

TEST CODE	8	1	3	4	0	7
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MGP 2025

Time Allowed : Three Hours  
समय : तीन घंटे

**ForumIAS**

Maximum Marks : 250  
अधिकतम अंक 250

**GENERAL STUDIES / सामान्य अध्ययन**

Name Of Candidate परीक्षार्थी का नाम	S. YASHWANTH		
Roll No./अनुक्रमांक	1910128331	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	1910	Date/दिनांक	02-08-2025

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

INDEX TABLE / 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 : 4:45 PM	End Time/समाप्त करने का समय : 7:45 PM
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन <input checked="" 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 :	Evaluation Date/ मूल्यांकन तिथि :
			EG/ईजी : 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)

### Employment linked Incentive scheme (ELI)

focuses on increasing the employment whereas

Production Linked Incentives (PLI) scheme on incremental  
production sales.

ELI

PLI

1, ELI focuses on incentivizing  
the industry for employment  
growth.

2, it aims to stimulate the  
employment.

3, Approached through government  
contributions to the employee  
part in NPL.

4, Aims to reduce the  
unemployment - VR-3.2.1.

1, PLI focuses on incremental  
sales of increase in production

2, it aims to provide  
incentives for enhanced  
production.

3, sector centered incentives  
for increase in production

4, introduced by 14 sectors  
with 1.9% to 14% CBE

1) Aims to move towards structural transformation of economy.

6. Aims to utilise the demographic dividend of the country.

In the past 5 years.

(1) Aims for efficiency in productivity and production

(6) To assist the producers through incentives in incremental products.

**Achievements** → **ECI** - reduced unemployment rate

↓  
**PLP**  
 → self sufficiency  
 in mobile manufacturing  
 → increased exports

→ increase in formalisation of economy.  
 → EPFO subscriptions doubled in last 5 years.

**Constraints** → sectoral traction in PLI - electronics and pharmaceuticals (70% benefits)

ECI needed enhancement in structural transformation  
 India needs inclusive growth to ensure job growth and GDP growth.

**Feedback**  
 (For OFFICE use only)

	G	A
AWIS		
CD & VA		
S & F		
P & R		

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.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 is the phenomenon where the process of brain drain reverses towards the home country resulting in accumulation of human capital.

Reverse Brain drain :-

1. Return of the migrants to their own countries

↳ NRI's involved in high service sectors returning to India

2. Increased return of diaspora with high skills to the home country.

India is the highest remittance receiver in world with \$129 billion remittances primarily due to the brain drain to the western countries.

Key drivers of the rising trend of Reverse Brain Drain :-

1. Conservative policy of the destination country.

↳ USA after temp has resulted in migration of Indians from USA

2. Increased opportunities for the skilled workforce in the home countries.

3. Lack of safe spaces due to racist policies.

↳ UK racism towards the Indians

4. Geopolitical risks making the destination country

unsafe ↳ West Asia conflicts resulted in reverse migration of the diaspora.

5. Policy of the country in leveraging the brain gain curbing the brain drain.

India is focusing on boosting the labour

force in addressing the needs of global space.

Reverse brain drain obstructs the India goal and it needs to be addressed effectively.

**Feedback**  
(For OFFICE use)

	Q	R
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CD & VA		
S & F		
P & R		
Please put tick marks in the above table.		
Here O is Good Average and P is Poor.		
<b>TOTAL MARKS</b>		

**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)

Dedicated Freight Corridor (DFC) aims to reduce the logistics cost of the country from (14.1%) GDP to 10% under National Logistics Policy.

Significance of Dedicated Freight Corridor

1. Reduces the logistics cost and fosters trade competitiveness in the global arena
2. providing last mile connectivity to the resource rich regions of Jarkhand, Chhattisgarh
3. Infrastructure development of the region through growth of ancillary industries
4. Improves the transportation amenities and results in more employment opportunities in the region.

(Don't Write in this Area)

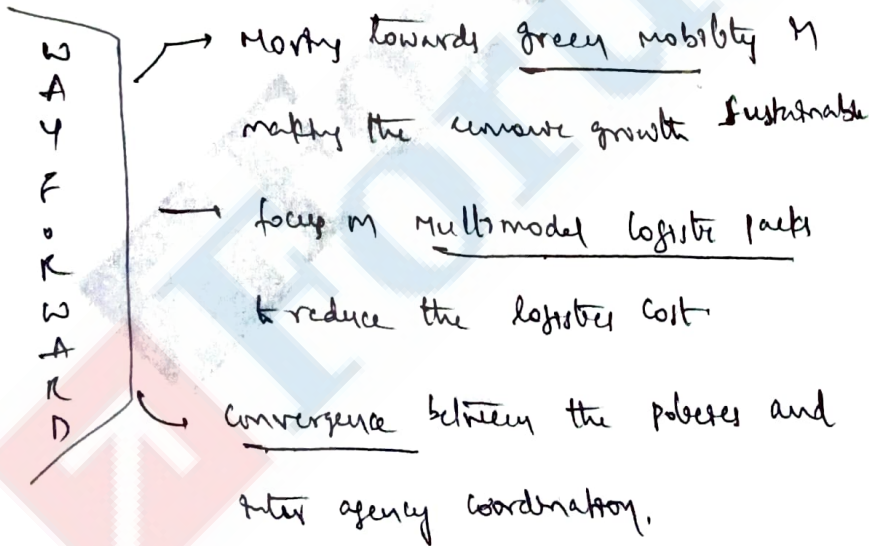
5) enhances the availability of raw materials to the base industries boosting the economic growth

6) Multiplicative effect of the DFC results in the establishment of services such as tourism, hotel industries

Eastern DFC built with the assistance of World Bank

Western DFC with assistance of Japan International

Cooperation Agency (JICA)



DFC could help in ~~addressing~~ reaching the objective of VISIT BHARAT by 2047

**Feedback**  
(For OFFICE use)

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Please put tick marks in the above table.		
Here G is Good, 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/प्रेसिजन 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 is the application of inputs precisely at right time in right quantities of right inputs using modern technologies such as drones, and

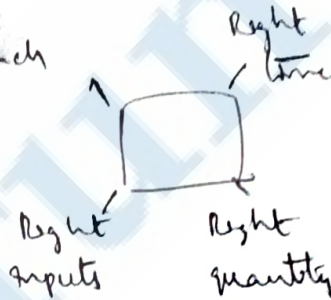
Precision agriculture in optimizing crop production:

1. It results in the 4R approach boosting crop yields.

2. Reduces the unnecessary usage of the pesticides and fertilizers.

3. Focuses on the advanced seeds, (high yield variety) ensuring crop production rise.

4. Monitoring through drones could lead to usage of pesticides at right time reducing the crop diseases.



(Don't Write in this Area)

Precision agriculture optimising resource management

- 1. Reduces the wastage of fertilizers
  - only 1% of the fertilizers reach the targeted crops
- 2. Reduces the ground water over utilisation.
  - Mishra Shah committee → over 60% of districts <sup>over use</sup> ground water.
- 3. Reduces the land wastage through optimum land planning for agriculture - Integrated farming.
- 4. Adds an circle economy reducing the wastage of by products.
- 5. Provides with adequate resources in addressing the resource overconsumption.

India needs to expand mbe coverage under precision agriculture to boost crop productivity and productivity.

**Feedback**  
(For OFFICE use)

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Please put tick marks in the table.	
Here G is Good, 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)

India stands first in rice exports and second in rice production globally. Despite this rice has not seen similar innovation in processed food products as compared to wheat.

Reasons for limited innovation in processed food products of rice :-

1. Limited research and development in the rice crop compared to the wheat.
2. Limited value addition done in the rice crop.
3. Research and development innovations are limited to the basic food products than processed food products.
4. Enhanced focus on improving the crop yield than

(Don't Write  
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लिखें मत)

Value addition of the crop.

Measures needed

1. Focus on Value addition of the rice crop.
2. Focus through dedicated research institutions.
3. Global collaborations in the research.

India needs to move towards food processing  
to meet the needs of its high population.

**Feedback**  
(For OFFICE use)

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Please put tick marks in the table.	
Here G is Good 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 system works on the principle of storing the water at heights through potential energy.

working principle :-

1. pumped storage hydro power system stores water energy in the form of potential energy.
  2. The energy when needed is utilised by bringing the water down converting the potential energy to turn the turbines.
  3. The potential energy converts to electrical energy resulting the the energy production.
- ⇒ Hydro electric power projects utilise this pumped storage hydropower system.

(Don't Write in this Area)

key advantages it offers compared to other power storage technologies +

- 1. Availability of resources for the manufacturing.
  - battery energy storage systems need lithium and critical minerals that are not available
  - India depends on china for 70% of lithium.
- 2. Grid stability and the feasibility in the generation of energy when needed.
- 3. cost impacts when compared to other storage technologies are low.

Disadvantages

- Heavy infrastructure
- challenges of terrain
- ↳ lack of continuous source challenges its stability.

India needs to build stable power storage systems to meet its rising power demands

**Feedback**  
(For OFFICE use)

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Please put the marks in the table.	
Here 0 is Good Average and 1 is Poor.	
TOTAL MARKS	

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)

COP (Conference of Parties) 29 has happened in Baku, Azerbaijan. It is organised under UNFCCC.

Major outcomes of COP 29:

1. New collective quantified goals of finance (NCEG) -  
Agreeing to enhance the global fund to \$300 billion from the existing \$100 billion by 2025.
2. Phasing down the coal through investments in green economy.
3. Tripling the nuclear energy capabilities and aiming for just energy transition.
4. Baku Harmony Initiative for farmers in climate finance for sustainable agriculture.

17. Analysing the market and non market methods of carbon trading under Article 6.2, 6.4 of Paris agreements.

6. COP29 resulted in the adoption of Baku Agenda and also push for the next COP30 in Brazil.

### Constitutional

1. The funding of finance through loans, was criticised by the developing nations.

2. The finances expected were \$1.2 trillion necessary far from the agreed goals.

3. phase down of coal criticised by the small island developing states (SIDS).

Need to uphold the principles of CBDR-RC to ensure equity in climate finance.

Feedback  
 (For OFFICE use)

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Please put tick marks in the table.  
 Here G is Good Average and F 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)

Solar technologies in the global arena ~~are~~  
aim to address the just transition and  
equitable developments.

Energy by solar technologies addressing resource  
scarcity:

1. conventional energy resources are limited and the resource is concentrated in limited areas
2. solar energy provides alternative for the fossil fuels and solar technologies aim to leverage them.
3. solar photovoltaic modules help in increasing the efficiency of solar cells through 'spectrum capture'
4. solar energy technologies address the challenges of limited resource availability.

Solar technologies addressing environmental degradation

1. provides a path for just transition.
2. Reduces the utilisation of coal and fossil fuels reducing the green house gas emissions.
3. solar technologies reduces the utilisation of conventional sources and helps in environmental conservation.
4. solar technologies utilise the tech advancements improving the insulation capture efficiency.

Recent innovation :- Quantum cells in solar cells

↳ Nanosized particles enhance the solar cells efficiency.

It is in line with India's policy of International Solar Alliance and SDG 7.

**Feedback**  
(For OFFICE use)

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Please put tick marks in the table.	
Here G is Good 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 security measures provided to the research ecosystem in the country. India Research and development is 0.7% of GDP indicating high need for R&D.

Key hurdles in ensuring research security in India

1. Limited capacity of the administration.
2. Lack of available funding in the research ecosystem.
3. Stipend to theoretical research, and limited emphasis on application research.
4. Lack of proactive security measures for the research ecosystem.
5. Limited cyber security capacities for the institutions.

involved in the research.

6. low spending on the security purposes and high on administrative fields.

7. Increasing technology has raised the security threats challenging its adoption.

### Measures needed:

1. Capacity development of the administration
2. Coordinated responses with the respective institutions.
3. Increase the funding capacities.

Research is primarily needed for country's growth and research security is of paramount importance in this mean.

#	Q
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Please put the marks in the table. Here G is Good Average and Poor.	
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 शक्तियाँ) अधिनियम, 1958 (AFSPA) 'अशांत क्षेत्रों' में शांति और स्थिरता बनाए रखने के लिए आवश्यक है। आलोचनात्मक परीक्षण करें। (10 अंक, 150 शब्द)

Recently Armed Forces (Special powers) Act, 1958 (AFSPA) was retroposed in Manipur following the ethnic conflict.

AFSPA → necessary for peace and stability in disturbed areas

1. Armed forces require special protection in their functions of ensuring stability.
2. The highly disturbed areas involve the insurgents and auto social elements; utilisation of force to address a paramount threat.
3. Presence of state sponsored insurgencies in the northeast demand for special powers to armed forces. ↳ Chinthee backed support for NSCN.
4. Searching the premises might require immediate

(Don't Write in this Area)  
पर कुछ न लिखें

approvals which are lacking due to bureaucratic delays

5) Addressing the stability conditions require usage of force

**A FSPA - weakening the institutional accountability**

1. Limited judicial review on the activities of the armed forces.

2. Allegations of human right violations by the armed forces in the north east.

3. Lack of accountability of the armed forces for their acts

4. excessive use of force leading to questioning the doctrine of proportionality

**Recommendations of Jeevan Reddy Committee**

are necessary for addressing the challenges of A FSPA

**Feedback**  
(For OFFICE use)

AWIS	
CD & VA	
S & F	
P & R	

Please put the marks in the table.  
Here G is Good Average and P is Poor.

**TOTAL MARKS**

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 aims to reach Viksit Bharat by 2047 and for this it needs double digit growths for at least eight years as projected by economic survey 24-25.

Inadequate progress in factor market reforms  
impeding India's growth aspirations

1. Inadequate progress in building a pan-India market for agriculture
  - results in low price realisation leading to low agr. growth.
2. Lack of adoption of APMC reforms in agriculture sector leading to wastage of resources.
3. Unregulated market prices that have become

Challenges for free market-

1. E-commerce agreements with vendors
4. Adoption of digital technology have impacted the small scale businesses.
5. Lack of regulatory oversight in the market has increased the misleading advertisements.
6. Resulted in misplaced GDP emphasis.

Measures taken by government -

1. Emphasis on ONDC (Open Network for Digital Commerce) providing a level playing field for both the small businesses.
2. Provision of e-NAM National Agricultural market for price realization of farmers.
3. Strengthening the regulatory institutions.

4) STES (BRSA) Ad comparison.

4, model laws of APMC to guide the state governments in addressing the market reform needs.

5, Focus of assistance to industries beyond the production needs. (in compliance with WTO requirements).

India needs faster market reforms to realise the double digit growth aspirations and to become 3<sup>rd</sup> largest economy by 2030 as projected by IMF.

**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)

Indian Rupee has seen a historic low of ₹78 per 1 dollar exchange rate leading to depreciation.

This was due to geopolitical uncertainties, economic fragmentation and global policies.

Factors responsible for depreciation of Indian Rupee

1. Global uncertainties & with 2024 elections in many countries, the global trade policies are undergoing an uncertain period.
2. Trade protectionism policies with global uncertainties countries are increasingly moving towards protectionism hampering trade and exchange rates.
3. Geopolitical conflicts & West Asia and Middle East conflicts (Israel vs Iran) had increased the oil costs leading to imported inflation.

4. test of Foreign portfolio investors: due to quantitative easing of the central banks in the world.
  - High repatriation observed in 2014.
5. High competition around the globe hampering the exports of the countries leading to increase in CAD.

### Implications of depreciation for Indian economy

1. Enhances the trade competitiveness of the exports boosting the exports.
2. Imports become costlier and in turn impacts the Balance of Payments.
3. Weakens the investor confidence and might result in Foreign portfolio investments withdrawal.
4. Forex reserves depletion leading to challenges in independent fiscal policy.
5. High import exports gap could result in the growth slowdown.

Policy measures to stabilize the currency

- 1, Strengthening of Indian Rupee through currency swap agreements.  $\Rightarrow$  Japan India swap agreement
- 2, Diversify exports to new countries through free trade agreements  $\Rightarrow$  UK, India FTA
- 3, Reduce dependence on imports and invest in green technologies.  $\Rightarrow$  solar energy as alternative to oil imports.
- 4, Regulatory institutions to propose alternative to dollarisation  $\Rightarrow$  BRICS de-dollarisation.
- 5, Trade in local currencies to mitigate the effects of depreciation.  $\Rightarrow$  Rupee Rouble

Indian Rupee has not depreciated, though dollar has appreciated and focus on the policy measures could mitigate its impact.

**Feedback**  
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Here G is Overall Average and F is Poor.	
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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)

India constitutes 89% of small farmer households with less than 2 hectare land. Farmer producer organisations (FPOs) could build collective capacity and boost the agriculture economy

FPO's addressing issues and boosting agrarian economy

- 1, FPO's could increase the bargaining power of small farmers realising higher prices.
- 2, FPO's could help the farmers in mechanisation and adoption of high cost capital investments  
 (e.g) community learning centres
- 3, FPO's could help in better agreements with Food Processing Industries (FPI's).
- 4, FPO's could help in better realisation of agri extension services.

### Factors limiting potential of FPO's ↓

- 1, weak policy support in formation of FPO's.
- 2, institutional divergences in the formation of FPO's.
- 3, limited awareness among the farmers in the benefits of FPO's.
- 4, lack of APMC reforms hinder the potential of FPO's through first sale mechanisms in APMCs.  
~~if~~ <sup>each</sup> APMC operate for not than 432 km.
- 5, limited capacity of FPO's in adoption of technology, and funds. - limited agriculture credit.
- 6, excessive dependence on monsoons (52%).  
 - Indian monsoon is a gamble in agriculture.
- 7, lack of agricultural mechanisation (40%) (BRS&L-75%).
- 8, excessive utilization of fertilizers above the prescribed limits NPK ratio - 7:3:1.

Measures to address the challenges and realize the potentials of FPO's :

- 1, Focused policy towards FPO formations and enhancing the capacity.
- 2, promotion of RAMPs (Rural Market Associations) as alternative for sale of food grains.
- 3, Building capacity in technology adoption through government policies  $\Rightarrow$  Kisan Suraksha Portal
- 4, providing access to inputs and ensuring scientific advices  $\Rightarrow$  SATHI portal for seeds.
- 5, More irrigation to be increased.
- 6, more towards integrated fertilizer management

FPO's aim to realize the goal of Shikhar i.e. Samridh through collective capacity and above measures are required to realize doubling of farmers income

**Feedback**  
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TOTAL MARKS			



**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)

Aqua culture provides much higher yield than agriculture in allied activities with more than 15% current Annual growth rate.

Significance of aqua culture towards nutritional security:

- 1, ensures nutritional requirements are met in the population  $\Rightarrow$  fishes, shrimps have high proteins and antioxidants.
- 2, MDM schemes (mid day meal) in states are moving towards aqua products for nutritional diversity.
- 3, ~~fishes~~ Fishes, shrimps and sea products are rich in nutrients essential for immunity boosting.
- 4, seaweeds are high in antioxidant elements.

that are cultured artificially.

### Towards livelihood generation:

1. Aqua culture provides for nearly 30% of population in agriculture with employment opportunities.
2. Aqua culture sector in coastal communities form a life line for employment.
3. Growth of inland fisheries has boosted rural employment.  $\Rightarrow$  Andhra Pradesh inland fisheries

### Towards economic growth:

1. Aqua culture provides a safety net for farmers in case of low rain/falls due to monsoon.
2. It provides agricultural growth through allied activities.  $\Rightarrow$  Agriculture 5% growth in past 5 years driven by aqua sector.
3. provides positive forex reserves through high export potential in USA, western nations.  $\Rightarrow$  shrimps.

## Measures taken to promote sustainable aquaculture

1. PM MSY (Radhakrishna Mission Sampada Yojana)
  - boosting the value addition in the fish processing sector.
2. Providing fisherman assistance in the lean periods to prevent overfishing.
3. Focus on sustainable fishing through checks on blast fishing practices.
4. Focus on aquaculture practices through inland fisheries.
5. Extending credit to fish farmers through Kisan credit cards.
6. Utilisation of technology in communicating with the fisherman.  $\Rightarrow$  2-way communication.

Recent US trade restrictions hurt the aquaculture sector and India needs to diversify the exports to contain the US trade impact.

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Here O is Good Average and P is Poor.	
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Q.15) What is gene therapy? What makes it a better treatment option than the conventional approach  
(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 the process of using genetic technology to make modifications in the host cell.

Gene therapy

1. Gene therapy involves addition, modification in host genetic material.

2. It involves silencing of particular genes to reduce dramatically its role in gene sequence.

3. Gene therapy involves the utilization of foreign gene material in some instances.

↳ CAR-T cell therapy (Chimeric Antigen Receptor)

T-cell therapy involves the modification of genes

to kill the cancer cells

(Don't Write in this Area)

4. It is called through the process of CRISPR, ZFN (Zinc Nucleases), TALEN.

5. It helps in restoring the diseases that are difficult to address through conventional approaches.

Gene therapy a better treatment option

1. Reduces the harmful effects

↳ chemotherapy involves radiatory exposure whereas CAR T cell therapy avoids it.

2. Helps in addressing the genetic diseases and prevents their transmission.

3. Targeted delivery of the medicine to the cells. ↳ chemotherapy kills the healthy cells in radiatory.

**Feedback**  
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4. silences the unnecessary genes thus reducing the harmful impacts of mutation.

1. Genetic mutation is observed as side effects in conventional approaches.

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→ make ~~the~~ gene therapy accessible

→ Reduce the side effects  
(cytokine release syndrome observed in case of CAR T cell therapy)

→ Improve the cost management

↳ Increase awareness and increase the regulatory standards.

Gene therapy provides futuristic outlook for the health sector enhancing the treatment options.

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)

India aims to establish its own space station

Bharatya Antariksha Station (BAS) by 2035.

Reasons for countries keen on developing own space stations:

- 1, Militarization of space & increased presence of military satellites for spying in space has led to arms race in space sector.  $\rightarrow$  China.
- 2, Geopolitical tensions hindering the global collaboration.
- 3, Aged infrastructure. the International Space Station (ISS) is set to retire indicating the need of new space stations.
- 4, Strategic autonomy in addressing the needs of the country both military and civilian.

5. Boosts the image of the country in global arena  
- country international image

Obstacles faced in this process of space station  
development :-

1. High initial costs required in the development of space station.
2. High capital expenditure and long gestational period hinders the private sector investment.
3. Limited technological developments of the country.  $\Rightarrow$  lack of space docking availability.
4. Limited infrastructure capacity  $\Rightarrow$  rockets with limited payload capacities.
5. Instated policy of the country to have a coherent approach in space infrastructure.
6. Geopolitical race in space developments and the issues of debris in space.

### Measures to overcome the obstacles

1. Building capacity of the personnel through global missions.  $\Rightarrow$  Axonomy mission made Captain Subhanshu Shukla to reach ISS.
2. Build the infrastructure capabilities.  $\Rightarrow$  India proposed next generation launch vehicle
3. Phased efforts through missions in space society, human space flights.  $\Rightarrow$  Spadix, Gaganyaan mission
4. Global collaborations in other space missions to understand the microgravity research  $\Rightarrow$  NISAR
5. Invest in Research and development in the space industry.

India with its current missions of Gaganyaan, Chandrayaan 4, is in the right direction of developing its own space station by 2035.

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 has caused changes in

lithosphere, hydrosphere, atmosphere

anthroposphere impacting all the ecosystems.

Climate change - alterations in ecosystems:

1. Climate change has increased melting of glaciers in Himalayan ecosystem leading to landslides, earth quakes.

2. SIKKIM GLOF in 2023

2. Climate change leading to sea level rise impacting the coastal ecosystems with sea water salinity intrusion and cyclones.

3. Climate change rising the global temperature leading to more disasters.

Climate triggering impact on biodiversity:

1, climate change has increased in the distances of wild fires.  $\Rightarrow$  California wild fire impacting the forest ecosystems.

2, Impact of ocean acidification leading to coral bleaching.

3, Impact of heat waves has increased



### Impacts of ecosystem services

1, Reduces the ocean products through reduction in metabolism rates in fishes.

2, glacial melting resulting in lack of water availability for future generations.

3, ozone depletion through polar stratospheric clouds

### Impact on human livelihoods

1, Reduction in productivity - IMF predicts loss of 7% of productivity due to heat waves.

2, Intersectoralities of vulnerabilities. About 20% of displaced

all money due to climate change (VNI).

3. sporadic monsoon impacts the Indian agriculture.

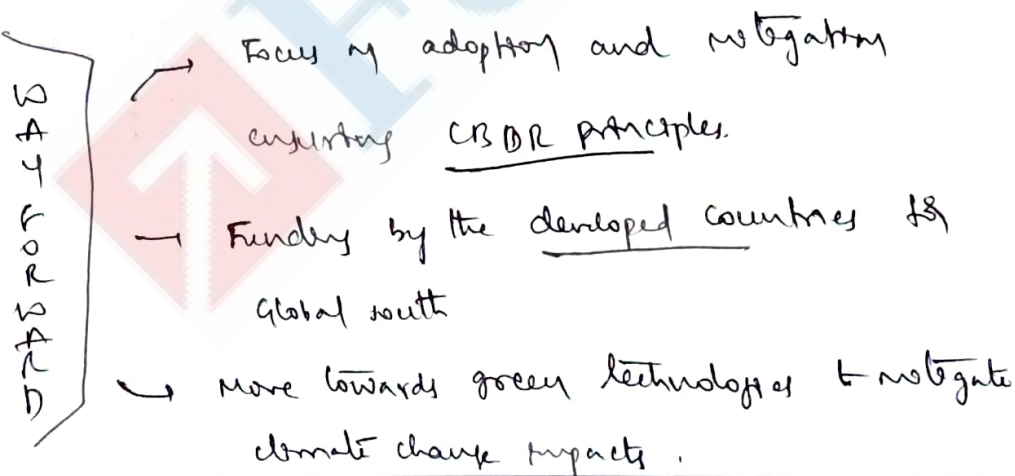
↳ 12% dependent on monsoons for rainfall.

demanded an integrated approaches to conservation and climate adaptation.

1. climate change is caused due to multilateral factors demanding an integrated approach.

2. roles & working of the sectors is transformed & interdependent through global collaboration.

3. 4th emissions by developed countries impact the small island developing states needing integrated approach to adapt.



**Feedback**

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TOTAL MARKS			

Above measures are necessary to meet the Paris negotiating goal of 2°C.



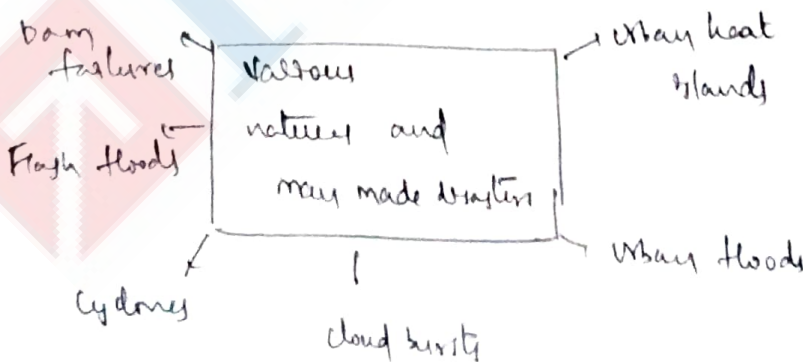
Q.18) Often referred to as the 'cradle of civilization' and 'growth engines', urban areas are increasingly experiencing various natural and man-made disasters. Discuss in the Indian context. Also, suggest suitable mitigation and management strategies. (15 marks, 250 words)

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 in India with 31% of population according to Census 2011 result in 60% of economic growth making them growth engines of the country.

Urban areas as cradle of civilization and growth engines

- 1. Urban areas with manufacturing and services contribute to GDP of the country.
- 2. Urban areas with high employment opportunities collaborate in the growth potential of country.



Disasters in urban areas in Indian context

- 1, increased incidents of heat waves - high temperatures observed in metropolitan cities - due to urbanisation of the cities.
- 2, urban floods due to encroachment of lakes.  
 ↳ Bellandur lake encroached in Bangalore.
- 3, cloud bursts incidence is rising due to climate change impact resulting in massive economic loss.
- 4, cyclones impact on coastal urban areas.  
 ↳ cyclone Amphan hole in Chennai disaster.
- 5, High construction activities without impact assessment leading to dam failures.
- 6, Industrial disasters due to the leakage of the hazardous chemicals. ↳ CG polymer leakage in Vijayawada

## Mitigation and management strategies

1. Understand the risk - of the urban area through impact assessments.
2. Inter agency collaboration - develop holistic approach with non-hydric collaboration  $\Rightarrow$  state and nation NDRC.
3. Investing in disaster risk reduction (structural measures) - Focus on buoyant buildings, earthquake resistant buildings, sponge cities.
4. Invest in non structural measures & policy changes  $\Rightarrow$  Disaster Management Amendment 2024.
5. Capacity development - of citizen and the personnel in times of disasters.
6. climate change risk assessment - through technology adoption and periodic reviews.

Above measures could help in realising SDG 11 of sustainable cities and communities.

### Feedback

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Here O is Good, Average and P is Poor.

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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)

India's geographical location between Death triangle and Death crescent increase the vulnerability to drug trafficking.

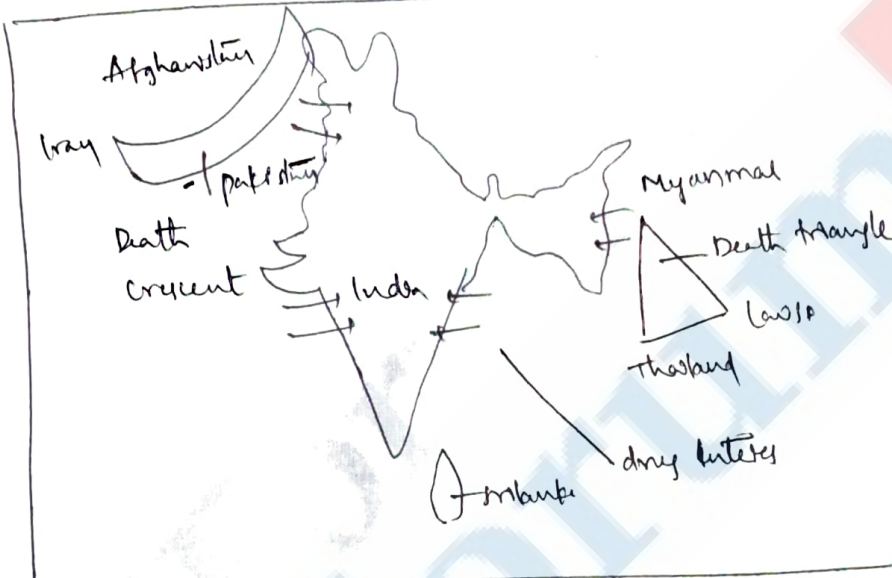


Fig: India location and death Δ, death crescent

Heightened vulnerability to drug trafficking

- 1, narco terrorism is observed in the North East states through drug entry from Myanmar
- 2, porous borders between the North Eastern states has

Impacted on drug use

3. Drug enters through ports  $\Rightarrow$  Very port seizure of cocaine in 2014.
4. Dropping of drugs in Punjab through UAFK by naeco offenders from Pakistan.
5. Entry of drugs in Mumbai through coast.

Various internal security risks linked to drug trafficking

1. Narco trafficking has provided finances for the insurgent groups in North east  $\Rightarrow$  NDFB, ULFA
2. It provided for necessary terror financing and built linkages with organised crime
3. It destabilises the free movement regime in the country.  $\Rightarrow$  recent reduction in free movement regime boundaries (16km - 10km).
4. It increased the substance abuse and crimes in the country.  $\Rightarrow$  MHRD dependency

1) Navo trafficking has acted as alternative finance mechanisms for para-based terrorist group.  $\Rightarrow$  Jash-e-Mohammed, TRF

6. Influence of Tablani on the internal security risks through their poppy cultivation.

7. The structure of the entry of drugs is utilised for terror attacks.  $\Rightarrow$  9/11 attacks through coast

Measures to address the drug trafficking

1. Border outposts and smart fencing of the border in feasible areas.

2. Frequent patrolling using VAV's to check the entry of drugs.

3. Awareness among the youth in substance abuse dangers.

4. Coastal protection measures through coastguard patrolling.

Nasha Mukht Bhaent ~~Abeyaz~~ focus on making

India free from substance use and above measures are necessary.

Feedback

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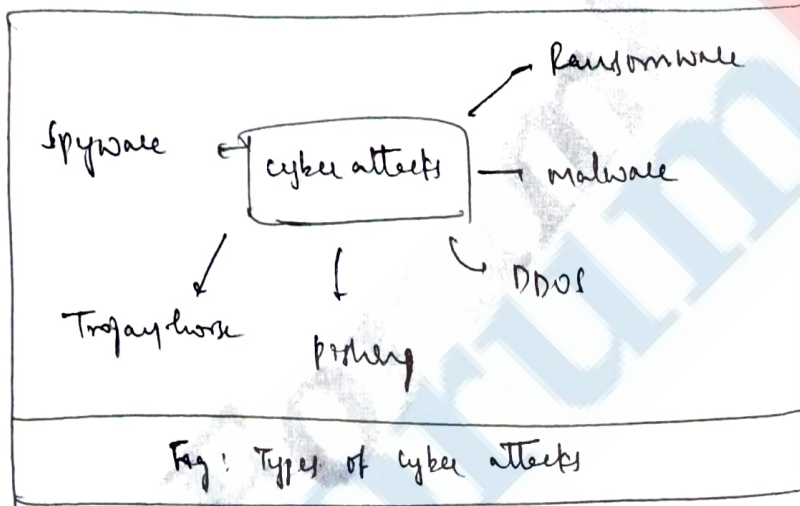


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**Q.20)** The increasing frequency and sophistication of cyberattacks pose a significant threat to national security. Discuss the major challenges in ensuring cybersecurity in the country and enumerate the measures taken by the government in this regard.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

Recently, India has witnessed DDoS (Distributed Denial of Service) attacks post operation Andhokar indicating the increase in frequency of cyber attacks.



Major challenges in ensuring cyber security

1. Increasing sophistication of cyber attacks + with technology proliferation, cyber attacks are difficult to address.
2. weak capacity of the administration in addressing the

## Cyber threats

3. low cost high impact approach of the cyber hackers makes it difficult in ensuring cyber security.
4. Intersectability of cyber threats with terrorism.
  - ↳ Cyber warfare by china and pakistan.
5. limited infrastructure capacity of the signatory.
6. lack of regular reporting to the authorities regarding the cyber threats.
7. lack of awareness due to digital divide.
  - ↳ Digital assist cyber scam.
8. lack of coordinated measures in addressing the cyber threats.

measures taken by government :

### 1. Institutional measures

1. Indian cyber crime coordination center (I<sup>4</sup>C<sup>2</sup>) as the nodal agency to address the cyber attacks.

2. NCIIPC (critical information infrastructure protection center) - protects critical infrastructure.
3. Cyber Swachh Bharat - to build capacity in addressing the cyber threats.

### Policy measures

1. National cyber security policy has outlined the policy level measures.
2. Zero trust framework - ensuring addressing the threats of malware.
3. Capacity building of the administration through technology adoption,  $\Rightarrow$  Quantum encryption.

### State level measures

→ Cyber dome by Kerala government

↳ cyberabad initiative by Telangana

cyber security framework is necessary to ensure national security and government policies are in the right direction in this regard.

### Feedback

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