



TEST CODE 7 1 3 3 1 4

FIAS | MGP 2024 | Open Test - GS Paper #3

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	ARPIT KUMAR 1910135160		
Roll No./अनुक्रमांक	Medium/माध्यम	English ☒	Hindi ☐
Center Code/परीक्षा केंद्र	Date/दिनांक		

*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		
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20		
Total/कुल अंक	250	

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।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।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।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।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।

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 ☐ Offline/ऑफलाइन ☐

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ECN CODE/ ईसीएन कोड :	EG/ईजी :	Evaluation Date/ मूल्यांकन तिथि :
	① ② ③ ④ ⑤	

*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।

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

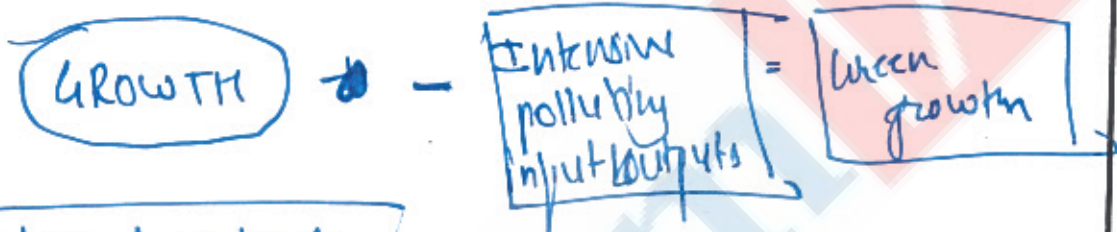
CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

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) What do you understand by 'green growth'? Enumerate the measures taken by the government to promote green growth in the country. (10 marks, 150 words)

'हरित विकास' से आप क्या समझते हैं? देश में हरित विकास को बढ़ावा देने के लिए सरकार द्वारा उठाए गए कदमों का उल्लेख करें। (10 अंक, 150 शब्द)

Green growth refers to employment of environmentally sustainable inputs and having final outcomes which are not environment intensive.



Important methods

- ① Carbon neutral mechanisms [e.g. carbon capture methodology]
- ② Focus on sustainability [e.g. green hydrogen initiation as source of energy]
- ③ Energy transition [Panchamrit pledge at COP 27 to go carbon neutral by 2070]
- ④ Organic and Zero budget Natural farming practices and involvement of millets
- ⑤ Utilization of technology e.g. Fly Ash precipitator

① Transportation conducive to environment

MEASURES TAKEN BY GOVERNMENT

① Green India mission.

② PM Surya Har Ghar Yojana (as of now only 11 GW from rooftop, from solar energy)

③ National water mission, Jal Jeevan mission

④ Green hydrogen mission: 5 Million metric tonnes per year production by 2030

⑤ FAME INDIA: for electric vehicles

⑥ Sustainable development goals pledge: reducing % of carbon intensity

⑦ Renewable purchase obligation: for power sector reform.

Way forward → Comprehensive inter-ministerial coordination
① like rev. of Renewable energy and div. of power

② Learning from Denmark: green infrastructure policy

Green growth is necessary not only for sustainability but for our urgent needs to be in tandem with future

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

Q.2) DPI (Digital Public Infrastructure) is a critical enabler of digital transformation for both businesses and citizens; however, it comes with its own set of challenges. Examine. (10 marks, 150 words)

डीपीआई (डिजिटल पब्लिक इन्फ्रास्ट्रक्चर) व्यवसायों और नागरिकों दोनों के लिए डिजिटल परिवर्तन का एक महत्वपूर्ण प्रवर्तक है; हालाँकि, इसके साथ अपनी चुनौतियाँ भी जुड़ी हैं। जाँच करें। (10 अंक, 150 शब्द)

Digital public infrastructure signifies digitization of public goods aspect so as to increase the government-public digital interface and enhance accessibility

ENABLER → BUSINESS

- ① provide investment opportunities
- ② cloud services so as to reduce data services storage charges
- ③ enhance interoperability
- ④ connecting customers by providing secure channel (e.g. e-kuber RBI transactions)
- ⑤ International transactions (SANDS portal)
- ⑥ Coordination with finance ministry (e.g. public financial management system)
- ⑦ Capital sustainability: (hub and spoke model)
- ⑧ Market finding ease: (Open network for Digital Commerce)

⑧ Ease of finding procurement (eg LCM portal of govt)

IMPORTANCE FOR CITIZENS

- ① Reduction of exclusion and inclusion errors (eg PM INDIA AASHA)
- ② Healthcare (Aarogya Setu)
- ③ Education (e- Samagra, Digital India)
- ④ Ease of grievance (e- Shakti) portal for women
- ⑤ Reducing competitive oligopoly (eg Open Network for Digital Commerce against market duopoly)

⑥ Cyber security = safeguarding critical (NCRB report: 24% of time increased)

- Way forward
- ① Diversification into domains
 - ② Cyber-sensitization and cyber resilience (eg AIRMI portal)
 - ③ A special task force for cyber security

Digital public infrastructure forms foundation of Industrial Revolution 4.0 where Data is new oil

Feedback

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

Q.3) Explain the different types of trade agreements? How is a Comprehensive Economic Partnership Agreement (CEPA) different from a Free Trade Agreement (FTA)? (10 marks, 150 words)

विभिन्न प्रकार के व्यापार समझौतों की व्याख्या करें? व्यापक आर्थिक भागीदारी समझौता (CEPA) मुक्त व्यापार समझौते (FTA) से किस प्रकार भिन्न है? (10 अंक, 150 शब्द)

Agreements between nations showcase the methodology they are going to attempt in liberalising or retaining protection walls and imports/exports

Different types

- ① Free + Preferential trade Agreement = positive list of what you want to trade
- ② Free trade Agreement = a negative list
(e.g. Trans Pacific Partnership) (except this, all trade allowed)
- ③ Comprehensive economic Partnership = opening of investment and exclusivity in tariff reduction
(India-USA)
- ④ Common union = movement of people
(European Union)
- ⑤ Economic union = common currency model

Difference between CFTA / FTA

- ① Reduced number of negative list of import/export to minimum in CFTA
- ② Avenues of investment opportunities in CFTA
- ③ Streamlined clearance for faster resolution of permits.
- ④ Memoandum of understandings for segments like space, Automobile etc
- ⑤ Emergence of 'complex interdependence' and below the bar tariffs.

- Some examples
- ① India-Japan CFTA
 - ② India Australia CFTA / AFTA
 - ③ India-UAE

India's urge for CFTA with European Union and large powers shows its ability to emerge as fifth largest economy.

Feedback

(For OFFICE use on)

#	G	A	P
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CD & VA			
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P & R			

Please put tick marks in the above table.

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TOTAL MARKS	
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Q.4) The rationale behind the MSP system is well acknowledged, but it requires comprehensive reforms to mitigate the unintended consequences on the market and environment. Analyse.

(10 marks, 150 words)

एमएसपी प्रणाली के पीछे का तर्क सर्वविदित है, लेकिन बाजार और पर्यावरण पर पड़ने वाले अनपेक्षित परिणामों को कम करने के लिए इसमें व्यापक सुधारों की आवश्यकता है। विश्लेषण करें

(10 अंक, 150 शब्द)

Minimum security price regarding demands from the farmer lobby, and Commission of Agriculture price (CACP) recommendations has brought usefulness of MSP into question

Rationale behind MSP

- ① Income security for farmers
- ② Procurement for public distribution system
- ③ A tool of catering to food security needs of India.

**REQUIRED MITIGATION
MARKET CRISIS**

- ① Supply-demand mismatch & Artificial inflation
- ② Skewflation - e.g. price of Tomato going upto Rs 120 (as specific commodity cost hike)

- ③ crowding out effect of private sector investments in agriculture
- ④ Over production of cereal centrality :- impact of pulses and current Account deficit
- ⑤ lowers amount of innovation and Research and development (Ashok Debbari committee :- 30-40 Million home storage lacking)

CONSEQUENCES ON ENVIRONMENT

- ① 'Virtual water export' (eg Rice intake)
- ② Soil quality due to overuse of fertilizer eg should be 4:2:1 but in Punjab 28:4:1
- ③ famine burden - comparative water index - 31-1 of areas depleted due to over irrigation
- ④ Demand for pesticides :- 0.1% of use efficiency (bioaccumulation)
- ⑤ genetically modified crops :- Invasive transgene

We need MSF rationalization, inclusion of more crops for diversification, technological optimization for growth, public private partnership for investment to reduce our reliance on MSF [Attending PM AHAHA]

Feedback

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

Q.5) How can quantum technologies optimize production processes and improve efficiency in the manufacturing sector?
(10 marks, 150 words)

कॉटम प्रौद्योगिकियां उत्पादन प्रक्रियाओं को कैसे अनुकूलित कर सकती हैं और विनिर्माण क्षेत्र में दक्षता में सुधार कर सकती हैं?
(10 अंक, 150 शब्द)

Quantum process with its unique abilities of Quantum confinement, Quantum superposition and Quantum entanglement has emerged as 'sunrise technology' in field of science.

OPTIMIZE PRODUCTION → MANUFACTURING SECTOR

- ① Reducing wastage - Quantum approximation
- ② Efficient communication: Quantum based encryption of faster delivery of messages
- ③ Modelling: utilizing Quantum technology with 3D printing for viable model
- ④ Automation of semi Automated process
- ⑤ Designing of final products: Quantum confinement for Accuracy

OPTIMIZING → EFFICIENCY IN MANUFACTURING SECTOR

- ① Reduce the power usage (e.g. Quantum LEDs better than LED)
- ② Enhance quality: Quantum based research for new materials
- ③ Enhance Relapse timing: Quantum precision techniques
- ④ Enhance delivery times: Fast messaging through Quantum entanglement

Issues

- ① Nascent stage of technology
- ② Unstable nature of technology - requires low temperature
- ③ Capital intensive nature of technology

Way forward

- ① PPP based pilot demonstration
- ② Working on Quantum encryption, Quantum efficiency through National Quantum computer programme

Quantum technology opens up new avenues for production improvement and manufacturing life.

Feedback

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

Q.6) Biofuels can play a role in energy security by reducing India's reliance on imported fossil fuels and diversifying its energy mix. Examine. (10 marks, 150 words)

जैव ईंधन भारत की आयातित जीवाश्म ईंधन पर निर्भरता को कम करके और इसके ऊर्जा मिश्रण में विविधता लाकर ऊर्जा सुरक्षा में भूमिका निभा सकता है। परीक्षण करें। (10 अंक, 150 शब्द)

National Biofuel mission which requires India to increase our production and mixing 25% of petrol and bio-diesel to 5% by 2025 (by 2030) shows importance of Biofuels.

IMPORTANCE IN REDUCED RELIANCE ON IMPORTED FUELS

- ① Increased production leads to energy security
- ② Reduced demand of petrol / diesel due to blending targets
- ③ Reduced leverage of OPEC countries bargain
- ④ Movement for Alternative MOUs and hedging for buying time.

DIVERSIFYING ENERGY MIX

- ① Utilizing extra production - involving surplus, poor quality rotten crops.
- ② helps in SPU transition for transfer to energy secure country.
- ③ Goal along with biofuel another diversified

option
④ Decarbonisation.
Issues

- ① Food security $\Rightarrow$ sugarcane utilized increasing prices
- ② Reduced vehicle efficiency by biofuel
- ③ Capital intensive shift defining industries

Government

- ① PM JIVAN
- ② Bio-fuel diversification programme under Green India
- ③ Global Biofuel Alliance at

India need to work on bio-fuel engineered fourth stage of biofuel to maintain sustainability

Feedback

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#	G	A
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CD & VA		
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P & R		

Please put tick marks in the above table.

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

TOTAL MARKS	
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Q.7) Alongside the alarming depletion, rising pollution levels of groundwater resources are exacerbating the water crisis in India. In light of the statement, bring out the reasons for groundwater pollution in the country. Suggest remedial measures and mention the initiatives taken by the government in this regard.

(10 marks, 150 words)

भूजल संसाधनों में अत्यधिक कमी के साथ-साथ प्रदूषण का बढ़ता स्तर भारत में जल संकट को और बढ़ा रहा है। इस कथन के आलोक में, देश में भूजल प्रदूषण के कारणों को उजागर करें। उपचारात्मक उपाय सुझाएँ और इस संबंध में सरकार द्वारा की गई पहलों का उल्लेख करें।

(10 अंक, 150 शब्द)

Composite Water Report of Central water commission highlights that 31% of areas in India are facing severe depletion.

Reasons

- (1) Irrigation - largest groundwater extracted
- (2) No seepage - non-permeable infra
- (3) Encroachment - Bangalore use of encroachment of wetlands
- (4) Rising of pollutants Jharkhand uranium poisoning
- (5) Changing monsoon patterns - El Niño

- ① Inefficient Agriculture → Rice - Virtual water export
- ② Wrong place selection → Pure semiconductor electricity

- ③ Waste management → water only 25-1% recycled

Remedial measures

- ① Integrated watershed development

- ② Protection of Rivers

- ③ Sustainable sponge cities

- ① Tal recovery mission

- ② PM Kishu Sishu Yojana

- ③ Namami Ganga programme

- ④ River conservation project

Water crisis can lead India to 'water deficit' must safeguard.

Feedback

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#	(C)	(A)
AWIS		
CD & VA		
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P & R		
Please put tick marks in the above table. Here G is Good, A Average and P is Poor.		
TOTAL MARKS		

Q.8) What are marine heat waves? Throw light on its impact on marine ecosystem and coastal communities.
(10 marks, 150 words)

समुद्री उष्ण तरंगें क्या हैं? समुद्री पारिस्थितिकी तंत्र और तटीय समुदायों पर इसके प्रभाव पर प्रकाश डालें।

(10 अंक, 150 शब्द)

Marine heatwaves are increased temperature, leading to long term consequences for ecosystem

Impact on ecosystem

- ① Algal bloom = phytoplankton's death
- ② Coral bleaching
- ③ Carbonization and biodiversity loss
- ④ Reduced photosynthesis
- ⑤ Ocean warming
- ⑥ Hyperoxia = Sea level rise

On community

- ① Biodiversity hampered

- ② livelihood
- ③ Income reduced
- ④ health and living
- ⑤ Sanitation

Next step

- ① prime healthcare programme
- ② Com

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 Average and P is Poor.		
TOTAL MARKS		

Q.9) Elaborate on the need for a clearly articulated National Security Strategy for systematic, consistent and coherent approach towards national security. (10 marks, 150 words)

राष्ट्रीय सुरक्षा के प्रति व्यवस्थित, सुसंगत और अनुकूल दृष्टिकोण के लिए स्पष्ट रूप से व्यक्त राष्ट्रीय सुरक्षा रणनीति की आवश्यकता पर विस्तार से प्रकाश डालिए। (10 अंक, 150 शब्द)

Shaktikar Committee and Moolhokar Gupta Committee has for long advocated for clearly articulated National Security Strategy

Importance

Systemic

- ① Clear chain of command
- ② Distribution of resources in equity based manner
- ③ Institutionalization of policies

Consistent

- ④ Non-Adhoc decision making
- ⑤ Continuity in decisions and not leadership based decisions.

Cohesive Approach

- ① A well organised response
- ② Creation of deterrence and predictability for ensured deterrence
- ③ Comprehensive All powers (Army, Navy, Airforce Approach)

Issues

- ① conservatism in different sections of forces
- ② Inequality in resource distribution (eg. Army holds more)
- ③ Intelligence sharing and collaborated information

We need a National security strategy

of

A	≡	Systemic
M	≡	Manoeuvrable
A	≡	Adaptable
R	≡	Resilient
T	≡	Transform

doctrine

Feedback

(For OFFICE use on)

#	G	A	P
A/WIS			
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.10) India's precarious location on the drug map makes it extremely vulnerable to drug trafficking. Illustrate. How does drug trafficking affect India's internal security? (10 marks, 150 words)

नशीले पदार्थों के मानचित्र पर भारत की अनिश्चित स्थिति इसे नशीले पदार्थों की तस्करी के लिए अत्यंत संवेदनशील बनाती है। उदाहरण देकर समझाइए। नशीले पदार्थों की तस्करी भारत की आंतरिक सुरक्षा को कैसे प्रभावित करती है?

(10 अंक, 150 शब्द)

Indian geography with all its benefits has also encapsulated us in 'drug dilemma of century'. Recent 800 crore consignment in Gujarat caught some how menace is increasing Geographical

① Between;

Golden Crescent = Iran, Pakistan and Afghanistan

Golden Triangle = Laos, Cambodia, Vietnam



② Trans border = Bangladesh, Pakistan, Myanmar

③ Increasing menace in off shore (Mn. of Home affairs report) = 40% of world drugs goes through Indian Ocean

④ Taliban capture of Afghanistan = largest drug producer

⑤ Organized crime = money laundering

⑥ Technology = Banned in Kashmir to supply

EFFECT ON INTERNAL SECURITY

- ① Financing terrorist attacks. (FATF holds direct connection)
- ② Organized crimes - Rampant parallel (e.g. Fake currency) economy where
- ③ Social capital - Youth addicts and loss of lives
- ④ Corruption in agencies - weakening borders
- ⑤ A surviving source of securitists (e.g. NIA-K utilizing drugs as funding source)
- ⑥ Red corner - Drug trafficking rampant increase
- ⑦ A foreign policy tool of Nation like Afghanistan - earning foreign schemes

① Nasha Mukta Bharat Abhiyan by 2047.

② Operation Sunshine - destroying Myanmar havens

③ Drug Rehabilitation Scheme
Drugs not only takes lives but harm the very soul of Nation

Way forward
① combined Maritime and land boundary working group

② Rehabilitation of Addicts

- Nirupama Ray

Feedback

(For OFFICE use only)

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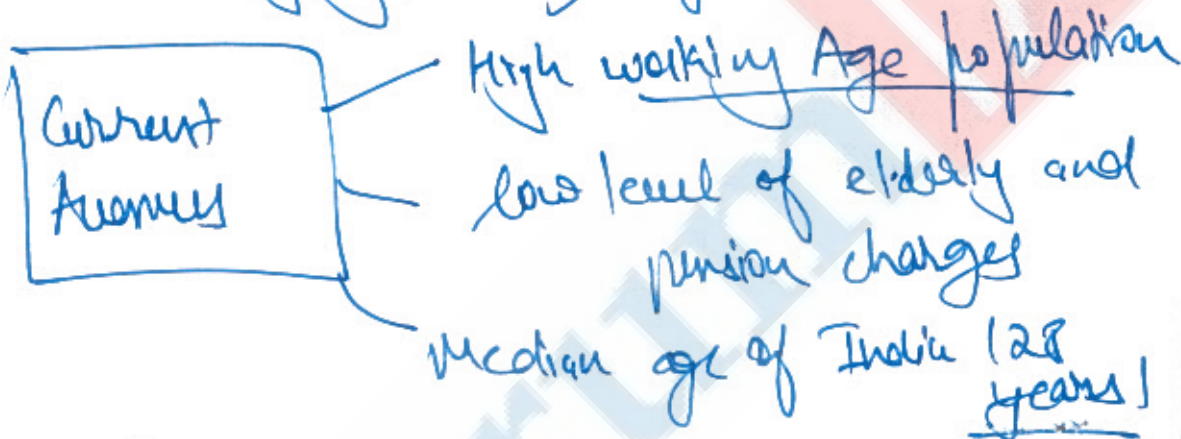
Here G is Good, A is Average and P is Poor.

TOTAL MARKS

Q.11) The much-cherished demographic dividend of India can be leveraged only if the twin challenges of unemployment and unemployability are addressed holistically. Analyse. (15 marks, 250 words)

भारत के बहु-प्रशंसित जनसांख्यिकीय लाभांश का लाभ तभी उठाया जा सकता है जब बेरोजगारी और अनियोज्यता की दोहरी चुनौतियों का समग्र रूप से समाधान किया जाए। विश्लेषण करें। (15 अंक, 250 शब्द)

India's demographic dividend stands currently at 67%. Simultaneous World Bank has highlighted for demographic transition towards ageing to begin from 2035.



But, important imperative becomes to solve twin challenges

UNEMPLOYMENT → Reasons

- ① Disguised unemployment in Agriculture having ~43% of population and only 18% of GDP
- ② Premature deindustrialization :- Industry sector only 25% of GDP and contributing 40% of employment

- ③ Overall unemployment : ~~Not so~~ Periodic labour force survey opined for 3.2% of unemployment.
- ④ Youth unemployed causing distress : CMIE data : nearly 48% youth in unemployed.
- ⑤ Emergence of new model : 'Service sector led growth' : 52% of GDP but only 28% employment.

EMPLOYABILITY → REASONS

- ① Low level of skills (India skill report - only 51% as skilled compared to 96% of South Korea)
- ② Industry-Academia linkage missing : only 48% of graduates are employable
- ③ Structural unemployment : Artificial intelligence to take 2.5 million jobs by 2030, BANK of America report.

④ Domain knowledge: Min. of Home affairs recently allowed banned electronic engineers from China

⑤ Lack of training, investment Skill India programme only 1.4 crore ÷ target was of 40 crore

Way Ahead for movement

① Invest in industries like textile Industries

② utilize technology ÷ AIEEEM portal

③ encourage start up ÷ start up India stand up India scheme

④ skilling, retraining ÷ PM Kaushal Vikas Yojana

⑤ 'Apprenticeship' ÷ National Apprenticeship programme 2.0

⑥ International collab ÷ Japan move shift from China to India

India's working age population provides a window. It depends on our steps of turning to demographic dividend a disaster.

Strengths

① Labour intensive industries

② Assembly infrastructure

③ 'low tech domain'

Feedback

(For OFFICE use only)

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TOTAL MARKS	
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Q.12) Despite government efforts at 'Make in India', what are the key impediments in making in India? Suggest measures to encourage domestic manufacturing. (15 marks, 250 words)

'मेक इन इंडिया' के सरकारी प्रयासों के बावजूद, मेक इन इंडिया में मुख्य बाधाएँ क्या हैं? घरेलू विनिर्माण को प्रोत्साहित करने के उपाय सुझाएँ। (15 अंक, 250 शब्द)

'Make in India' programme was one of the biggest platform of 16th Lok Sabha to make India a manufacturing hub of the world.

Primary motives

- ① Intelligent manufacturing
- ② Import substitution
- ③ Making us an export hub

Government efforts

- ① Investments - Budget 2023-24: 33% increase
- ② Improvement in innovation - Atal tinkering labs
- ③ Emphasis on manufacturing - National manufacturing policy 2017
- ④ Strategic disinvestment - to improve private equity investments

- ⑤ International collaboration :- India-Japan Australia supply chain initiative
- ⑥ COVID effects :- Aatmanirbhar Bharat Abhiyan
- ⑦ Infrastructure supply to industry :- eg National infrastructure pipeline of 111 crore
- ⑧ Reduced corporate tax :- 23%
- ⑨ Tax incentives :- Production Linked Incentive scheme / survive sectoral subsidy

KEY IMEDIMENTS

- ① Lower level of skill :- only 49% of employable
- ② Intellectual property dependency
- ③ Low investment in research and development Only 0.67% of GDP
- ④ Competition :- Vietnam :- Textile
Philippines :- electronics
China :- and larger economy

- ⑤ Logistical challenges ÷ Ministry of commerce report 13% - 14% losses.
- ⑥ Export limitations for our goods (eg. Carbon border Adjustment tax of Europe, phytochemicals)
- ⑦ Input dependence (eg 70-1% of Active pharmaceutical ingredients from China)
- ⑧ Huge capital investment ÷ for technology shift
- ⑨ Structural issues ÷ forex and GDP growth from service sector

Key focuses

- ① South Korea case study ÷ Chaebol government supported industry ÷ now becoming L1, Ericsson etc.
- ② Emphasis on MSME production ÷ 30% of GDP. [human - multinational company model]
- ③ International treaties ÷ eg. CPTA with UAE for export. (Brahma to Philippines)

India's dream of 'Atmanirbhar' depends on overall equity development of Visiit Bhoot 2047

Feedback (For OFFICE use on)

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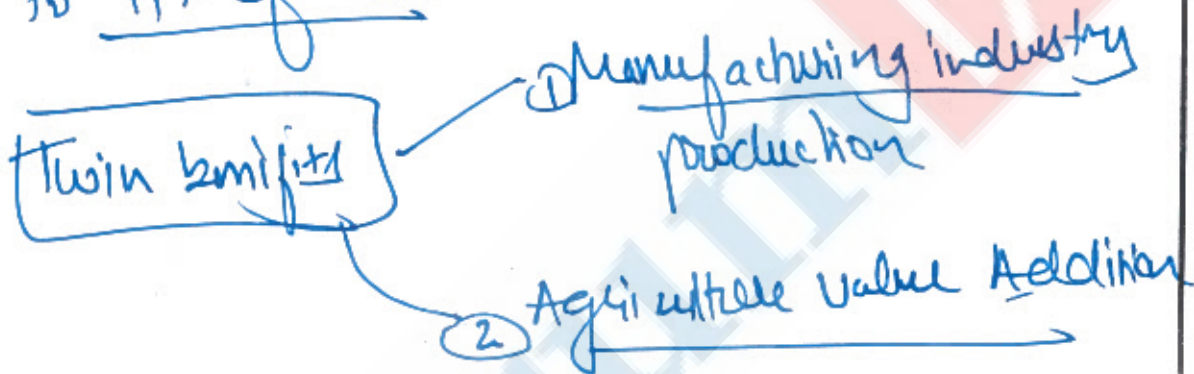
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Q.13) India is one of the largest producers of food, yet Food Processing Industry (FPI) is not well developed in the country. Examine the inhibiting factors and recommend some remedial actions to promote FPIs. (15 marks, 250 words)

भारत खाद्यान्नों के सबसे बड़े उत्पादकों में से एक है, फिर भी देश में खाद्य प्रसंस्करण उद्योग (एफपीआई) का पर्याप्त विकास नहीं हुआ है। अवरोधक कारकों की जांच करें और एफपीआई को बढ़ावा देने के लिए कुछ उपचारात्मक कार्रवाइयों की सिफारिश करें। (15 अंक, 250 शब्द)

Food processing industry showcase
sunrise sector emerging and contributing
to 11% of GDP.



India's growth model of 315 Million tonnes of food and only 140 Million tonnes of storage makes Food processing an urgency

NOT WELL DEVELOPED

① Infrastructural challenges: 13-14% logistic cost

② Lower level of food processing / for fruits only 2% of produced

- ③ Certification of outputs (eg FSSAI, Min of Agriculture etc - multiple agencies)
- ④ Lower level of Research and development
- ⑤ Emphasis on one and lower diversification
(~30% employed in milk sector)
- ⑥ Lower infra of cold storage leads to raw material loss
- ⑦ Lower level of connection with farmers
- ⑧ Informalization of food processing sector
(~75% working informally)
- ⑨ Lower international supply collaborations
- ⑩ Poor quality of products = European market rejection on name of phyto sanitary norms

Things being done

- ① National food manufacturing policy
- ② Production linked incentive scheme for FPI
- ③ 100% of FDI through Automatic route
- ④ Modification of cold chain infra project
- ⑤ PM food parks projects along with multimodal connectivity
- ⑥ e-NAM like technology for procurement
- ⑦ 'Sunrise Sector' status given

Way forward

- ① Upward and downward linkages
- ② International knowledge collabs with Thailand for good practices
- ③ Cooperative farming for contract-quality goods
- ④ Certification like National Programme of Organic Products (NPOP)
Food processing can help us to encourage farmer security and increase investment in infrastructure

Feedback

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Q.14) Adoption of millets can provide unique solutions to the problems of nutritional deficiency, ecological degradation, and receding farm incomes; however, the realization of its complete potential is hindered by a slew of factors. Analyse. (15 marks, 250 words)

मोटे अनाज को अपनाने से पोषण की कमी, पारिस्थितिकी क्षरण और घटती कृषि आय जैसी समस्याओं का अनूठा समाधान मिल सकता है; हालाँकि, इसकी पूरी क्षमता की प्राप्ति कई कारकों से बाधित है। विश्लेषण करें (15 अंक, 250 शब्द)

International year of Millets 2023 and National year of Millets 2017 has brought back the important focus on millets which were once considered as orphan crops.

Importance of Millets

- Nutritional deficiency**
- ① High level of fibre
 - ② Improvement of micronutrients like folic acid, B12 etc
 - ③ Low glycemic index $\Rightarrow$ reduces obesity problem
 - ④ Diversifies from carbohydrate oriented diet to 'Balanced diet'

Ecological degradation

- ① Climate resilient $\Rightarrow$ requires less water than rice so global water export reduced

- ② enhancing the quality of soil.
- ③ 'crop diversification' replenishes the bulden of soil.
- ④ More suited to indian subcontinent - fertiliser use decreased, no bioaccumulation
- ⑤ Carbon emissions > GDP target

Receding farmer income

- ① Fodder material used
- ② Reduced dependence on wheat, cereals

Case study

Millet

sister

Network

→ increased income 4 times

- ③ Less capital intensive inputs (e.g. water)
- ④ An important part of diet in older times.

HINDRANCES & IN REALISATION

- ① Lower amount of investments
- ② Social factor - 'poor man's crop'
- ③ Government policy - 'in favour of MSP which is wheat, Rice subsidies'

- ④ Soil quality and conducive
- ⑤ Export market generation
- ⑥ Lack of Access of technology i.e.
no genetically modified millet
- ⑦ Detached from 'food processing sector'
- ⑧ Other revolutions:- No green revolution for
Millet
- ⑨ Market orientation:- poor taste, no commodification

Government Steps

- ① National millet year 2017
- ② PM 'Shree Anna' - Budget 2023
- ③ Millet promotion programme
- ④ A segment in 'Climate Resilient ~~infrastructure~~ Agriculture'

Way forward

- ① Intl. markets
- ② Local demand gen.
- ③ link with food processing sector

India generates 20% of world millet. It provides us avenue of becoming world leader in 'millet production'

Feedback

(For OFFICE use on)

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Q.15) Describe how the Gaganyaan mission can help achieve India's broader national objectives. Also, throw light on the key challenges that the mission faces. (15 marks, 250 words)

वर्णन कीजिए कि गगनयान मिशन भारत के व्यापक राष्ट्रीय उद्देश्यों को प्राप्त करने में किस प्रकार सहायक हो सकता है। साथ ही, मिशन के समक्ष आने वाली प्रमुख चुनौतियों पर भी प्रकाश डालिए। (15 अंक, 250 शब्द)

Recent 4 astronauts who are also our renowned Army officers going for training has made us to move forward one step more in ISRO's dream of 'Mission Gaganyaan'.

Important milestone → Human lower earth orbit spaceflight

ACHIEVE BROADER NATIONAL OBJECTIVE

- ① Becoming a space economy part [currently only 2% of ISRO's market]
- ② Showcasing Ability along side with large international players in space demonstration.

- ③ Leveraging assets of ISRO as launch capital of world (eg 22 billion dollar economy involved)
- ④ Avenues for space tourism = An economy model
- ⑤ Better marketing strategy - ANTRIX, NAIL
- ⑥ Startup ecosystem boom in space sector (eg Agnikul cosmo, DRDA coming)
- ⑦ Utilizing collaboration with NASA, JAXA for future exploration (eg Mission NISAR of India-USA)
- ⑧ Becoming a key global player in space geopolitics
- ⑨ Safeguarding us from 'space warfare' - str generation warfare
- ⑩ Engaging test of our technology like

DART, in lower space orbit

CHALLENGES

- ① Lower involvement of private sector
[nearly 70% public sector involvement]
- ② ISRO a big player in launching itself,
less space for others
- ③ Limited launchpad sites :- over burdened
Sriharikota site
- ④ Limited testing :- PMD-03 limited tests
- ⑤ Dependence of other countries for training
e.g. USA, Russia.
- ⑥ Behind other developed country in space

Race done

① National Space policy
2023

② ISIL + ANTRIX

③ Atmanirbhar Akash

space as the dimension emerges for growth
in India's status and capability

Way forward

① Outsourcing launches,
focus on ISRO for
R&D.

② Private sector

③ Economics of scale

Feedback

(For OFFICE use only)

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Q.16) Green Hydrogen is necessary for the country to modernize without carbonizing; however, its adoption is beset with several challenges. Discuss. (15 marks, 250 words)

देश को कार्बनीकरण के बिना आधुनिक बनाने के लिए ग्रीन हाइड्रोजन आवश्यक है; हालाँकि, इसे अपनाना कई चुनौतियों से घिरा हुआ है। चर्चा करें। (15 अंक, 250 शब्द)

Recent launch of Green Hydrogen mission empowers our energy security vision based on diversification.

Green Hydrogen :- Utilizing Renewable energy for manufacturing of hydrogen as a energy source

NECESSARY → MODERNIZE WITHOUT CARBONIZATION

- ① Large carrier capacity of hydrogen
- ② Green nature :- Shift from coal based economy to greener economy
- ③ Aligns with our goals in SDG targets given in Paris.
- ④ Important Avancee as input for industrialization.

- ⑤ Safeguarding exports:- from taxes like Carbon border Management tax.
- ⑥ Reduces subsidy burden on government.
- ⑦ Make us part of 'gas based economy' which is emerging worldwide.
- ⑧ Reduces our global warming potential - from which we may loose in future
- ⑨ Reduces current Account deficit as we are large importa of Antarctica coal.
- ⑩ Enhance employment opportunities from Australia

CHALLENGES

- ① Huge capital investments for initial shift
- ② Explosive nature of Hydrogen difficult to contain
- ③ Seeking markets:- Nascent stage of technology

- ⑤ Energy intensity limited in initial phase
- ⑥ Infrastructure upgradation cost for shift
- ⑦ Government lead and not industry lead
- ⑧ Pressure of "inflationary pressure" of new technology on people
- ⑨ 'Hydrogen economy' : universal from optimum diplomacy

Main targets

- ① 5 billion tonne production
- ② Reduction of greenhouse emissions
- ③ 40 lakh employment

Way forward

- ① Interest subvention
- ② Pilot mode introduction
- ③ Exchange to reduce price

Green hydrogen mission serves as energy secure and environment friendly India

Feedback

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TOTAL MARKS			

Q.17) Biotechnology, by integrating biological sciences with technological innovations, offers comprehensive solutions to some of the most pressing challenges in food production, waste management and human health. Elucidate. (15 marks, 250 words)

जैव प्रौद्योगिकी, जैविक विज्ञान को तकनीकी नवाचारों के साथ एकीकृत करके, खाद्य उत्पादन, अपशिष्ट प्रबंधन और मानव स्वास्थ्य में सबसे अधिक दबाव वाली चुनौतियों में से कुछ के लिए व्यापक समाधान प्रदान करती है। स्पष्ट करें। (15 अंक, 250 शब्द)

Biotechnology highlights a beautiful combination of biological sciences along with industrial mechanisms. It solves dictum of 'biological food production'

Importance

Food production

- ① Increased food production (eg. GM Mustard)
- ② Safeguarding from pests (eg. GM Cotton)
- ③ tackling hidden hunger (Golden Rice - Vitamin A)
- ④ engineered microbes for enhanced soil fertility

- (5) Important in permaculture, Zero Budget natural farming
- (7) secure quality (e.g. Neem coated Urea)

Waste management

- (1) Stubble management (Pusa Bio decomposer)
- (2) Vermi composting
- (3) Containing oil spills as seen in case of oil spill technology.
- (4) 'waste eating bacteria': pathogenesis of waste
- (5) Bio-remediation with Biologically engineered bacteria
- (6) Increasing rate of decomposition : e.g. m-fungi fungi

Human health

- (1) Safeguarding from diseases

- ② Filling nutrition security gaps
- ③ Micronutrient supply
- ④ Bio-medicines just copying the mechanism of Angel genes
- ⑤ Preventive healthcare :- Health bacteria generation
- ⑥ Sanitization :- Water security key engineered bacteria

CHALLENGES

- ① Lower amount of 'supply chain linkages'
- ② 'Anti-microbial resistance' fear
- ③ Slow level of technology upgrade

Way forward { A dedicated task force under Dept. of Biotechnology
 Level holding venture for research
 market development

Biotechnology emphasize on involvement of development with nature i.e our goal of ADG

Feedback

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TOTAL MARKS	
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Q.18) Explain the causes and impacts of landslides. Also, discuss the various measures to mitigate their impact, with a special emphasis on National Disaster Management Authority (NDMA) guidelines. (15 marks, 250 words)

भूस्खलन के कारणों और प्रभावों की व्याख्या करें। इसके अलावा, राष्ट्रीय आपदा प्रबंधन प्राधिकरण (एनडीएमए) के दिशा-निर्देशों पर विशेष जोर देते हुए, उनके प्रभाव को कम करने के विभिन्न उपायों पर चर्चा करें। (15 अंक, 250 शब्द)

According to National Disaster Management Authority 12% of Indian continent is prone to landslides

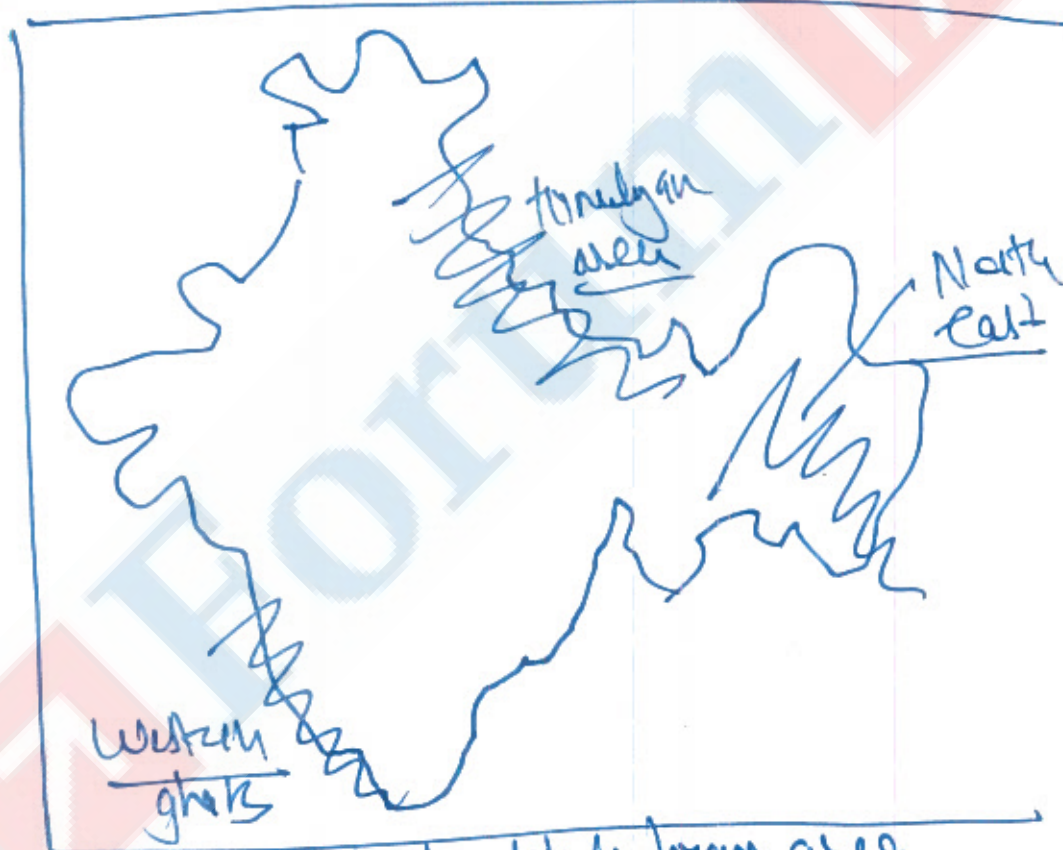


Fig: Landslide prone area

Cause of Landslide

① Huge level of Rainfall (eg Western ghats)

- ② Nature of Rocks (e.g. Sedimentary rocks of Himalayas)
- ③ Erosion ÷ water or wind ÷ Meghalaya
landslide due to North Eastern
Shouren
- ④ Temperature and pressure extreme change
- ⑤ Evoked by other disasters ÷ e.g.
Earthquake, Volcano
(e.g. Himalaya
landslide)
- ⑥ Anthropogenic reasons
- Mining unsustainable, high hazard
urban development (e.g. Jashimath
landslide)

Impacts

- ① Infrastructural loss ÷ Uttarakhand
Tehri landslide
- ② Human life loss ÷ Wayanad
landslide
- ③ Loss of linkage with communication
with outer world

④ Ecological and biodiversity loss in that particular area

⑤ Blockage to communication & logistic movements

NDMA Guidelines on Landslide

Prevention → Sustainable urbanisation
 ② No mining project of large
 ③ Scale on Ecologically Sensitive Zone

MITIGATION → ① Communication channels
 ② Construction for supplying relief material

Rehabilitation → ① Alternative Areas (as in case of Jashimath)
Retrofitting and early warning system creation

Landslide as declared a National disaster needs cumulative efforts to curb the disaster

Feedback

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Q.19) As threats to maritime security evolve, India faces multifaceted challenges that necessitate a comprehensive and proactive approach to safeguard its strategic interests. In light of the statement, throw light on the key maritime security challenges in India. Also, highlight the measures taken by the government to strengthen maritime security in the country. (15 marks, 250 words)

समुद्री सुरक्षा के लिए खतरे बढ़ने के साथ ही भारत को बहुआयामी चुनौतियों का सामना करना पड़ रहा है, जिसके लिए अपने रणनीतिक हितों की रक्षा के लिए एक व्यापक और सक्रिय दृष्टिकोण की आवश्यकता है। बयान के आलोक में, भारत में प्रमुख समुद्री सुरक्षा चुनौतियों पर प्रकाश डालें। साथ ही, देश में समुद्री सुरक्षा को मजबूत करने के लिए सरकार द्वारा उठाए गए उपायों पर प्रकाश डालें। (15 अंक, 250 शब्द)

Maritime security highlights the need of comprehensive actions to secure our nearly 7500 km shoreline from both internal and external threats

Key Maritime Security CHALLENGES

- ① Terrorism emerging - 2008 Mumbai attacks came from sea route
- ② Drug trafficking - Min. of home affairs 40% of drugs market passes through Indian Ocean
- ③ Piracy emerging from countries like Somalia of Africa

- ④ China's efforts - like String of pearls
'Reent spy ship'
- ⑤ Safeguarding our maritime sea route
choke points [70% of trade of India
from ocean]
- ⑥ Livelihood and life of Fishermen
(eg Sri Lankan Army hunting Tamil
Nadu fisherman)
- ⑦ Radicalisation, importance of security
- ⑧ Important role of India as 'net
security provider' in Indian ocean
- ⑨ Combined international efforts ÷ e.g.
avoiding 'weaponisation of supply chain'
- ⑩ Reducing waste dumping in our
local shores.

MEASURES TAKEN BY INDIA

- ① Indian coast guard modernisation scheme
 - ② Blue economy model
 - ③ PM-Matsya Sampada Yojana
 - ④ Operation Sankalp to safeguard our interest from piracy
 - ⑤ Important infrastructure in Chabahar, Trincomalee port
 - ⑥ International coordination - QUAD, MILEX exercise, Colombo Security Conclave
 - ⑦ Smart Fishermen initiative - patrolling along with coordination technology with mobile
- Way forward - Comprehensive Maritime security strategy
- Cooperation of all line - State + Centre for creating Maritime security, focus importance of Atal Bihari Vajpayee
- T. Mohan said - 'Oceans form base of Rising powers'

Feedback

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Q.20) Bring out the challenges posed by 'hybrid warfare' to the national security and suggest comprehensive counter-measures. (15 marks, 250 words)

'हाइब्रिड युद्ध' से राष्ट्रीय सुरक्षा के सामने उत्पन्न होने वाली चुनौतियों को स्पष्ट करें और उनके समाधान के लिए व्यापक प्रतिरोध उपायों का सुझाव दें। (15 अंक, 250 शब्द)

Hybrid warfare signifies combination of traditional warfare techniques along with modern technologies, new avenue of fights which created new challenges for countries.

(CHALLENGES TO SECURITY)

- ① Sovereignty challenges :- e.g. - terrorist using drones to supply weapons in Kashmir
- ② Human security :- Involvement of 'data theft', 'deep fakes' to enlarge detour
- ③ Cyber attack :- Operation Pando - A group of China attacked Mumbai infra

- ④ New 'weaponisation' — MNCs in 'whole of state' approach play this role
- ⑤ Space becoming a new arena.
- ⑥ 'Greyzone warfare' — bridging but not escalating the into full time conventional war.
- ⑤ Revanchism and Cartographic warfare (China including bhutan into boundary talks)
- ⑥ Biological weapons and chemical weapons inclusion
- ② Use of Non State actors as tool in warfare (e.g. Al Qaeda for Pakistan)
- ⑤ Utilization of methodology : Social media, ISIS ~~telegram~~ telegram pages for recruitment.

Comprehensive measures

- ① Drafting a ^{comprehensive} ~~analytical~~ strategy of combination of all forces as suggested by Shaktikant Committee
- ② Cyber proofing of our critical infrastructure
- ③ Return by Denial - DRDO working on Anti-drone system
- ④ Institutional approach - FATF against terrorism and UN-ILCs against sovereignty clash
- ⑤ Strengthening global common - Arms and signal for space
- ⑥ A comprehensive doctrine - Over ground warfare, low cost attacks & stoppage
- ⑦ Diplomatic balancing, Army level routine channels and security art infrastructure
hybrid warfare requires hybrid solutions
Indian organisations have to deal with it swiftly

Feedback

(For OFFICE use only)

#	G	A	P
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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