Guinea
islands due to sea level rise.

In India, forest communities and coastal
communities are at risk.
(500mn)
(35mn)

Integrated Low Approach to Conservation & Climate Adaptation

- ① Embodied in NAPCC initiative with holistic 8 sector intervention in order to address climate change impacts.
(National Green Mission, Sustainable Agriculture, Sustainable Himalayas).
- ② NDC Targets :- have broad based interventions in economy, energy, afforestation to plug emissions & boost carbon capture and sequestration
- ③ Cop29 initiatives relate to wide range to sectors such as farming (Baku Amaniya initiative), green fuels etc.
- ④ LIFE movements :- recognises that the climate battles is related to sustainable production & consumption patterns.

India's leadership in climate change is set to

Feedback
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Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			



Q.18) Often referred to as the 'cradle of civilization' and 'growth engines', urban areas are increasingly experiencing various natural and man-made disasters. Discuss in the Indian context. Also, suggest suitable mitigation and management strategies. (15 marks, 250 words)

अक्सर 'सभ्यता का पालना' और 'विकास इंजन' कहे जाने वाले शहरी क्षेत्रों में विभिन्न प्राकृतिक और मानव निर्मित आपदाएँ बढ़ रही हैं। भारतीय संदर्भ में चर्चा करें। साथ ही, उपयुक्त शमन और प्रबंधन रणनीतियाँ सुझाएँ। (15 अंक, 250 शब्द)

Urban areas encompass almost 30% of population (Census 2011) and is projected to increase to 60% by 2036.

'Cradle of Civilisation' & 'Growth Engine'

- ① Contributes to 60% of National GDP.
- ② Convergence of talents and functionalities
=> lead to innovations, efficiencies and
deep development
(eg) Silicon valley, Delhi-NCR industrial
region.
- ③ Cultural progress and inter-sections
occur in urban regions leading to rich
cultural landscapes
(eg) Delhi cosmopolitanism

Natural & Man-made disasters

- ① Urban flooding :- with floods 1.8-8x the peak and 6x the volume of conventional floods (eg 2005 Chennai floods)
- ② Heatwaves & Urban Heat Island due to high GHG emissions.
(eg Delhi and Ahmedabad have 4-6°C higher nighttime temperatures compared to nearby rural areas.)
- ③ Landslides :- due to unsustainable construction and ~~was~~ unscientific settlements (eg Joshimath sinking)
- ④ Cloud bursts :- due to urban heat island in cities \Rightarrow leads to sudden intense rainfall. (eg Delhi cloud bursts from time to time)

Mitigation and Management Strategies

① Urban infrastructure design and policy

climate resilient initiatives must be linked with Smart cities & AMRUT 2.0

eg) Telangana Cool Roof Policy 2023.

② Urban Planning to Manage Urban

Sprawl → preventing constructions on flood plains eg) Slums on Yamuna flood plain → rehabilitated.

eg) Dhawan slum rehabilitation.

③ Vulnerability mapping across Indian

prohibition of constructions and infrastructure development in such regions. eg) Channoli, Sikkim, etc.

④ Retrofitting with Sewer Drainage, rainwater harvesting, etc.

Urban cities must be developed keeping in mind SDG11 and its targets

Feedback

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TOTAL MARKS			



Q.19) How does India's geographical location heighten its vulnerability to drug trafficking? Also, analyze various internal security risks linked to drug trafficking. (15 marks, 250 words)

भारत की भौगोलिक स्थिति किस प्रकार मादक पदार्थों की तस्करी के प्रति इसकी संवेदनशीलता को बढ़ाती है? साथ ही, मादक पदार्थों की तस्करी से जुड़े विभिन्न आंतरिक सुरक्षा जोखिमों का विश्लेषण करें। (15 अंक, 250 शब्द)

India is a prime site for the sale and transit of drugs due to its neighbourhood, central position in the Indian ocean and porous borders

India's Geographical Location & Vulnerability

- ① Situated between Golan crescent and Golden Triangle ⇒ India thus becomes primary transit region
- ② Vast 11,000 km maritime boundary (Smery General of India) has created points for entry of drugs
 eg) 3,300kg of heroin was seized in 2023 primarily via North East and Arabian Sea & routes. (NCB)

- ③ Porous borders combined with
difficult terrain between the nations
- (eg) River Ravi traverses Pakistan and
India → becoming a channel for
drug trafficking.
- ④ Proximity to drug Narco terrorist hubs
(convergence of poppy cultivation and
Taliban in Golden crescent ⇒ increased
trade).

Various Internal Security Risks

- ① Drug Trafficking and organised crime
linked to human trafficking, smuggling,
gun salt running, contract killing and
kidnapping (converge together with overlapping
criminal groups)

② Money Laundering and proliferation of black economy (leading to inflation, illicit funding of armed groups, insurgents etc.).

③ Convergence of Terrorism and Drug Trafficking (Macroterrorism) with LET and JEM recruiting from these organisations as well to as being funded by them.

④ Cyber Security Threats :- operation on Darknet (eg Silkroad etc.) can lead to other more unmonitored activities as well.

Way Forward → Strengthening border infrastructure
 → border villages prosperity (CIBMS)
 (as 'first villages' - VVP 2.0)
 → De-addiction centres at every district (recently proposed).

Surveillance across the border, strict FATF compliance will prevent evils of drug trafficking and promote

Feedback

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TOTAL MARKS			



Q.20) The increasing frequency and sophistication of cyberattacks pose a significant threat to national security. Discuss the major challenges in ensuring cybersecurity in the country and enumerate the measures taken by the government in this regard. (15 marks, 250 words)

साइबर हमलों की बढ़ती आवृत्ति और परिष्कार राष्ट्रीय सुरक्षा के लिए एक बड़ा खतरा है। देश में साइबर सुरक्षा सुनिश्चित करने में प्रमुख चुनौतियों पर चर्चा करें और इस संबंध में सरकार द्वारा उठाए गए उपायों का उल्लेख करें। (15 अंक, 250 शब्द)

ERT-In has found that nearly 1.6mn cybersecurity incidents had occurred in 2024 itself in India.

Increasing Frequency & Sophistication

Threat to National Security

- ① Increasing 'Digital Anest' events is leading to defrauding of vulnerable populations of elderly and migrants.
- ② Industrial disruption → almost 2mn businesses have been hit by cybersecurity threats (Sophos 2022)
- ③ State Linked Actors → such as Red Echo group shutting down critical infrastructure in Mumbai in 2022.

Major Challenges in Enemy Cyber Security

- ① Highly fragmented cyber security -
institutional measures - CERT-In, NSCO,
NCIIPC, state cells etc.
- ② Lack of digital hygiene and awareness
make easy targets for hackers
(eg) easy passwords, one password
across devices
- ③ Weak cyber infrastructure in India
(outdated networks, lack of firewalls
in organisations, expensive IT technicians)
- ④ Lack of cyber police training and
lack of cyber investigation and detection
resources (particularly in non-metro regions)

Measures Taken by the Government

- ① 'Cyber Suraksha For All' initiative to promote cyber security awareness and digital hygiene.
- ② Cyber help line for victims to report cyber security incidents.
- ③ Various institutional measures taken:-
 - ↳ NCIIPC → protect critical infrastructure (power grids, aviation etc.)
 - ↳ NCSO → to respond to cyber threats and events
 - ↳ Cyber Security Kendras → at regional level.

The COS has proposed a tri-service integrated cyber security initiative to better improve cyber-readiness and response.

Feedback

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Mentor Feedback Questions

- 1
- 2
- 3
- 4
- 5

Test Goal

- 1
- 2
- 3

Outcomes

-
-
-
-

Marking Scheme

Mark	Good	Average	Below average
10 Marker	3.75 - 5.0	3.0 - 3.5	< 3.0
15 Marker	5.75 - 7.0	4.0 - 5.5	< 4.0
20 Marker	7.75 - 10	6 - 7.5	< 6
	Key / Relevant Point		
	Vague / Irrelevant		

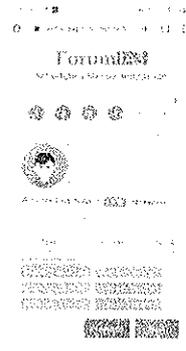
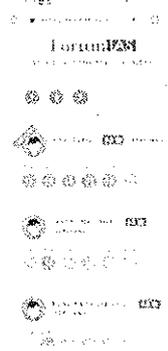
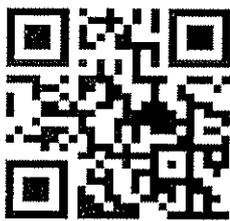
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