

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	ANKITA PATIL		
Roll No./अनुक्रमांक		Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र		Date/दिनांक	9/7/25

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

INDEX TABLE / अनुक्रमणिका			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		<b>For Student Only / केवल परीक्षार्थी प्रयोग हेतु</b>	
Examiner's Discretion/मूल्यांकन कर्ता का विवेक :			Start Time/प्रारंभ करने का समय :	End Time/समाप्त करने का समय :
			10:15	1:15
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, फ्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।			<b>For Office Use Only / केवल कार्यालय प्रयोग हेतु</b>	
			ECN CODE/ ईसीएन कोड :	EG/ईजी :
			① ② ③ ④ ⑤	Evaluation Date/ मूल्यांकन तिथि :

**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। सविस्तार वर्णन कीजिए। (10 अंक, 150 शब्द)

Both employment linked initiative (ELI) and production linked incentive (PLI) schemes are growth engines under the Make in India scheme. They promote economic growth beyond current 8.4% Q4 of 2024.

### Differences in ELI and PLI

ELI	PLI
(1) Focus on <u>skill development</u> of individuals in <u>labour force</u>	(1) Focus on promotion of <u>indigenous</u> production of goods and services.
(2) Promotes <u>labour productivity, employability</u> currently <u>25% in India</u> South Korea → <u>95%</u> .	(2) Promotes increased contribution of <u>manufacturing</u> to GDP beyond stagnant <u>13-14%</u> .

3) Leads to increase  
in labour quality  
and of adoption of  
technology

(Eg.) Vocational  
training schemes.

(4) Involves a bottom  
up model for  
growth

(5) Results in increased  
job opportunities.

(3) Leads to manufacture  
of cutting edge  
technology products

(Eg.) PLI for  
display FABs of  
semiconductors.

(4) Involves a  
top-down, trickle  
down effects

(5) Results in job  
creation

Both PLI and ELI scheme  
aim for inclusive development  
to achieve the dream of  
Atma nirbhar Bharat while become  
second largest economy globally.

### Feedback

(For OFFICE use only)

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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 reverse migration of people like professionals, intellectuals, students staying in foreign countries back to their country of origin.

Rising trend of reverse brain drain has been observed post-pandemic era.

Key drivers behind Reverse brain drain

(1) Economic dynamism of the Indian economy.

↳ Indian economy on the pathway to be 3<sup>rd</sup> largest economy globally.

(2) Emergence of India as one of the largest consumer market

- (3) Rise in startup culture  
↳ 3<sup>rd</sup> largest startup ecosystem (Eco-Survey)
- (4) Demographic dividend promises  
growth potential, labour availability.
- (5) Ease of doing business increased  
↳ GST Reforms → single window clearance  
↳ Labour Code Reforms.
- (6) Increased digitisation facilitated by DPI  
↳ Facilitates growth of fintech companies  
↳ 2<sup>nd</sup> largest digital consumers
- (7) Restriction on migration of population  
↳ Protectionist attitude of western  
countries  
↳ (Eg.) H1B Visa restrictions of USA
- (8) Socio-economic reasons, attitude shift  
post pandemic.

The reverse brain drain is a  
positive effect for India's growth potential  
and the dream of becoming the  
'Vishwa Guru'.

**Feedback**  
(For OFFICE use only)

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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 corridor (DFC) aims to tap the potential of Indian railways that is 4<sup>th</sup> largest in the network in the world.

Significance of dedicated freight corridor

- (1) Essential to increase contribution of railways in freight transport.  
Currently  $\Rightarrow$  30%.  
Target of 35-40% railway transport.
- (2) Reduction of logistic cost that is currently at 14% to 7-8%.
- (3) Achieves multimodal connectivity envisaged by PM Gati Shakti.
- (4) Reduction of load on roadways network.

- (5) Dedicated cargo transport reduces current capacity load that's around 150%.
- (6) Leads to job creation through infrastructure development.
- (7) Promotion of industrial growth along railway networks.
- (8) Emergence and effective connectivity to market places.
- (9) Robust foundation for setting up productive supply chains.
- (10) Connectivity of interior areas, to mainstream markets. (Eg.) NE India's connectivity.
- (11) Facilitates export of goods by port connectivity.

Dedicated freight corridor is a milestone in achieving the logistic performance targetted by 2035.

**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 refers to agriculture practises that involve usage of modern technology to ensure maximum agricultural output by optimum utilisation of resources.

Precision agriculture helps in optimising

(1) Crop production

(1) Agri-tech is instrumental in boosting crop production.

(2) GIS is instrumental in monitoring weather patterns for suitable sowing periods.

(3) IoT devices can be used for automation of pesticide, fertiliser application to reduce crop loss.

↳ Crop loss due to pest attack is about 25%.

(4) ~~Pest~~ Soil quality management, monitoring through moisture sensors

(I) Resource management

(1) Precision irrigation techniques to prevent top soil erosion.

(Eg.) Drip irrigation system. (Israel irrigation system)

(2) Predictive AI algorithms for deciding cropping patterns suitable for land.

(3) Fertigation effectively implemented through drone technology  
↳ (Eg.) Drone Didi scheme.

(4) Mechanisation of agriculture to increase crop production → Tractor usage  
currently only 30% mechanisation in India

Precision agriculture is a modern, optimistic tool to achieve the goal of Evergreen Revolution suggested by Ashok Dalwai Committee

**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 गेहूं की तुलना में समान नवाचार क्यों नहीं देखा गया है? (10 अंक, 150 शब्द)

Rice and wheat are grown in 30-35% of gross cropped area. Only 10% of the crops however are processed.

Lagging food processing in rice than wheat

(1) Dietary habits and food preferences.

↳ Wheat → widely accepted in the form of flour, bread.

↳ Rice → preferred traditional ~~car~~ rice and curry diet.

(2) Existence of cooperatives, SHGs in North India for food processing where wheat is mainly grown.

(Eg) - Flour mills of Haryana based on cooperative societies.

- (3) Technological feasibility to process wheat comparatively  
↳ High carbohydrate content of rice creates difficulty.
- (4) Low shelf life of processed rice disincentivises food processing.
- (5) Operational difficulty in storage of processed product.
- (6) Low demand for processed rice reduces the potential market linkages.
- (7) Input intensive rice production deters further processing.
- (8) Rice is staple diet in coastal areas compared to pan-India wheat consumption.
- (9) Predominance of 'Basmati Rice' in rice production → easy option of finance.  
Rice has a potential to thrust the sunrise sector of food processing.

**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.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)

Pumped storage hydropower refer to the energy generations and storage equipment that utilises the gravitational potential energy to store energy.

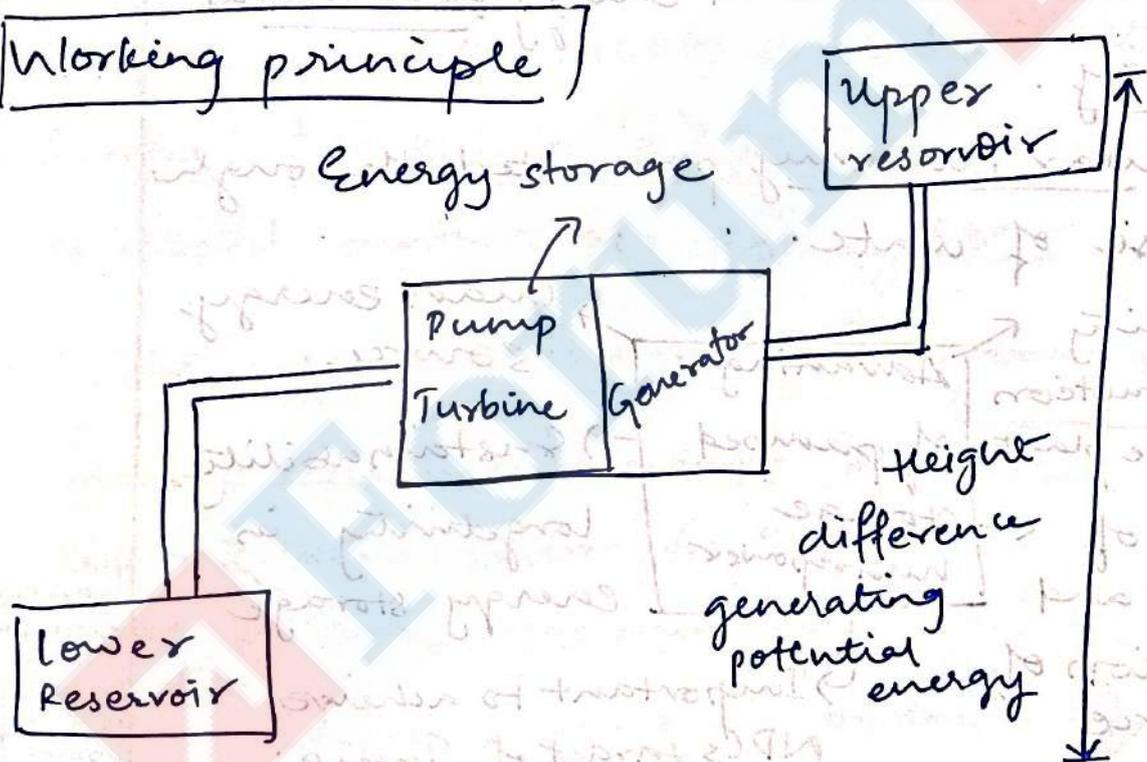


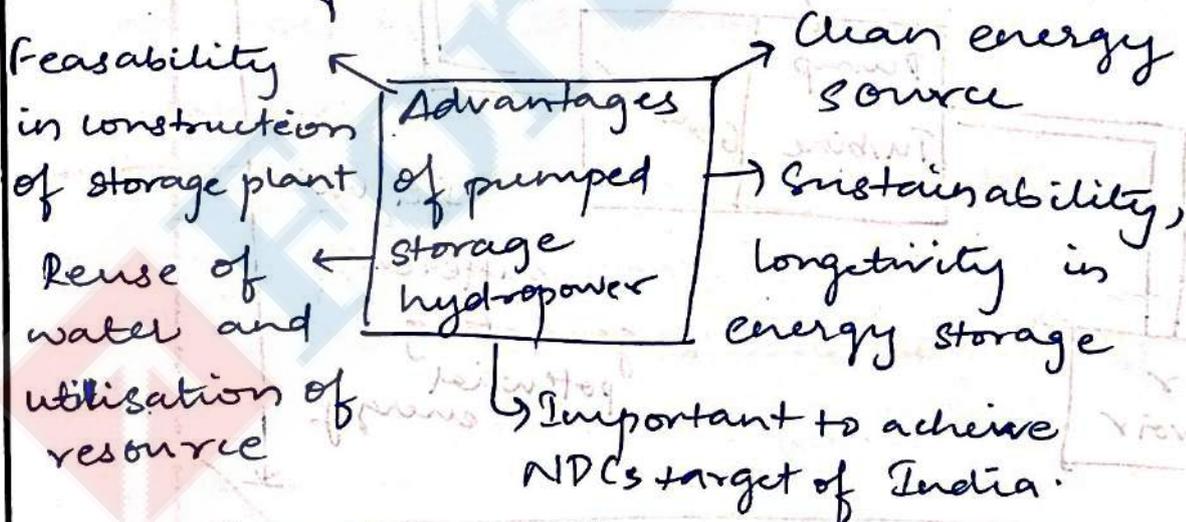
Fig: Pump storage hydropower system

(1) It utilises two water reservoirs at different heights for energy storage

(2) Water is pumped from lower to higher reservoir to store potential energy.

(3) Released pumped water on turbine converts mechanical energy to electrical energy.

(4) Circular economy promoted through reuse of water.



Pumped storage hydropower is instrumental in channelising the hydropower potential of peninsular India.

**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 Conference of Parties - 29 (COP-29) was held in Baku, Azerbaijan recently in accordance with UNFCCC.

### Major outcomes

(1) Climate finance: New collective Quantified Goals (NCGs) tripled climate funds \$100 Billion → \$300 Billion by developed countries per year by 2035.

(2) Carbon trading mechanism: - Centralised financial mechanisms for Art 6.2 (Carbon Bilateral carbon trading) and Art. 6.4 of Paris Agreement (Carbon offset trading, Carbon emission trading)

(4) Methane Reduction: - Global target that methane reduction is in line with 30% reduction target by 2030 of Global

Methane Pledge. Methane reduction in organic waste.

(5) Local Communities and Indigenous

People :- Facilitative Collective Group (FCG) and Local Communities, Indigenous people's platform (LICPP) to bridge traditional knowledge and modern science in climate talks.

(6) Gender and Climate Change :- Extension of Lima Working Group for next 10 years.

Global Action Plan for gender based climate justice for COP30

(7) Focus on Least developed countries and Small & Island Nations (SIDS)

India's stance → Opposition to inadequate climate finance  
 → Demand for \$1.3 Trillion climate funds  
 \$600 Billion per year  
 → Advocated for LDCs and SIDS.

COP29 was a unique summit that necessitated the implementation of Common But differentiated responsibility.

**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.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)

Solar technologies have an immense potential especially in India that experiences 300 days of peak solar radiation.

Importance of solar technology

(1) Solar technology can harness the clean energy source in

- ↳ Agriculture
- ↳ Production
- ↳ Transportation
- ↳ Energy storage.

(2) Recent Quantum dots innovation has led to immense potential in display screens.

- (3) Solar photovoltaic cells make energy storage, production affordable and accessible
- (4) Solar sensors to monitor soil quality improves agricultural management.
- (5) Use of solar electricity for lighting, street illumination
- (6) Solar mining technology makes mining even more productive.
- (7) Computation for AI models based on solar powered data processors can enhance reduce carbon emission.

Solar technology is a sunrise sector crucial for sustainable development

people  
 planet.  profit

### Feedback

(For OFFICE use only)

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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 process of protection of the products of research, development and innovation systems of a country and also preservation of the intellectual property rights.

Hurdles in ensuring research security

- (1) Lack of elaborate legislation for protection of intellectual property. (eg: compulsory licensing.)
- (2) Newer technology enables plagiarism of research work.
- (3) Ambiguity is ~~no~~ difference between novel idea and drawing inspiration from idea.
- (4) Declining originality in ideas due to

- rise in AI models.
- (5) Aversion towards research and development culture
- (6) Inadequate fund allocation for research security
- ↳ Budget allocation less than 1%.
  - ↳ China → 4% allocation.
- (7) Lack of awareness among people regarding IPR regulation.

### Way forward

- (1) Promotion of innovation ecosystem.  
(Eg.) National Digital Research Library.
- (2) Robust implementation of IPR laws by DPIIT.
- (3) Setting up of incubation centres for skill development.

Robust research sector security will ensure the dream of Jai Anusandhan for Viksit Bharat 2047.

**Feedback**  
(For OFFICE use of)

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

Armed Forces (Special Powers) Act, 1958 granted legal immunity to armed forces to take necessary actions in 'disturbed areas'.

### Arguments in Support of AFSPA

- (1) Necessary for tackling insurgency, terrorism.
- (2) Removal will lead to demoralising effect on army.
- (3) Insurgents can exploit locals to file cases against forces without legal safety.
- (4) Necessary to maintain law and order in hostile areas.
- (5) Curbs exploitation of locals by insurgents against the state.  
↳ hinders propagandising of locals.

Arguments against AFSPA

- (1) Ambiguous definition of 'disturbed areas'
  - ↳ Lack of legal objection
- (2) Rise in abuse of power by forces
  - ↳ Commission of offences like sexual offences, fake encounters, etc.
- (3) Rise in terror activities after AFSPA
  - ↳ Counter-productive result.
- (4) Breeds ill-will among locals about forces.
  - ↳ Armed forces looked upon as oppressive
  - ↳ No difference between police and army.

Way Forward

- ↳ Phase out of AFSPA, army from based on threat perception.
- ↳ Six months review on army deployment in disturbed area
- ↳ Parliamentary debates to ensure accountability

Tejvan Reddy Committee's

Suggestion are important for AFSPA reform, further repeal.

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

TOTAL MARKS	
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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)

India's growth rate is estimated to be 7.6% for this financial year. However, inadequate capitalisation of factors of production hinders double digit growth target.

Impact on Indian economy's growth due to inadequate factor market reform

(I) Land

(1) Land fragmentation and land disputes

leads to delay in land acquisition for industries.

(2) Predominance of small, marginal farmers limits agricultural growth.

↳ 86% → ~~small~~ farmers having < 2 hectares Land

↳ top 5% farmers only contribute to 740% of agricultural output.

(II) Capital

- (1) Predominance of non-institutional lending to MSMEs
- (2) High degree of NPAs with banks.
- (3) Long drawn loan process reduces ease of doing business.

(III) Labour

- (1) Lack of labour productivity at only <5%. (NSSO Report), FLPR=37%.
- (2) High unemployment among youth at 40-45%. (highest globally)
- (3) 90% of unorganised workforce

(IV) Enterprise

- (1) Multiplicity of tax compliance to businesses
- (2) High rate of failure of startups  
(Eq: - 90% of startups fail within first 5 years.)
- (3) Import dependence on essential consumer goods. (Eq: - Dependence on China for electronic components.)

Measures taken by government

(1) Digitisation of land records (DILRMP)

↳ SVAMITVA scheme

↳ 90% of land records digitised in villages. (Eco-Survey)

(2) Initiatives like PM Gati Shakti, National infrastructure Pipeline (NIP) for multimodal connectivity. (↓ Logistic cost)

(3) PLI, ELI scheme for production and manufacturing.  
↳ EGGL scheme for credit support to MSMEs.

(4) Insolvency Bankruptcy codes, reduction in NPA's percentage in banking balance sheets.

(5) Skill India Mission, Startup India for labour productivity. NEP 2020 → Vocational training

(6) Technology penetration through Semi Con India, India AI Mission.  
The goal of Viksit Bharat 2047

is possible through robust factor market in India.

**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.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 hit a record low value of  $\text{₹}86 = 1 \text{ USD}$  in the past quarter.

Factors behind depreciation of Indian rupee

- (1) Reduced FDI inflow at \$70.6 Billion and FII inflow at \$46 Billion
- (2) Strengthening of US Dollar due to increase federal reserve rates.
- (3) Capital flight due to caliberated monetary tightening in western countries.
- (4) Geo-political conditions globally  
 ↳ Increase in oil prices led to imported inflation.
- (5) High inflation rate of  $(\text{CPI} = 4.7\% \text{ and } (\text{FY}-24))$  and high food inflation.

(6) Rupture of bubble created in Indian stock market

↳ losing trust in market due to increased volatility.

### Implications on Indian economy

- (1) Increase in current Account deficit and creation of fiscal pressures.
- (2) Imported inflation due to costly oil prices, consumer goods.
- (3) Inflationary rates reduced purchasing power domestically.
- (4) Increased competitiveness of exports in the global market.
- (5) Push towards import substitution due to inflation.
- (6) Debt financing has become costlier leading to widening of the fiscal deficit.
- (7) Reduction investment flows and private investment in economy.

(8) Setback to achieving consistent growth rate of 8% of GDP

Policy measures

- (1) Monetary tightening and increasing repo rates to control inflation.
- (2) Stabilise the volatility volatility of the Indian rupee.
- (3) Import substitution by thrusting indigenous production. (Eq.) Make In India scheme
- (4) Facilitating rupee-denominated loans to curb volatility of exchange rates.  
(Eq.) Dominance of Masala Bonds.
- (5) Crowding in private investment through PPP projects. (Eq.) Infrastructure projects.
- (6) Dissemination of inflation index bonds to spur capital investment in markets.

Indian Rupee has been a stable decently performing currently comparatively. Caliberated, cautious, comprehensive measures are required for rupee consolidation

**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)

(FPOs)

Farmer Producer Organisation

refer to model of enterprise that aims towards cooperation among farmers for awareness generation, responsible agriculture, effective market access.

Cooperative Societies Act.

FPOs are generated under

Companies Act

FPO's role in Indian Agriculture

(I) Resolving farmer's issues

(1) FPOs led to formal organisation of farmers especially small marginal farmers.

(2) Collective solutions provided to be common issues like drought, crop failure, pest vulnerability, etc

- (3) Enable optimum price realisation for crop produce.
- (4) Facilitate guaranteed market access to farmers to relieve economic stress.
- (5) Institutional credit access through bank linkages.

### (II) Economic growth

- (1) Promotes technology penetration to increase crop productivity.  
(Eg.) collective services of tractors on farms.
- (2) Storage facilities, godowns provision to reduce food wastage.
- (3) Consolidation of agriculture allied activities  
(Eg.) Promotes shrimp farming in coastal areas.
- (4) Impetus to food processing to boost the agricultural GVA.

### Factors hindering potential of FPOs

- (1) Limited penetration and haphazard existence of FPOs among farmers.

- (2) Land fragmentation, disputes hinders farmers from collective, cooperation for farming.
- (3) Lack of awareness regarding essential agri-tech in the market.
- (4) Traditional farming practices
  - ↳ (eg): Cropping pattern dominated by Kharif crops → 30%. GCA belongs to wheat, rice.
- (5) Prevalence of non-institutional credit mechanisms in farming.
- (6) Aversion towards contract farming and enterprises.
- (7) Operational issues among FPOs regarding decision making.
- (8) Institutional inadequacy to gain market access.

Way Forward

- Establishing national institute for knowledge dissemination.
- Collaboration with panchayats to promote FPOs
- Implementation of land pooling by utilising DILRMP records.

**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 refers to the farming technique involving the utilisation of aquatic organisms like fish, crustaceans, mollusca, etc. India comprises of the 3<sup>rd</sup> largest aquaculture globally.

## Significance of aquaculture

### (I) Nutrition Security

- (1) Sea food provides an essential protein source in diet.
- (2) Important for acquisition of essential micronutrients.  
(Eg) - omega 3 fatty acid.
- (3) The aquatic organisms are an essential source of Vitamin C.

## (I) Livelihood generation

- (1) The 7500 km of coast houses a major chunk of population dependent on fishery.
- (2) Aquaculture is a labour intensive industry.
- (3) Essential for women empowerment as it employs women in inland fishery.

## (II) Economic growth

- (1) Aquaculture has the potential of 10% CAGR growth.
- (2) Export potential is huge with currently less than 2% of global market acquisition.
- (3) Promote food processing through dry & fish (Eg: market of dry fishes, pickles, bombil, etc.)
- (4) Potential to utilise fish markets and unorganised vendors.
- (5) Financial security to farmers.  
(Eg: Shrimp farming).

## Initiatives taken by government

- (1) Legislative and policy measures to disseminate under umbrella schemes  
(Eg:) PM Matsya Sampada Yojana.
  - (2) Identification of aquaculture as a growth engine to thrust agricultural GDP.
  - (3) Institutional support for quality aquatic produce.  
(Eg:) Nuclear Breeding Centres
  - (4) Preservation of quality of breeds and indigenous quality.
  - (5) Credit support to setup infrastructural demands for Pisciculture.
  - (7) Setting up of aquaculture development fund for farmer support under NABARD.
  - (8) Knowledge dissemination through clusters, KVKs, etc.
- Blue revolution will ensure tapping the actual potential of aquaculture in India.

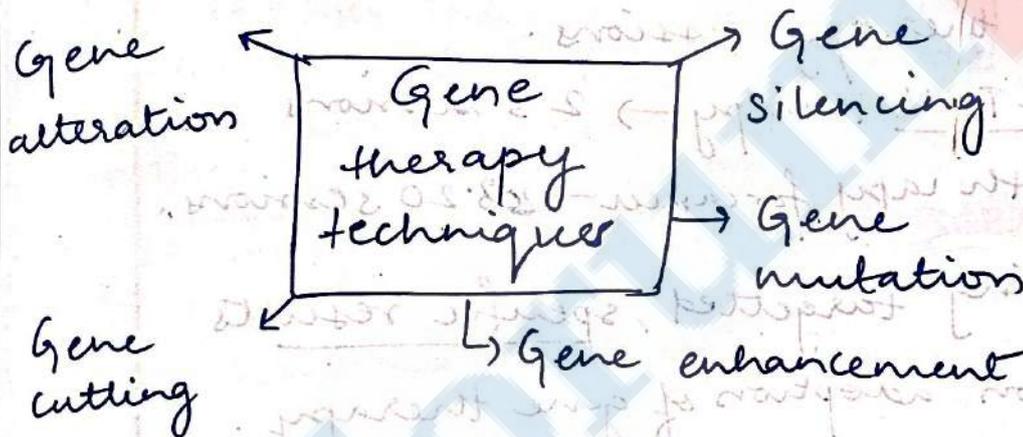
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Q.15) What is gene therapy? What makes it a better treatment option than the conventional approaches?  
(15 marks, 250 words)

जीन थेरेपी क्या है? पारंपरिक तरीकों की तुलना में यह बेहतर उपचार विकल्प क्यों है? (15 अंक, 250 शब्द)

Gene therapy is a cutting edge biotechnology that involves alteration of the specific genes in humans in order to treat or cure certain diseases.



Advantage of Gene therapy over conventional approach

(1) Minimally invasive procedure compared to conventional invasive surgeries.

Eg: Gene silencing to achieve male sterilisation

(2) Higher guaranteed, improved  
success rates of procedure

(Eg:- Gene alterations to modify balding  
patterns

(3) Targets curing of rare diseases.

(Eg:- Alzheimers, Parkinsons diseases, etc.

(4) Curing chronic diseases with  
shorter therapy sessions.

(Eg:- CART-Cell therapy → 2-3 sessions  
Chemotherapy for cancer → 20 sessions.

(5) Achieving targetted, specific results  
based on adoption of gene therapy.

(6) Cure to long standing diseases  
with prolonged medication.

(Eg:- Tackling diabetes.

(7) Precision therapy and faster, cheaper  
procedure compared to long drawn  
surgeries.

**Feedback**

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## Challenges

- (1) Ethical challenges of altering natural human composition. (Eg.) China's designer Baby project
- (2) Inadequate technology penetration and lack of accessibility.
- (3) Potential threat of unwanted side effects leading to immuno-response. (Eg.) Risk with GM crops
- (4) Shorter therapy sessions are effectively costlier

## Way Forward

- (1) Institutionalisation of Gene therapy monitoring authority
  - (2) Codification of prohibited areas of gene therapy, exploration
  - (3) Penetration of health insurance to accomodate gene therapy procedures.
- Gene therapy as an evidence that medical industry would lead to manufacturing solutions to longstanding health impediments.



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 refer to an artificial spacecraft or structure placed in the earth's orbit that houses humans for a prolonged period of time.

Reasons for countries keen on developing space stations

- (1) Rise in space exploration missions and satellite networks.
- (2) Emergence of space warfare among nations.
- (3) Uncertainty in cooperation, collaboration among countries for space missions.
- (4) Space has become a competitive environment globally.
- (5) Necessary for maintaining national

supremacy in global geo-political scenario  
(6) Essential for maintaining national security  
and protection of national satellite system.

(7) Increased restrictions on usage of  
International Space Station.

↳ China developing its own space station.

Obstacles faced in the process

- (1) Technology acquisition for development  
of space station.
- (2) Dependence on launch vehicles of other  
countries to transport space products.
- (3) Threat of space pollution due to  
multiple space stations.
- (4) Impending threat of Kessler's Syndrome
- (5) Protectionist attitude towards  
manufacturing of space units.
- (6) Lack of trained astronauts for the  
space stations.

(7) huge fiscal costs in maintenance and operation of space station.

### Measures to overcome the obstacles

- (1) Formalisation of space regulation to curb space pollution.
- (2) Todification, agreements to treat space as a Global common resource.
- (3) Information dissemination, technology sharing in construction of space station.
- (4) Employment of reusable space units  
(Eg): SPADEX docking system
- (5) Region groups to be preferred for space stations than individual countries.
- (6) Global training programs for astronaut.

### The Bharat Antarishk Mission

is a step in right direction by India to achieve the goal of Indian Space Station.

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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 will ensure  
global average temperature rise by  
1.5°C by 2040 and 2.5°C by 2080.  
(IPCC AR6 Report)

### Impact of Climate change

(1) It has led to alteration in ecosystems

→ Arctic melting aggravated leading  
to positive feedback loop

→ Antarctic expected to be ice free by  
2100

→ Presence of green cover found in  
Antarctica.

(2) Land degradation, desertification

(eg) - 25% of India's land resource  
undergoing land degradation.

- (3) Reduction in coral reefs due to bleaching  
 (Eg) - 70-90% of corals reefs will be lost by 2035 (IPCC Report)
- (4) Alteration in migratory patterns in animals  
 (Eg) - Olive riddley turtles along Gairmath Sanctuary.
- (5) Reduction in productivity of ecosystem  
 ↳ Pressure on carrying capacity of habitats.  
 (Eg) - Glacial melting affecting Himalayas
- (6) Extreme weather events increased by 45 times (Eg) - Delhi heat waves.
- (7) Loss of 40% of labour productivity, 3.8% of working hours due to climate change (CWEP Report)
- (8) 436 Million women and girls will be pushed in poverty, hunger by 2035. (UN Women Report)  
 ↳ Creation of climate refugee → migration  
 ↳ Reduction in crop productivity → food security threat.

Approach towards Climate Change

- (1) Prioritisation of sustainable development and implementation of NDCs under Paris Agreement.
- (2) Global transition towards clean energy. (Eg) - ISA under Green Grid Initiative - OSOWOG.
- (3) Bottom up approach to tackle climate change (Eg) Mission LIFE.
- (4) Environmental preservation by measures like community afforestation
- (5) Rainwater harvesting through integrated development projects
- (6) Promotion of Blue-Green Infrastructure
- (7) Penetration of Climate-Smart Agriculture  
 (Eg) ZBNF, organic farming.  
ISDG 17 - Climate Action  
 Coordinated, comprehensive efforts are needed to tackle climate change and avoid the 'tipping point' ahead.

**Feedback**  
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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 are predicted to house around 45-50% of Indian population by 2030. This huge population is vulnerable to increased incidences of disasters.

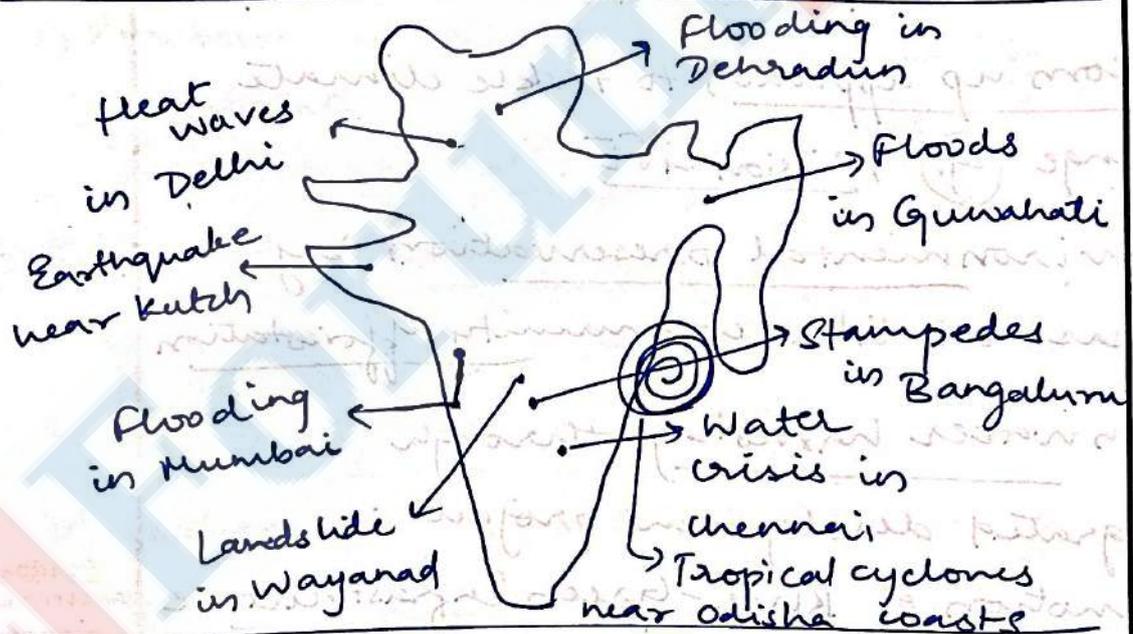


Fig: Disasters in urban areas of India.

Increasing incidence of disasters

(I) Natural disaster

(1) Increased urban heat island effect  
in continental cities.

(Eg) Heat wave in Delhi

(1) Frequent intense tropical cyclones due to warming oceans

(Eg) Cyclones affecting Bhubaneswar

(3) Glacial lake outbursts, river floodings impacting Himalayan cities.

(4) Coastal degradation and floods vulnerability is along 70% of coastal Area

(5) 12.6% of land area in India is landslide prone → (Eg) Wayanad landslide.

① Man-made disaster

(1) Stampedes, overcrowding in the cities

(2) River water pollution contributes to water stress. → 60% of pollution due to industrial effluents.

(3) Mercury, arsenic poisoning in groundwater

(Eg) Cities of Punjab & Haryana.

(4) Epidemic, viral outbreaks

(Eg) Dengue epidemic in Pune

Measures for mitigation

- (1) Hazard proofing and mapping to ensure preparedness.
- (2) Development early warning systems and monitoring systems.
- (3) Information dissemination through digital apps.  
(Eg:) Sagar Vani App for Tsunami
- (4) Development of disaster resilient infrastructure (Eg:) MFLOODS of Mumbai
- (5) Issuing alerts for disaster risk reduction
- (6) Capacity building, community preparedness campaigns.
- (7) Formation of Special Purpose Vehicles for mitigation of disaster.  
(Eg:) Evacuation teams → NDRF,  
Multiple entry-exit points → Stampede.

Best practises  
Senderi Framework for earthquake proofing of cities

NDMA Guidelines, 2005 are a guiding light for protecting urban areas that contribute almost 55% to India's GDP.

**Feedback**  
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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)

Drug trafficking refers to the smuggling of narcotics and psychotropic substances illegally.

Indian territory is marred by the persistence of drug trafficking across borders.

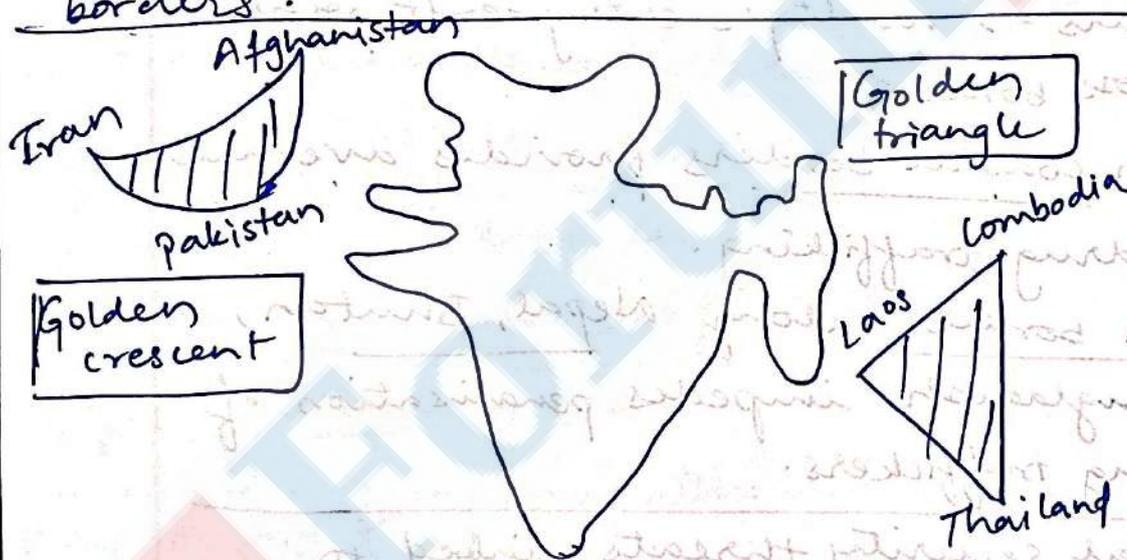


Fig: Geographical location impacting drug trafficking

- (1) Vulnerability to drug trafficking increases due to India being sandwiched between the Golden crescent and golden triangle.

(2) Difficult terrain impedes effective monitoring patrolling.

↳ hilly terrain in North-West borders

↳ Riverine, plains, hills in Eastern border

(3) Porous international borders facilitates drug trafficking.

(4) Organised crime networks across borders → multiple entry-exit points across borders.

(5) Open coastal borders provides avenue to drug trafficking.

(6) Open borders along Nepal, Bhutan, Bangladesh impedes penalisation of drug traffickers.

Internal security threats linked to drug trafficking

(1) Drug trafficking encourages linkages between organised crime and terrorism.

- (2) Increase incidence of narco-terrorism
- (3) Terror-financing and risks to internal security.
- (4) Traffickers collaborate with insurgents, terrorists for cross-border movement.
- (5) Social-degradation of the country.
  - ↳ Demographic disaster threat
  - ↳ Increasing drug culture among youth. (Eg) - Punjab, Pune's drug culture.
- (6) Arms and human trafficking spurs gun-culture in India.



Drug trafficking is a menace that corrodes nations from within.

**Feedback**  
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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)

India is the 2<sup>nd</sup> most vulnerable nation to cyberattacks globally. It houses 2<sup>nd</sup> most digital users and 3<sup>rd</sup> most internet users globally.

Cyberattack threat to National Security

- (1) Vulnerability of critical information infrastructure due to digitisation. (DPI dependence)
- (2) Cyberattacks have led to around \$1 Billion loss of Indian economy.
- (3) Digital transactions amount 67% of financial transactions.  
↳ vulnerability to cyberattacks.
- (4) Data privacy issue due to biometric linkage of Aadhar.

## Challenges to cyber security

(1) Digital illiteracy ~~and~~ and financial illiteracy

(Eg.) Increasing menace of digital arrest

(2) Inadequate cybersecurity infrastructure in smartphones.

(Eg.) - Virus penetration in android phones

(3) Multiplicities of laws, overlapping contradicting cybersecurity laws.

(4) Lack of trained cybersecurity personnel.

• Around 30,000 vacancies pending

(5) Dependence on foreign servers for data storage

(6) Rise in sophisticated cyber attacks

(Eg.) - Password spraying, spamming

(7) Rapid changing technology and possibility of distant attacks

(8) Difficult to identify source of attack

## Measures taken by government

- (1) National Cyber Security Policy, 2013
- (2) Established → National Critical Information Infrastructure Protection Centre (NCIIPC)
- (3) CERT-In → 24x7 Emergency response agency.
- (4) Cyber Swatchata Kendras, Cyber forensic labs
- (5) Subhash Rai Committee → Indigenous data storage mechanisms -
- (6) Awareness generation programs
  - ↳ Social media campaigns.
  - ↳ RBI alerts regarding cyber fraud.

In the IR-4.0 Cybersecurity is a non-negotiable to achieve dream of Digital India.

**Feedback**  
(For OFFICE use)

#	⊙
AWIS	
CD & VA	
S & F	
P & R	
Please put tick marks in the table.	
Here G is Good Average and P Poor.	
TOTAL MARKS	