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TEST CODE 7 1 3 3 1 4

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

Time Allowed : Three Hours
समय : तीन घंटे

ForumIAS

Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	Vidhi		
Roll No./अनुक्रमांक	1910110484	Medium/माध्यम	English ☒ हिंदी ☐
Center Code/परीक्षा केंद्र		Date/दिनांक	6/09/24

*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।	
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Total/कुल अंक	250			
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 ☒
*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।			For Office Use Only / केवल कार्यालय प्रयोग हेतु	
			ECN CODE/ ईसीएन कोड :	Evaluation Date/ मूल्यांकन तिथि :
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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

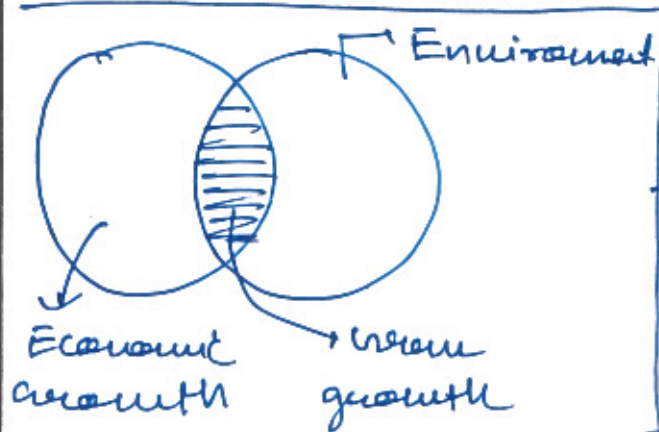
CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

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)

Greengrowth can be defined as the economic growth that is balanced with environment sustainability



Components of green growth

→ Renewable Energy

→ Reducing greenhouse gas emission

→ Environment sustainability

Major Initiatives taken by the govt

1) National Action Plan for climate change.

8-sub missions

National Solar Mission (N784w)

National Sustainable Agriculture Mission

National Water Mission etc.

2) Renewable energy

- ↳ Solar Parks. eg Madhura, Gujarat
- ↳ Floating Solar Plant eg Rungtungan (Telangana)

3) Green Energy →

- ① National Hydrogen Mission
- ② Electric - Vehicles. eg FAME Scheme
- ③ National Mission for energy efficiency. eg PAT.

4) Carbon Market

- ↳ CCTS under CER for energy credit
- ↳ Sovereign Green Bonds by govt.
- ↳ Green Credit programme (COP-28)

5) Biodiversity & ecosystem

- ↳ Namami Gange Project } River
- ↳ River cities alliance. }
- ↳ MISHTI (Mangroves)
- ↳ AMRIT Dahanu (Westland)

Hence, multiple initiatives have been taken, Despite these, India is still among the 3rd largest Green house gases emitter.

Panchamrit Targets & SDGs

target can be achieved, when the 'Community based approach is taken'

Feedback

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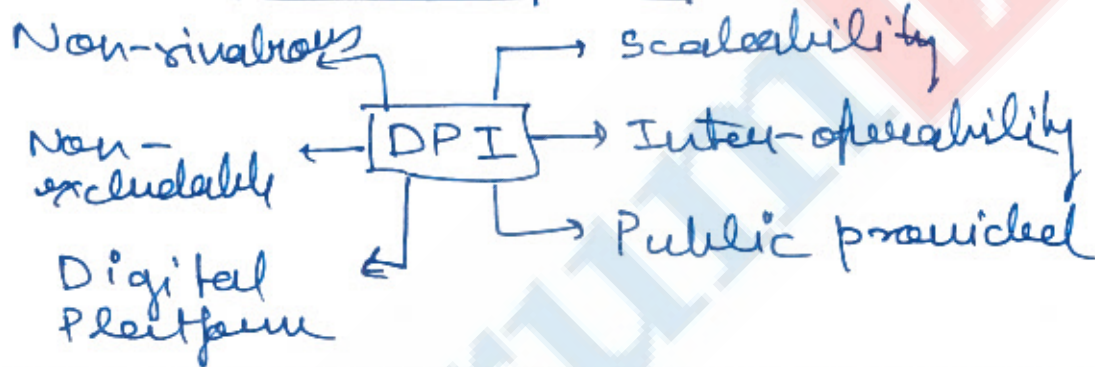
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TOTAL MARKS			

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)

DPI are the foundation digital framework provided by the government, on which further services can be developed.

Features of DPI



As Critical Enabler

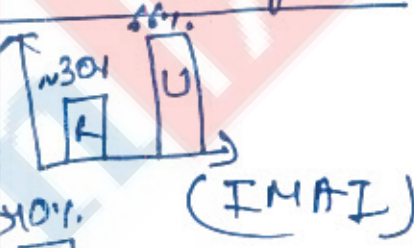
For Businesses

- ① Transactions ease → UPI, it is integrated with platforms like Amazon, Flipkart
- ② Digital land records → promotes easier land acquisition & Ease of doing Business.
- ③ Space-based data → Space economy, currently 02% of world.

For Citizens

- ① Ease of living → Digital locker, Swagat
- ② Market accessibility & wider choices → ONDC
- ③ For Farmers
↳ selling of products, → e-NAM.
↳ adequate remuneration

However, ~~these~~ DPIs has its own challenges

- ① Digital Divide,
• among rural Urban
• Male-Female.

- ② Digital Literacy
↳ ~38% is there (Oxjam).

- ③ Cyber-Security threats
According to NCRB increased by ~24% in 2022.
- ④ Data breach & Non-consensual use. → AIIMS attack.
- ⑤ Mass surveillance by government.
- ⑥ DPI can play the role of -
"wiping every trace from every eye"
and potential tool in our soft power. (CES-2019)

Feedback

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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)

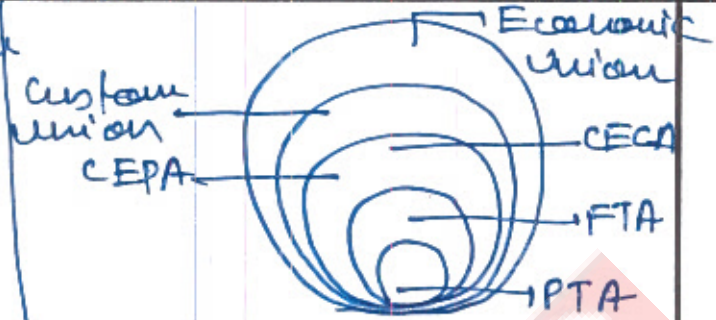
विभिन्न प्रकार के व्यापार समझौतों की व्याख्या करें? व्यापक आर्थिक भागीदारी समझौता (CEPA) मुक्त व्यापार समझौते (FTA) से किस प्रकार भिन्न है? (10 अंक, 150 शब्द)

Trade agreements are special arrangements made among countries to reduce barriers and enhance accessibility to trade. Recently India concluded ECTA.

Different types of Trade agreements

- ① Preferential trade Agreement :- It contains the list of tradeable commodities
- ② Free Trade agreement :- It may include sharing IPRs, investments, No import or export tariff.
- ③ CEPA / CECA :- It is wider includes labour mobility, investments, similar policies etc.
- ④ Custom Union :- No barriers among member countries & equal tariff to non-member.
- ⑤ Economic Union :- These member nations have co-ordinated monetary & fiscal policies, in addition to

Trade facilitation agreements



CEPA

FTA

Apart from free trade provision, it includes simplex process for investment, special position to partner countries join.

→ It contains the provisions for free movements of goods among countries

② It is wider, includes labour mobility, IPR regime.

③ comparatively narrower, focus mainly on goods & services.

③ It includes aligning of government policies.

③ It may not include

However, both emphasis on free movements of goods & services, promote investments & simplex procedures.

India trade Export is \$700 bn, and Foreign Trade policy target of \$2 billion can be reached with FTA & CECA

Feedback

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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)

MSP, is the minimum support price provided as a shock absorber to farmers & to ensure adequate remunerability to Farmer.

Provided on 23 crops by CECA based on A2+FL formula

Unintended Consequences.

① Skewed production

eg. ~220mT out of 330mT is wheat & Rice

② Non-scientific agriculture production

eg. Growing rice in arid region of Punjab

③ Excessive Use of fertilizer =>

- Agriculture run-off
- Soil Alkalinity

eg. 4:2:1 Flamenco 7.2:2.1:3
N:P:K
(Ideal) Current (ES23)

- ④ Due to small & Marginal farmers 85%, MSP benefits are skewed towards large farmers $\Rightarrow$ inequality.
- ⑤ Ideal of minimum price during shocks, it has become a price cycling.

Refers to Mitigate its consequences

- ① Ashok Dalwai Committee recommended
 ↳ Focus on High-value crops
 ↳ Horticulture, Fruit & Vegetable
- ② MSP - basket widening
 ↳ Including of Millets, Fruits.
- ③ Promotion of Precision farming
 for high productivity & minimise fertiliser use.
- ④ Connection with food processing industries ↳ PM-SAMPADA
- ⑤ Improvement of Marketing & Warehousing facilities ↳ e-NAM
- ⑥ National Farmers' SHC
 AS, MS Swaminathan Committee recommended
 (C2+FL) formula for MSP can be adopted,
 with widening of basket of goods & crops.

Feedback

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

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

Quantum technologies are emerging high end-technology, that uses the 'Quantum-state' of atomic-particles.

Significance for Production Process.

- It can help in developing high end products suitable for AI & ML.
- It promotes safer communication through QKD
- Quantum technologies can store adequate amount of information.
- It will enhance the predictability by simultaneously observing all outcomes.
- Due to its properties of Superposition

and entanglement, it provides connectivity of sub-atomic from useful is space & Chemical fields & optic networks.

Efficiency in manufacturing sector

- ① Enables informed decision making, through predictability
- ② It can find faults in the process, if the procedure is disturbed
- ③ It is based on secured transportation & communication, useful in 'Supply chain management'
- ④ It will ensure use of inputs precisely in the process.
- ⑤ It will help in finding imperfections in the product & make required revision.

India's 'National Quantum Mission', aim to catalyse upon technology, inter-institutional collaboration can enhance the

Feedback

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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)

India imports ~80% of its energy requirements; Bio-fuels are the fuels based on environmental products.

Role of Bio-fuels in energy security

- ① Can enhance the composition of domestic produced energy mix.
eg) Biogas
- ② It can ensure the circular economy.
eg) "Bio-char" can be used in thermal power plants
- ③ Agricultural products can be used for "ethanol production" & help in blending. E-20
- ④ Bio-Battery cells, organisms catalyse of chemical energy to produce.

electric energy.

- ⑤ It will help in minimising waste through →
 Used cooking oil ⇒ Bio-diesel
 by esterification
- ⑥ Integration of Bioelectrology
 & Bio-fuels to develop energy
 producing 'algae'

However, there are challenges -

- ① Imperial supply chain of
Bio-products
- ② Huge demand; and developmental
needs.
- ③ Lack of skilled labour & technology
to catalyse.

Measures like - ① National Bio-fuel
Mission

- ② Go Biodhan Scheme
- ③ Ethanol blending programs.

All these measures can help in achieving
 500 GW Renewable energy by 2030.
 (Panchamrit target).

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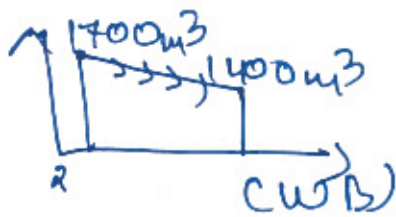
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Q.7) Alongside the alarming depletion, rising pollution levels of groundwater resources are exacerbating the water crisis in India. In light of the statement, bring out the reasons for groundwater pollution in the country. Suggest remedial measures 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)

Recently, a report of Ministry of Jal Shakti, marked ~70% of ground water is polluted, further exacerbating water crisis, as per capita availability is falling to breach threshold of World Bank.



Reasons for Groundwater Pollution

① Geogenic Measures

↳ Due to rocks containing heavy metals like Uranium, Fluoride

② Movement of volcanic lava with multiple harmful gases & minerals.

Anthropogenic → ① Rising agricultural run-off; excessive use of fertilizers.

- ② Salinity ingress near coastal areas
- ④ Excessive extraction, eg According to ISSC, water level reduced to > 300m in Bangalore
- ⑤ Landfills $\Rightarrow$ leaching of toxic substances into ground water
- ⑥ Soil erosion, due to excessive use of pesticides, herbicides

Measures to deal with groundwater pollution:-

- ① Enhancing green spaces as buffer zones
eg "Rain Gardens" in Australia
- ② sustainable and scientific agriculture
eg Soil Health based fertiliser use
- ③ Ban of extraction of groundwater in stressed areas like Delhi, Chennai, Bangalore
- ④ waste management:- Landfills must not be developed & safe-disposals are needed
- ⑤ Developing sea-walls to avoid salinity ingress

"National groundwater policy" with comprehensive approach can help achieve

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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 Heat waves are the increase in the temperature of the sea beyond the average normal temperature

IMPACT of Marine Heat Waves

Ecosystem

- ① Increase in temperature $\Rightarrow$ Coral Bleaching event
- $\Rightarrow$ Global Biodiversity outlook
~60% of coral reefs are threatened
- ② Food chain will be disturbed,
mortality of phytoplankton & fishes.
- ③ Migration of fishes to other areas $\rightarrow$ impairing ecological services.
- ④ Coastal biodiversity like Mangroves, wetlands will be impacted.

① India lost ~40% of mangroves in past decades.

② Higher sea-surface temperatures can cause artificial marine havens multiplier impact; including ice loss & habitat loss

Impact on coastal communities

① ~8% of Indian population dependent of fisheries ⇒ "loss of livelihood"

② Excessive sea surface temperature, may lead to "cyclones" hacking ⇒ infrastructure loss.

③ Impact the exporting potential of country. For India 3rd largest

④ It will impact "sea weed" farming ⇒ loss of income & marginalisation

Hence, marine heatwaves, needs a international community to achieve NDCs Target, we also need an Early warning mechanism to deal with the menace

Feedback

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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)

Kangil Review Committee, recommended the development of National security strategy, as a framework including methods, standards & procedures to be followed for ensuring security.

Need for NSS

- ① Changing nature of warfare.
 ① Hybrid-warfare,
 cyber warfare
- ② It will ensure timely & smooth decision Making
- ③ It will help in mobilisation of resources on time.
- ④ It will 'lay down' the path to slide by during crisis, enhances responsibility.
- ⑤ New fronts like cyber security, space warfare need clear guidelines to table

- ⑥ It will ensure collection division meeting among ^{defence} services → Army, Navy & Air Force
- ⑦ It will maintain the continuity of approach and minimise the scope of discretion
- ⑧ In line with objective of India as a "Net Security provider"
- ⑨ Even all big players like America, France have it.

However,

↳ Defense experts say -

- ① It reduces the flexibility of operation
 - ② It pre-clarify our stance, ~~task~~
 - ③ Failed to include, momentous challenges
 - ④ We already have a "Nuclear doctrine"
- Further, National Security can be enhanced by

- ① Modernisation of defence services
↳ Rafale, Hezbollah, Iran
 - ② Integrated Theatre command
 - ③ Cyber Security Doctrine - by CDS
- "In security we need both shakti & shanti to ensure peace"

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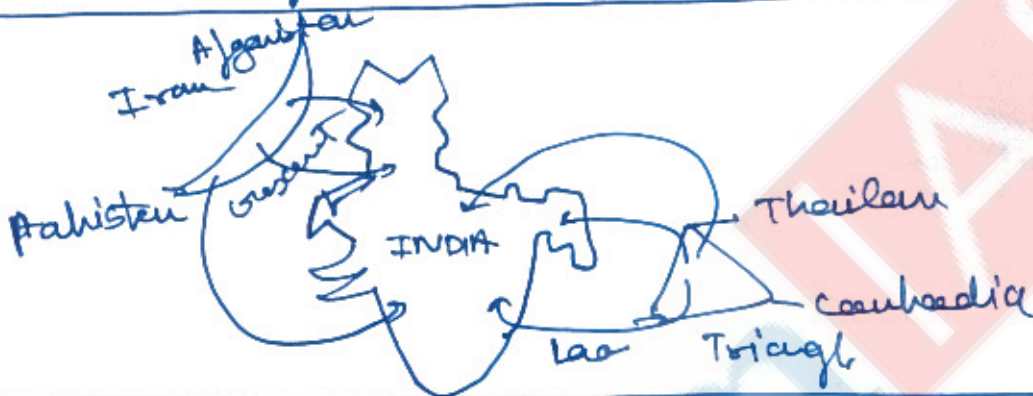
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Q.10) India's precarious location on the drug map makes it extremely vulnerable to drug trafficking. Illustrate. How does drug trafficking affect India's internal security? (10 marks, 150 words)

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)

"India is located on the arc of instability" - Rajiv Gandhi



According to UNODC, drug trafficking is an illegal sell, transport & production of non-approved drugs.

India Vulnerability

- ① Proximity to Golden Crescent and Triangle
- ② Porosity across borders eg Myanmar, Nepal
- ③ Ungoverned neighbour hood eg Myanmar Military
- ④ Huge Maritime boundaries
eg ~15000 sq km seized by Navy.

- (5) Raising demand at home due to poverty, unemployment etc.
- (6) Digitalisation $\Rightarrow$ Dark web $\Rightarrow$ ease of trade
- Impact on India
- Internal security

- (1) It will promote Narcoterrorism having security challenge
- (2) Financial $\rightarrow$ Money laundering network for 15-8% of global GDP lost
- (3) Parallel Economy
 $\hookrightarrow$ Loss of revenue to government.
- (4) Electoral rigging
 $\hookrightarrow$ Drug based politics
- (5) Social Impact $\rightarrow$ weaken demographic dividend (~62%).
 - $\hookrightarrow$ Health impact - eg AIDS, Anxiety, Depression
 - $\hookrightarrow$ Gender-based violence - eg 24.4 lakh cases (NCRB)

Remedy $\rightarrow$ Drug trafficking measures

Border Management	Financial Network	Legislation	Social Development
eg BOLD-GIT CBIMS	FIU-IND	PMLA, PMLA, PMLA KYC Norm	LPM-MVD LPM-AWS

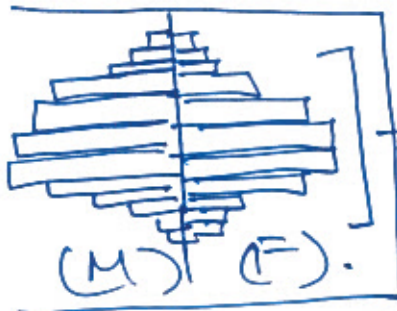
"To make India Nasha Mukht Bharat"

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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)

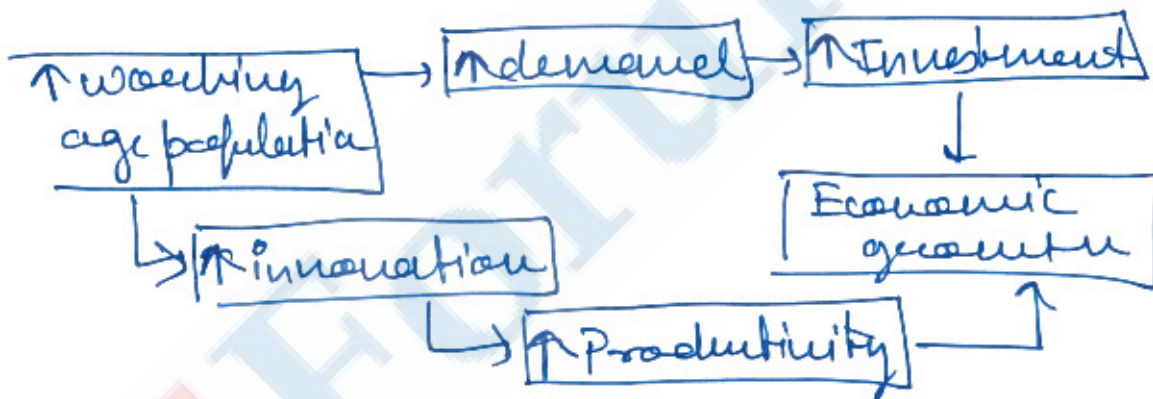
भारत के बहु-प्रशंसित जनसांख्यिकीय लाभांश का लाभ तभी उठाया जा सकता है जब बेरोजगारी और अनियोज्यता की दोहरी चुनौतियों का समग्र रूप से समाधान किया जाए। विश्लेषण करें। (15 अंक, 250 शब्द)

India's demographic dividend is expected to reach ~68% by 2030 (UN)



Demographic Dividend is economic growth generated by (15-59) years working age population ~68%.

Impact of demographic dividend



Reasons for unemployment & unemployability

- ① Service-led growth after 1991,
with low employment elasticity

- ② Stagnant growth, with annual growth rate $\approx (6-8)\%$. But employment generation is $< 1\%$.
- ③ 'Capital intensive growth', substituted capital for labour $\Rightarrow$ Automation
- ④ 'Missing Middle' & de-industrialisation.
- ⑤ Low level of skill.
 $\Rightarrow$ According to Skill India report $\approx 40\%$ of graduates have employable skills
- ⑥ Informal sector & casualisation of work force.
 $> 90\%$, reduced 'skill acquiring capacity'
- ⑦ Poor emphasis on research & development
 $\approx 2\%$ of total spending

Measures to enhance employment & employability

Employment $\rightarrow$ Investment in infrastructure $\Rightarrow$ PM-GATI Shakti

Bharat Mala, Sagarmala.

② Focused labour-intensive sector like -

- (a) Textile → PM-MITRA expansion
- (b) Tourism → Circuit Development
Heritage based development
- (c) Food Processing industries → PM-SAMPADA

③ Employment-linked Schemes (Economic Survey 2023)
+ Production linked incentive L-14 sector

④ MSME promotion → PM-MUDRA

⑤ SEZs development & export promotion through FTAs/CEPA.

Employability

① Shilling, upskilling & Re-skilling
→ Skill India Mission

② Academic-Industry linkage

③ R & D → NERF, ITTs, ITMs

④ Enhancing higher education (N28.1.) (AISHE)

⑤ Curriculum Revision

→ Vocational Training & education → South Korea ~ 95% (by 2047) (AISHE)

India's goal of developed economy depends upon youth progress.

Feedback

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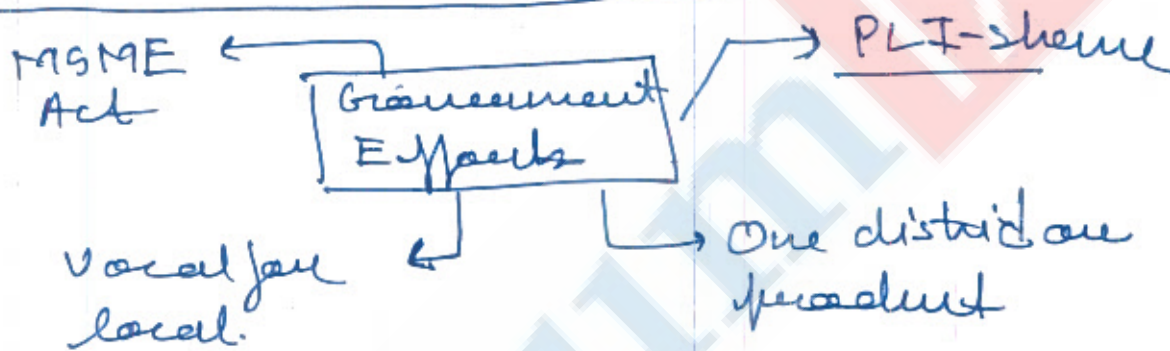
Here G is Good, A is Average and P is Poor.

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' program aimed to increase the manufacturing capacity of the country, in-line with National manufacturing Policy of 2011, to increase its share ~25% in GDP.



Key Impediments

- ① Infrastructure Bottlenecks, leading to high logistics cost ~14%, China ~8%
- ② Credit Supply, with MSME unable to get adequate supply
- ③ Technological Obsolescence, industries using unproductive technologies

(4) 'Dualism' (Economic Survey - 2017)
↳ Industries choosing to remain small.

(5) Bureaucracy & complex legislation
↳ eg Multiple labour laws
↳ Land Acquisition policies
↳ Social security's frame-work.

(6) Lack of skilled manpower,
according National Skill Report
only 5% are formally trained,
whereas South Korea ~95%

(7) Poor supply chain management,
leading to delays, enhance
costs & reduces trade competitiveness

(8) Cheaper imports from China, Vietnam
etc.

(9) Measures to encourage domestic manufacturing

(1) Infrastructure development,
multi-modal connectivity,
eg Bharat Mela, Sagarmala.

- ② Vocational Education
 - Skill India Mission
 - PM-Kaushal Vihar Yojana
- ③ Production Linked Incentives
 - eg In Pharmaceuticals, Automobiles.
- ④ Integration with global value chain & part of Network products (Economic survey)
- ⑤ Adequate Credit Supply
 - under PM-MUDRA, NABARD, RRBs etc.
- ⑥ De Hub based development
 - eg Industrial Corridor Delhi-Mumbai etc.
- ⑦ Signing of FTA, CEPA etc
 - eg CEPA with UAE

The goal to achieve developed economy by 2047, depends upon the manufacturing sector growth & it will help in emerging India as a major global player.

Feedback

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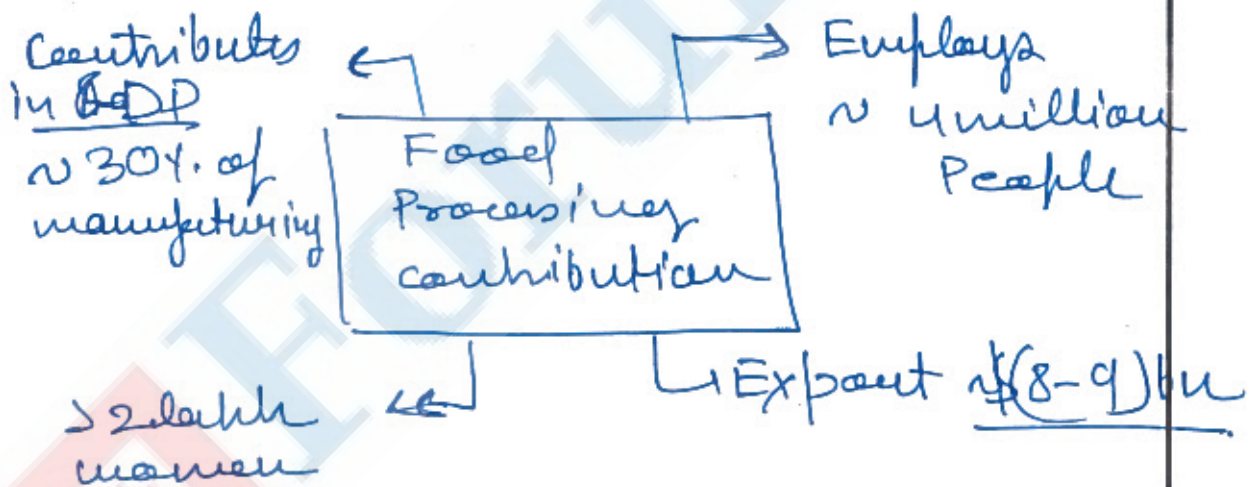
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Q.13) India is one of the largest producers of food, yet Food Processing Industry (FPI) is not well developed in the country. Examine the inhibiting factors and recommend some remedial actions to promote FPIs. (15 marks, 250 words)

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)

With food grain production reached ~328 m Tonne, India became one of the largest food producers.

Food processing is the process in which the form of the raw material is changed to make high value commodity.



Inhibiting Factors in food processing

- ① Inadequate input supplies
↳ Agriculture mostly rained
~50%.

- Shrewd production forecasts 'wheat - rice'
- Low productivity of agricultural crops, nearly 3 times less than China

(2) Informal supply chain, 90% is in informal sector

(3) Lack of infrastructure

- Inadequate cold storage (~5%) - According to World Bank
- Inadequate market connectivity

(4) Lack of adequate standardisation and Quality Testing facilities.

(5) Stiff competition from international players like "Dr Octave" or "Kellogg" etc

(6) Inadequate credit supply

↳ ~30% is from informal sector CFS - 2023

(7) Inadequate skilled-labour.

(8) Legislations like Essential Commodities Act, restrict storage.

Measures to promote FPIs

- ① Promotion of Horticulture crops
eg MIDH
- ② Infrastructure eg Cold storage facilities
eg Rural connectivity - PMGSY
- ③ Credit supply, under PSL lending through ATBs, SCBs etc.
- ④ Co-operatives promotion
eg AMUL
- ⑤ Contract farming based on market demand.
CNITI Aayog
- ⑥ Standardisation framework
eg FASSAI
- ⑦ Government incentives eg PM-SAMPADA
eg National Food Park
- ⑧ Introducing food processing curriculum in universities eg ICAR etc
- ⑨ Integration with Biotechnology
Food processing sector will ensure food & nutrition security & help in achieving SD1, SD2 etc

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)

Millets are known as super food or Shree-Anna, given their nutritional and sustainability properties...

These are coarse-grained cereals.



Adoption of Millets

① Nutritional Deficiency

① It contains micro nutrients like Potassium, iron, magnesium, Fe, Forsterite.

② It has low glycemic index suitable for diabetes patient for Bayra.

③ High fibre-content ensures nutrition supply for Ragi.

(d) It has high antioxidant properties use for child malnutrition eg Jaundice.

(2) Ecological Degradation

(a) It can be grown in semi-arid & arid regions, & hence reduce soil erosion

(b) It can sequester carbon dioxide reducing green house gas emissions

(c) It requires very less fertilizers & pesticides

(3) Farmer Incomes

→ Alternative income to farmers during wheat shock & stress
→ women empowerment eg Bullets Sisters Network etc
→ It promotes barhyand farmers

Potential Hindered by challenges -

- (1) Production skewed towards Rice-Wheat
- (2) Govt. policies & inadequate MSP assurance.

- Low demand from consumers
- Inadequate grading & post-harvest management practices
- Inadequate Food processing & taste-enhancing industries
- Seed supply are limited
- Limited market connectivity
- Behavioural issue, considered as "Poor Man's Food"

Measures

→ Focus on food processing & taste enhancing

- Grading facilities eg MSSRF
- Creating awareness eg International year of Millets
- Integration with Mid-day Meals & PMGKAY
- Incentivising through MSP & assured price.

"Millet's have potential to wipe away fear of hunger from every eye in the world"

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)

Gaganyaan Mission of ISRO aims to conduct a successful manoeuvred space flight. It will take three astronauts to the space, and observe ^{the} changes.

Achieving Broader Goals

- ① It can increase India's global share in space economy currently ~2%.
- ② Potential for space-tourism
- ③ It will encourage private sector participation in space economy
- ④ Enhancing India's image in 'space powers', similar to USA & Russia etc.

- ⑤ It provides avenues for innovation and research and development.
- ⑥ Promote employability in space sector.
- ⑦ ~~Promote~~ Raise India's potential in joining International space stations.
- ⑧ It can promote 'repairing of satellites in space'.
- ⑨ It can achieve India's goal of 'Net security provider' in the Indo-Pacific.
- ⑩ It can enhance India's 'soft-power approach' towards global South.
- ⑪ Promote 'inter-planetary manned mission' & future space explorations.

However, every opportunity comes with challenges.

① 'Crew Modul' management

- ② Safe-landing lack of Astronauts
- ③ Ground-monitoring & consistent communication
- ④ Impact of solar radiations & gamma rays on astronauts
- ⑤ Potential threat of 'Cyber-crime' on monitoring stations
- ⑥ Technological glitches & reparability in space.
- ⑦ Unpredictability of space-environment.
- ⑧ It can promote 'space-warfare' & 'race to space'

'Gaganyaan' will enhance India's space sector capabilities, with multi-dimensional impact, further focus can be shifted towards international collaboration and peaceful space exploration.

"Space as a front will ensure India's self reliance and Atmanirbhar Bharat."

Feedback

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Note: G is Good, A is Average and P is Poor.			
TOTAL MARKS			



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)

Green Hydrogen is the hydrogen is the hydrogen produced from the green energy like solar, wind etc.



Feedback

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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 deals with the integration of technology & Biology. it includes modification and alteration of genetic materials.

Biological Biotechnology: Comprehensive solutions

- ① Agriculture production, ensuring food security
 eg) Bt Cotton, ~~DM~~-Mustard
- ② It can enhance the yield of the crops eg) Mustard Dhara
- ③ Developing Pest resistance
 eg) Cotton against Bollworm.

- (4) It can help in removing non-productive genes with productive genes to deal with sterile seeds etc.

Waste Management

- ↳ Biotechnology help in developing organism that metabolises on waste.
- It can enhance the process of bioremediation.
- It can be used against plastic ~~bag~~ through plastic eating algae.
- Can be used on landfills for decomposing organic waste & developing manure.

Human Health

- ↳ It will help in curing diseases
eg: ~~test~~ CAR T-cell for cancer.

- It will cure genetic diseases like Mitochondrial defect
eg) Three-parent Baby
- Developing Vaccines eg) ZyCoV D.
- Patient specific techniques.
eg) Bone-Marrow Transplant.
- It can promote Tissue culture & stem cell therapy.
- It will promote listing of base-pairs to ~~the~~ study human genome evolution.

However - challenges like →

- ① Ethicality issue
- ② Use to develop Bio-Weapon.
- ③ Limited human resource
- ④ Inadequate Standard & procedures etc

Biotechnology offers solutions to multiple issues, however it has to be handled with care to ensure collecting good.

Feedback

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TOTAL MARKS			

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 दिश-निर्देशों पर विशेष जोर देते हुए, उनके प्रभाव को कम करने के विभिन्न उपायों पर चर्चा करें। (15 अंक, 250 शब्द)

According to NDMA, ~12.6% of Indian land is prone to landslides. Landslides is the sudden downward movement of land under the influence of gravity.



Causes

① Natural

① Plate Tectonic Movement
as earthquakes.

② Location at the faulting fg in Himalayas.

- (c) Excessive rainfall during monsoon $\Rightarrow$ soil liquefaction
- (d) steep slopes $\Rightarrow$ water chatti

② Anthropogenic Causes

- (1) Deforestation $\Rightarrow$ reducing soil holding capacity
- (2) Climate change induce monsoon variability $\Rightarrow$ Flash floods
 $\Rightarrow$ Chamoli
- (3) slope destabilising activities
 $\Rightarrow$ Mining, Blasting, etc

measures to mitigate the Impact

- (1) Early warning system for earthquakes.
- (2) comprehensive state action plan for landslide management including rehabilitation.

- ③ Afforestation activities through CAMPA funds.
 - ④ Identification of hazardous zone, through geo-spatial mapping
 - ⑤ ~~Declaring~~ Declaring No-development High-risk zone
 - ⑥ Environment Impact assessment for Industrial project
- "Landslides, can be dealt with community based engagement, sustainable development & promoting sustainable Tourism in the hilly areas!"

Feedback

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TOTAL MARKS			

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, assures the management of any potential threat emerging in coastal borders. India with > 7500 km coastal area are prone to multiple maritime threats.



Multifaceted challenges

① Drug Trafficking In 2023, Navy captured 15000 kg drugs.

- ② Human Trafficking through container ships
- ③ Piracy near Somalian coasts
- ④ Violation EEZ by Chinese spy-ships.
- ⑤ Environmental concerns arising sea surface temperatures $\sim 1^\circ\text{C}$ in past $\frac{1}{2}$ decades (MOES)
- ⑥ Illegal fishing and fisherman issue near Sri Lanka
- ⑦ Dark shipping and illegal shipping
- ⑧ Chinese expansionism "String of Pearls" Measures Taken by India

→ Defence Forces

- ↳ India Navy
- ↳ Coastal command

→ modernisation (eg) INS VIKRAJ
 ↳ Frigates etc. INS Vishakhapatnam

→ International collaboration

eg Examples eg Malabar with 8 UNO countries

→ Space monitoring

eg NAVIC.

eg Nalini Mitra.

→ Working with Institutions like IMO, abiding UNCLOS etc.

→ Research and monitoring centres
eg Pune based monitoring stations

→ Declaration of protected areas eg In Gulf of Palk-strait

Maritime comes with opportunities and challenges that needs domestic and global efforts to ensure safety & sovereignty

Feedback

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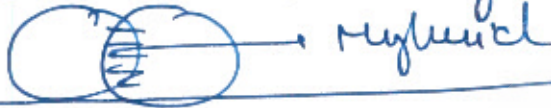
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TOTAL MARKS	
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Q.20) Bring out the challenges posed by 'hybrid warfare' to the national security and suggest comprehensive counter-measures. (15 marks, 250 words)

'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, as a emerging area of front, where traditional warfare mechanism are complemented with new age technologies and alternative warfare mechanism.



challenges

- ① Definition of Hybrid-warfare is ambiguous.
- ② Difficulty in finding the origin of threat
eg) Money-laundering
- ③ It includes psychological attacks through narrative building
eg) Infodemic.

- ④ It includes use of cyberspaces
to challenge national security
for stuxnet by Russia.
- ⑤ Given its virality & potential
harm due to Misinformation and

Feedback

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Mentor Feedback Questions

- 1
- 2
- 3
- 4
- 5

Test Goal

- 1 ☐
- 2 ☐
- 3 ☐

Outcomes

- 1
- 2
- 3

Marking Scheme

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

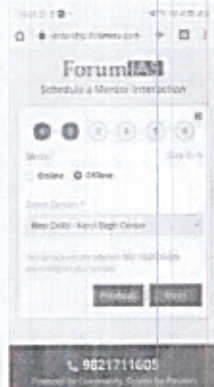
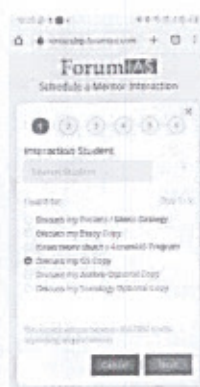
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