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TEST CODE 6 1 3 2 0 2

FIAS – MGP 2023 – Cohort 13 – Sectional Test #6

Time Allowed : Three Hours
समय : तीन घंटे

ForumIAS

Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन


Name Of Candidate परीक्षार्थी का नाम	ANAKHA K. VIJAY		
Roll No./अनुक्रमांक	1910095413	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र		Date/दिनांक	14.8.2023

*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		For Student Only / केवल परीक्षार्थी प्रयोग हेतु	
Examiner's Discretion/मूल्यांकन कर्ता का विवेक :			Start Time/प्रारंभ करने का समय : 10:00 am	End Time/समाप्त करने का समय : 1:00 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, प्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इसी 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: You can discuss your evaluated copy with the Mentor. Raise a ticket from your portal to schedule a mentor call or visit the offline centre to meet mentor (all 7 days, Timings - 11 AM to 6 PM). Further if you are unsatisfied with the evaluation, you can seek re-evaluation of the copy.

EXAMINER'S REMARKS

 **Forum IAS**

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 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 The STEM (Science, Technology, Engineering and Mathematics) sector provides opportunities for India to become a leader in knowledge economy; however, there is a need to democratise its access in order to harness its complete potential. Analyse. (10 marks, 150 words)

STEM (विज्ञान, प्रौद्योगिकी, इंजीनियरिंग और गणित) क्षेत्र भारत को ज्ञान अर्थव्यवस्था में अग्रणी बनने के अवसर प्रदान करता है; हालांकि, इसकी पूरी क्षमता का उपयोग करने के लिए इसकी पहुंच का लोकतंत्रीकरण करने की आवश्यकता है। विश्लेषण करें। (10 अंक, 150 शब्द)

STEM sector involves fundamental research in science also its applications in diverse fields.

A. Provides opportunity for India to become leader in knowledge economy

1. ~~STEM~~ STEM ensures increased R&D in science → better outcomes

2. develops sustainable outcomes in fields of

- Biotechnology
- Computer
- Robotics
- Nano technology

3. Key to tapping benefits of Industrial Revolution 4.0. @ Use of Big Data; IoT.

4. Develops research or space for national development
 @ aeronautical engineering for satellites.

5. Improves potential of human capital by creation of skilled scientists.

II. Need to democratise access

1. low level of women in STEM.
2. less than 30% phd holders.
3. Lack of representation of vulnerable groups: SC, ST at high level research.
4. Brain drain occurs due to migration of scientists.

III. HARNESSING POTENTIAL OF STEM

- o Increase expenditure on R&D from present 0.6%.
 - o Provide scholarships for girls; schemes such as KIRAN
 - o Collaboration with leaders in STEM - US, China
- Alongside, the IPR regime must also be equipped to promote STEM growth.

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

Q.2) Defense indigenization remains the Achilles heel of India's security architecture. Examine the importance of startups in defense sector to make India secure and self-reliant. (10 marks, 150 words)

रक्षा स्वदेशीकरण भारत की सुरक्षा संरचना का आधार बना हुआ है। भारत को सुरक्षित और आत्मनिर्भर बनाने के लिए रक्षा क्षेत्र में स्टार्टअप के महत्व का परीक्षण कीजिए। (10 अंक, 150 शब्द)

Defense Indigenization refers to growth of Indian companies in manufacture of production of defense equipments.

It is Achilles heel of Indian security architecture due to high capital cost of production more than 50% market share of public sector (DRDO).

Importance of defense Startup

1. Can complement role of DRDO, PSES in defense manufacture
2. Making of auxiliary parts like nuts, bolts, tyres for tanks can be outsourced
 ↳ Reduce cost, delays in manufacture

Matter India Decrease by-

3. Reducing impact of geo-political tensions on defense manufacture.
 - ⊗ Russia-Ukraine Conflict affected defense transfer.
4. Lower ⊗ threat of cyber attacks on defense technology.

Increase Self reliance

5. Reduce import dependence for arms.

6. ⊗ Greater defense ecosystem in India. ⊗ through Defense Industrial Corridors.

7. Successes achieved through LCA, Tegus, Arjun Tank, INS Vikrant

Steps such as iDEX, New Defense Procurement Policy are right steps to promote Startups in defense.

Feedback

(For OFFICE use only)

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

Q.3) DPI (Digital Public Infrastructure) is indispensable for digitally enabling citizens and businesses; however, the challenges of exclusion, exploitation, and monopolisation cannot be ignored. Examine. (10 marks, 150 words)

DPI (डिजिटल पब्लिक इंफ्रास्ट्रक्चर) नागरिकों और व्यवसायों को डिजिटल रूप से सक्षम करने के लिए अपरिहार्य है। हालाँकि, बहिष्कार, शोषण और एकाधिकार की चुनौतियों को नजरअंदाज नहीं किया जा सकता है। परीक्षण कीजिए। (10 अंक, 150 शब्द)

Digital Public Infrastructure (DPI)

Refers to use of digital technology in a non-excludable manner for public good. @ Aadhaar for DBT.

I. DPI digitally enables:

Citizens

Inclusion

@

JAM

1. leads to financial by access to credit for bank accounts.
2. platform for health services. @ Digital Health Stack.

Businesses

e-governance, compliance with

3. Facilitate smooth MCA 21 fees for company law.
4. Seamless tax filing →

Regulatory measures → better ease of business. (e) PRACATI portal.

Thus, DPI leads to better use of data → technology.

III. **Challenges:**

EXCLUSION

- digital divide between rural & urban areas
- gender divide affects women
- small businesses excluded due to cost.

EXPLOITATION

- Threat of data leak
- Cyber attacks
- on AIIMS records
- PRIVACY concerns.

MONOPOLISATION

- e-commerce rears monopoly of foreign companies like Amazon
- entry barrier for small players

Thus, Govt. must strive to demonetise DPI for access to all in the spirit of "Sabka Vikas".

Feedback

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Please put tick marks in the above table.
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TOTAL MARKS	
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Q.4) Project cheetah marks a departure from India's efforts for conservation of various critically-endangered species. In this perspective, do you think the reintroduction of major fauna that has gone extinct is justified? (10 marks, 150 words)

प्रोजेक्ट चीता विभिन्न गंभीर रूप से लुप्तप्राय प्रजातियों के संरक्षण के लिए भारत के प्रयासों से विचलन का प्रतीक है। इस परिप्रेक्ष्य में, क्या आपको लगता है कि विलुप्त हो चुके प्रमुख जीवों का पुनरुद्धार उचित है? (10 अंक, 150 शब्द)

Recently, India introduced cheetahs from Namibia to Kuno Palpur forest in Madhya Pradesh.

It marks a shift in conservation effects due to

- Re-introduction of extinct species
- reliance on foreign countries for conservation.

RE-INTRODUCTION OF EXTINCT FAUNA

Justified

- increase biodiversity of area
- helps species conservation

Not justified

- may not follow scientific practices in re-introduction

• Increased chance a survival of species.

eg) For high risk species such as Arctic lions now limited to Circ.

• Can restore once disrupted food chains

• promote tourism bio-heritage

• Species may not be able to adapt to new area.

• Competitions with other species affect survival

eg) cheetah - leopard in same area

• Affect prey population

• Increase risk of diseases among re-introduced animals.

Cheetah death post reintroduction show the need for better scientific study of such projects. Ideally, these projects must be adopted in a phased manner also considering biological factors.

Feedback

(For OFFICE use only)

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TOTAL MARKS	
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Q.5) What do you understand from Green growth? With special reference to the budget 2023-2024, discuss various government measures to propel green growth in the country. (10 marks, 150 words)

हरित विकास से आप क्या समझते हैं? बजट 2023-2024 के विशेष संदर्भ में, देश में हरित विकास को बढ़ावा देने के लिए विभिन्न सरकारी उपायों का आकलन कीजिए। (10 अंक, 150 शब्द)

Green Growth refers to growth balancing the needs of environment.

② Green GDP, environmental budgeting.

GREEN GROWTH - Meaning

- growth seen in qualitative & quantitative terms
- Accounting practices look at loss of ecological services due to growth.

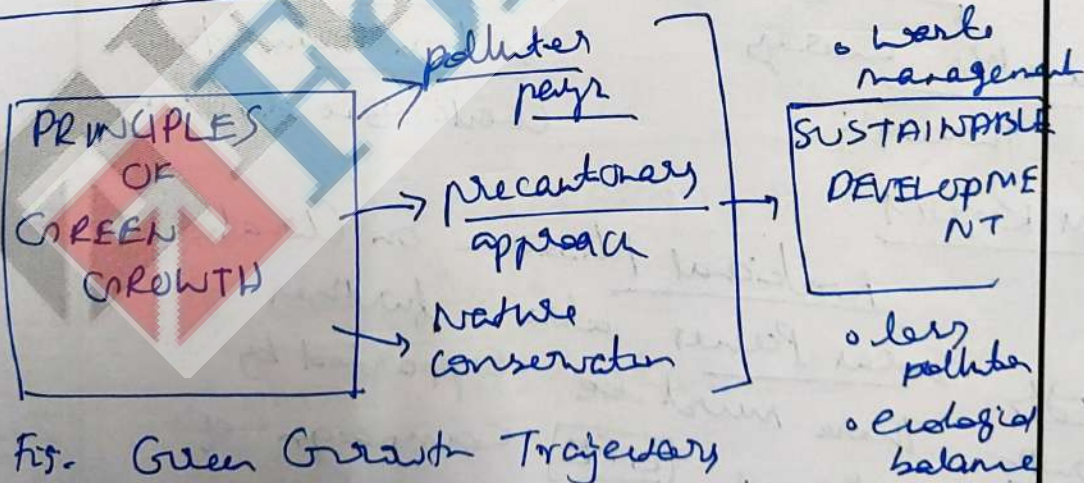


Fig. Green Growth Trajectory

GOVT MEASURES TO PROPEL GREEN GROWTH

1. Promotion of electric vehicles to reduce pollution through FAME-II scheme.
 2. PM PRANAM to reduce reliance on chemical fertilizers; promote natural fertilizers.
 3. Allocation for Namami Gange for river rejuvenation.
- + PANCHAMRITA Principles adopted

for:

Renewable energy
Push through
PM KUSUM

National Cooling Action Plan to check ozone depletion.

National Mission on Climate Change
Solar Panels also further green growth. These must be supported by community through LIFE campaign of sustainable living.

Feedback (For OFFICE use only)

#	Q	A	R
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TOTAL MARKS			

Q.6) Unplanned urbanization has made Indian cities (vulnerable) to fire safety hazards. Discuss and recommend measures for mitigating urban fires, with special reference to national building code, 2016. (10 marks, 150 words)

अनियोजित शहरीकरण ने भारतीय शहरों को अग्नि सुरक्षा खतरों के प्रति संवेदनशील बना दिया है। राष्ट्रीय भवन संहिता, 2016 के विशेष संदर्भ में, शहरी अग्नि को कम करने के उपायों पर चर्चा करें और सुझाव दीजिए। (10 अंक, 150 शब्द)

Recent fire incidents in Gurgaon & Delhi show vulnerability of urban areas to fire hazards.

Unplanned urbanisation → FIRE HAZARDS

- leads to use a low quality building material.
- Safety norms not followed.
- Fire ducts absent.
- Corruption in urban governance → increased non-compliance of building norms.

MEASURES to MITIGATE FIRES

⊕ Stringent Implementation of National

Building Code 2016

+ Regular Inspection of buildings.

- heavy penalty on violators.
- non grant of permit for non compliant buildings
- Increase public awareness on Code.

④ Equip State → National Disaster Response Force to handle fires.
 ↳ mock drills as regular part of training.

↳ these make better fire mitigation equipment available

⑤ Goggles for visibility

⑥ Increase public knowledge on precautions.

↳ first aid.

⑦ Equip hospitals to handle accidents.

These steps are needed to make urban space safer.

Feedback

(For OFFICE use only)

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TOTAL MARKS			

Q.7) Edge in modern warfare lies not so much in the capacity to overwhelm the adversary as much in the ability to nip the threat in the bud. In this context, discuss the role of intelligence in maintaining national security, and also cite challenges associated. (10 marks, 150 words)

आधुनिक युद्ध में बढ़त प्रतिद्वंद्वी पर हावी होने की क्षमता में उतनी नहीं है जितनी कि खतरे को शुरुआत में ही खत्म करने की क्षमता में है। इस संदर्भ में, राष्ट्रीय सुरक्षा को बनाए रखने में खुफिया जानकारी की भूमिका पर चर्चा कीजिए और इससे जुड़ी चुनौतियों का भी उल्लेख कीजिए। (10 अंक, 150 शब्द)

Intelligence refers to the arm of national security that collects information to prevent security threats.

Role of Intelligence

- Act as extended arm of national security forces
- ⊙ Role as IB in facilitating Pulwama surgical strike.
- leads to better preparedness
- ⊙ Check worse border security threats.
- Ensures safety of public spaces, critical infrastructure, leaders, during crisis situations.

Challenger

- Absence of technology adoption through IOT, AI based Surveillance.
 - Emergence of non-State actors as threat.
 - Lone Wolf attacks, and cyber attacks weaken effectiveness of Intelligence.
 - honey trapping of defence officers.
- Post 28/11 attacks, Intelligence war revamped through creation of MAJORID. Adoption of NETRA, NAVIC can also add strength to the intelligence network.

Feedback

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TOTAL MARKS

Q.8) Highlighting different kinds of cyberthreats faced by India, evaluate the current status of cybersecurity framework in the country. (10 marks, 150 words)

भारत द्वारा सामना किए जाने वाले विभिन्न प्रकार के साइबर खतरों पर प्रकाश डालते हुए, देश में साइबर सुरक्षा ढांचे की वर्तमान स्थिति का मूल्यांकन करें। (10 अंक, 150 शब्द)

Cyber threats are found in the virtual world, there pose a threat to cyber infrastructure, cyber users.

KINDS OF THREATS.

① Cyber Terrorism ^{to spread}
terrorism

② Cyber attacks - Trojan
malware, sansomware attacks

③ Stare attack.

④ Cyber fraud by impersonation,
identity theft.

⑤ Phishing, Smishing affecting
privacy of users.

⑥ Cyber bullying, cyber Stalking
affecting safety of women.

CURRENT STATUS OF CYBER SECURITY FRAMEWORK

POSITIVES

- National Cyber Security Policy 2013 provides guidance
- IT Act 2008 punishes cyber offences.
- CERT-In for protection of critical Infrastructure
- Notable State models - Cyberdome, Kerala

NEGATIVES

- Non ratification of Budapest Convention
- Poor cyber etiquette & awareness
- Non installation of anti-virus software.
- Recent failures - Red Echo attack on Mumbai power grid.

The need of hour is to generate more citizen awareness on cyber safety through steps such as Cyber Swachhata Kosh

Feedback

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#	G	A	P
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TOTAL MARKS	
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Q.9) Money laundering is a global problem that cannot be solved by isolated responses. Discuss the statement and also suggest ways to curb the menace. (10 marks, 150 words)

मनी लॉन्ड्रिंग एक वैश्विक समस्या है जिसे विभाजित प्रतिक्रियाओं से हल नहीं किया जा सकता है। कथन पर चर्चा करें और खतरे को रोकने के तरीके भी सुझाएं। (10 अंक, 150 शब्द)

Money laundering is the organised crime of channelising illicit money into economies.

[A global problem]

- Can be spread across multiple countries due to many steps in the process.

[Channelising] → [Layers] → [Integration]

[STEPS OF MONEY LAUNDERING]

- Lack of financial regulations increase risk

↳ Role of Swiss banks in increasing money laundering to India.

Ways to curb

① Implement strictly
 ↳ timely punishment
faster prosecution

② Collaborate - with Interpol,
FATF on combating money laundering

③ Strengthen powers of
Enforcement Directorate

④ Improve security features
on notes : ① embossing,
security Ink

Better checks at border
 can also help in inflow of
fake currency :

Feedback
 (For OFFICE use only)

	⊙	Ⓐ
AWIS		
CD & VA		
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P & R		

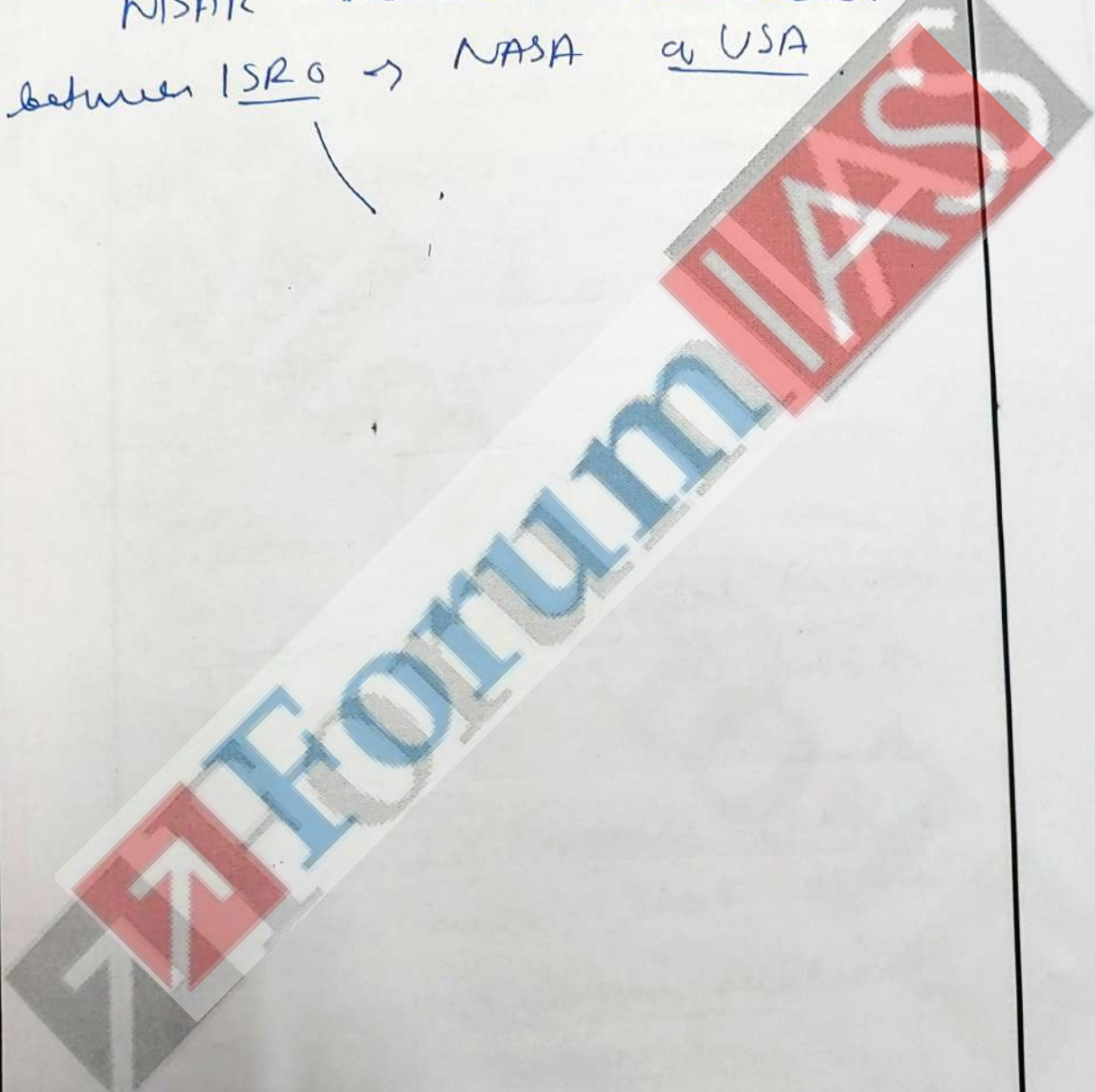
Please put tick marks in the above table.
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TOTAL MARKS

Q.10) Assess the relevance of the NISAR mission in observing and managing climate change and natural hazards. (10 marks, 150 words)

जलवायु परिवर्तन और प्राकृतिक खतरों के अवलोकन और प्रबंधन में NISAR मिशन की प्रासंगिकता का आकलन कीजिए। (10 अंक, 150 शब्द)

NISAR involves collaboration between ISRO → NASA or USA



Q.11) Though often presented as a panacea to the dichotomy between development and ecological conservation, nuclear technology has multitude of other uses. Briefly explaining India's three stage nuclear program, throw light upon various applications and challenges associated with nuclear technology in the country. (15 marks, 250 words)

हालांकि अक्सर विकास और पारिस्थितिक संरक्षण के बीच द्विभाजन के लिए परमाणु प्रौद्योगिकी को रामबाण के रूप में प्रस्तुत किया जाता है परंतु इसके कई अन्य उपयोग भी हैं। भारत के तीन चरणों वाले परमाणु कार्यक्रम की संक्षेप में व्याख्या करते हुए, देश में परमाणु प्रौद्योगिकी से जुड़े विभिन्न अनुप्रयोगों और चुनौतियों पर प्रकाश डालिए। (15 अंक, 250 शब्द)

India has around 22 nuclear reactors producing 6780 MW of power. Nuclear technology has been supported by scientists such as Dr. A.P.J. Abdul Kalam as a panacea for development.

I. INDIA'S THREE STAGE NUCLEAR PROGRAM:

① Pressurised Heavy Water Reactor (PHWR) uses U-235 as fuel to produce Pu 239.

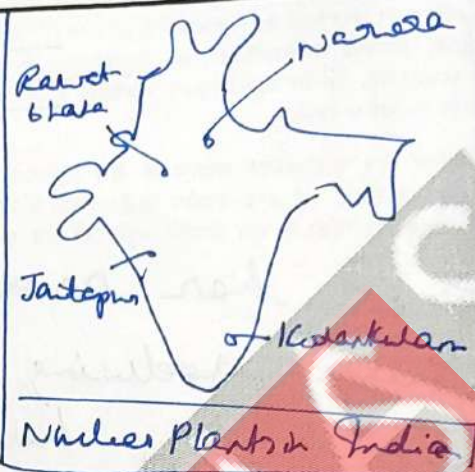
② Fast Breeder Reactors (FBRs) - to create more stock of Pu.

③ Use of Thorium in nuclear plants for power.

Presently, India is in the second stage of the program.

II. APPLICATION OF NUCLEAR TECHNOLOGY

① Production of nuclear power - a renewable source; reduce GHG emissions.



② For radiation therapy; treat diseases or Cancer.

③ Nuclear fusion as a source of power (ENERGY SECURITY)

⊕ Application for space exploration
⊖ Nuclear power sources.

III. CHALLENGES

• Risk of radiation from nuclear waste.

Public Skepticism due to nuclear safety concerns

Protests against Kudankulam plant.

Way FORWARD

follow best practices nuclear safety

Feedback

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Please put tick marks in the above table.

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

TOTAL MARKS	
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Q.12) What do you understand by nanotechnology? In what ways can nano-technology aid in socio-economic growth of the country? (15 marks, 250 words)

नैनो टेक्नोलॉजी से आप क्या समझते हैं? नैनो-प्रौद्योगिकी देश के सामाजिक-आर्थिक विकास में किस प्रकार सहायता कर सकती है? (15 अंक, 250 शब्द)

Nano-technology refers to use of objects where atleast one dimension is in the nanoscale ($10^{-9}m$).

I. NANO TECHNOLOGY → Scope

- Elements show altered properties at nano scale
- Gold becomes reactive, potential to be applied in diverse sectors.

II. AIDS SOCIO-ECONOMIC GROWTH

- Used in health sector for drugs delivery, better diagnosis.
 - Nanobots for surgeries.
 - ↳ can be used for personalised medicine, preventive medicine, treatment of diseases, or cancer, alzheimer.

2. For bio-remediation of waste.

- ↳ leads to better waste management → Reduce littering.
- ↳ Nanoparticles for degradation of plastic waste

3. Lead to industrial development

- ↳ Used in chemical manufacture
 - Nano particles have large surface area to volume ratio : good surface for reaction.
- ↳ Used for fertilizer products

4. Agricultural development -

- ↳ Nano urea : reduce amount of urea → Improve soil health.

5. Promote growth of electronics sector.

- ↳ better models of semiconductors can be produced
- ↳ automobile manufacture can be improved

III. PRESENT STATUS OF NANOTECHNOLOGIES

1. Delayed adoption of technology at ground level due to poor Industry - academic collaboration.
2. High cost of capital development of R&D.
3. Lower number of startups in the sector.

IV. WAY FORWARD FOR NANO TECHNOLOGIES

- o Increase budget outlay for nano technology Mission.
- o Adopt global best practices from leaders such as Germany.

The four must be to adopt a multi disciplinary approach to promote research in nanotechnology.

Feedback

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TOTAL MARKS

Q.13) Warming ocean temperatures, oxygen loss and ocean acidification form a deadly trio for marine ecosystem that can have irreversible repercussions for environment as well as economy. Elucidate. (15 marks, 250 words)

समुद्र का गर्म होना, ऑक्सीजन की कमी और समुद्र का अम्लीकरण समुद्री पारिस्थितिकी तंत्र के लिए एक घातक तिकड़ी है जो पर्यावरण के साथ-साथ अर्थव्यवस्था के लिए अपरिवर्तनीय प्रभाव डाल सकती है। स्पष्ट करें। (15 अंक, 250 शब्द)

Marine ecosystems in oceans are a rich source of biodiversity. Through "Blue economy", they also drive economic growth.

I. WARMING OCEAN TEMPERATURE

- due to global warming led increased sea surface temperature.

REPERCUSSIONS :

ON ENVIRONMENT

- Affect ocean heat budget
- Kills fishes, sensitive marine organisms.
- Coral bleaching occurs
- Affect ocean current movement

ON ECONOMY

- leads to collapse of ocean dependent communities
- affects tourism
- disrupt rainfall.
- El Niño on Indian Monsoon.

- leads to marine heat dome

- Increased land temperature

eg heat wave in USA

II. OXYGEN LOSS

- due to pollution from industrial sources & plastic discharge

ON ENVIRONMENT

- Affects reproduction & life cycle of organisms
- leads to migration of fishes.

ON ECONOMY

- Reduces fish yield
- loss of livelihood.
- Job loss at fisheries allied sector.

III. OCEAN ACIDIFICATION -

- Reduced pH level of sea water

ON ENVIRONMENT

- Affects shelled organisms

ON ECONOMY

- Biodiversity / coral loss.

IV. PROTECTING MARINE ECOSYSTEMS

The deadly trio must be addressed based on principle of SUSTAINABLE DEVELOPMENT →

- ① Implement UNCLOS 1982 for global cooperation to preserve ocean ecosystem
- ② Climate change ~~effect~~ effects → global warming mitigation through UNFCCC, Paris Pact
- ③ National policy for sustainable fishing. (e.g.) Blue Economy Mission.
- ④ Fertilization to restore bleached corals.
- ⑤ Reduce marine pollution from plastic, oil spill, sediment.
 ↳ steps on microplastic. ASEAN Pact on

Role of local communities is also key for ocean conservation. That can realize SDG goal of protecting life on water.

Feedback

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Q.14) Examine the factors that heightens the vulnerability of Indian cities to urban floods. In light of National Disaster Management Authority (NDMA) guidelines on urban floods, discuss suitable mitigation and management strategy. (15 marks, 250 words)

उन कारकों का परीक्षण कीजिए जो शहरी बाढ़ के प्रति भारतीय शहरों की सुभेद्यता को बढ़ाते हैं। शहरी बाढ़ पर राष्ट्रीय आपदा प्रबंधन प्राधिकरण (NDMA) के दिशा-निर्देशों के आलोक में, उपयुक्त शमन और प्रबंधन रणनीति पर चर्चा करें। (15 अंक, 250 शब्द)

Urban floods refer to flooding in urban areas → lower. Recent floods in Chennai, Mumbai, Hyderabad are examples.

I. FACTORS THAT HEIGHTEN VULNERABILITY OF INDIAN CITIES.

1. High population density of cities.
2. Poor drainage system affects water flow.
 - ⊗ Canals choked in Chennai
3. Unplanned urbanisation causes encroachment of wetlands, food plans. ⊗ In Kochi, Kerala.
4. Climate change induced weather extremities. ⊗ Cloudburst in Idukki, Kerala (2018).

5. Lowrise of cities affect water seepage.

II. NDMA Guidelines on Urban Flood

- Objectives:
- Enable better response to urban floods.
 - Pre-disaster preparedness by flood mapping of cities.
 - Coordinate response at all levels of Govt.

MITIGATION STRATEGIES

- A. Equip disaster force for quick response.
 - ↳ Moc drills to reduce response time
- B. Awareness generation - among children, public
 - ↳ possible evacuation routes in city
 - ↳ geographical outlay of place.

MANAGEMENT STRATEGY

- C) Follow sustainable urban governance model
 - + • Enforce CRZ Regulations to preserve coastal areas.
 - + • Ramsar Convention to conserve wetlands
 - East Kolkata wetlands
 - effective drainage

- D) Evolve system
- E) Follow "Room for River" Project model from Norway.

F) Standard Operating Procedure (SOP) for quick evacuation.

As climate change will increase urban floods, focus must be also on helping communities "Build Back Better" from these.

Feedback
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TOTAL MARKS		

Q.15) Though Naxalism is showing a downward trend, it is not only thriving in its core areas of influence but also changing its form. Analysing the reason for its retreat, underline the factors behind its continuance. Also, discuss measures towards eliminating LWE from the country altogether. (15 marks, 250 words)

हालांकि नक्सलवाद में गिरावट की प्रवृत्ति दिख रही है, लेकिन यह न केवल अपने प्रभाव के मूल क्षेत्रों में फल-फूल रहा है बल्कि अपना रूप भी बदल रहा है। इसके पीछे हटने के कारणों का विश्लेषण करते हुए, इसके जारी रहने के पीछे के कारणों को रेखांकित करें। साथ ही देश से वामपंथी उग्रवाद को पूरी तरह खत्म करने के उपायों पर भी चर्चा करें।

Left wing Extremism (LWE) (15 अंक, 250 शब्द)
is a philosophy based on Marxism that seeks to overthrow State by violence

I. DOWNWARD TREND

* Red Corridor of Naxalism affected areas reduced.

LWE Fatality: (2022)
• No. of affected districts reduced from 35 → 25
• Naxal violence decreased 70%. (MoFF)

Reasons for Retreat:

1. Better security architecture through CRPF, local police.
2. Restriction of naval camps → loss of leadership among naxals.
3. Better development efforts at core area improve public welfare.

But, it continues in changed form -

- second stage young leaders
have assumed roles

- TRI JUNCTIONS have become
hotspots. (e) Gadchiroli, Maharashtra

- New areas see nasal influence
(e) Wayanad, Kerala.

II. REASONS FOR CONTINUANCE

1. Availability of IEDs, arms for
nasals.

2. Ability to attack security forces
cause damage.

3. Absence of adequate State
presence. (e) In Bastar forest.

4. Use of social media to spread
messages → attract youth

5. Spread of nasalism to urban
areas.

III. MEASURES TO ELIMINATE LWE

- ① Involve specialised security forces trained in counter/guerrilla warfare & community policing. @ Grayhounds (AP) model
- ② Consume modern weapons, UAVs are ~~also~~ available with forces.
- ③ Address governance deficits:

Case Studies:

- ① CP Choudhary IAS - started schools for children in naral hit district
- ② Ajay Tamboli IAS - led hospital construction at Barter

④ Recruit community members into security forces.

⑤ Rehabilitation of surrendered rebels : use inputs to understand strategy.

The Sarnadhan approach of technology use or smart policies must be followed to eliminate terrorism.

Feedback

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TOTAL MARKS

Q.16) Across sectors and regions, the most marginalised sections are also the most affected by the impacts of climate change. Explain. Also, present a case for a climate resilient model of development that integrates mitigation and adaptation measures. (15 marks, 250 words)

विभिन्न खंडों और क्षेत्रों में, सबसे अधिक हाशिए पर रहने वाले वर्ग भी जलवायु परिवर्तन के प्रभावों से सबसे अधिक प्रभावित हैं। व्याख्या कीजिए। इसके अलावा, विकास के जलवायु लचीले मॉडल के लिए एक मामला प्रस्तुत कीजिए जो शमन और अनुकूलन उपायों को एकीकृत करता है। (15 अंक, 250 शब्द)

IPCC has sounded a Code Red for humanity on climate change. Some groups are however hit harder by climate change.

I. MARGINALISED SECTIONS → CLIMATE CHANGE :

1. Affects economic growth of poor regions.
 (e) sea level rise causes livelihood loss among fishermen.
2. Heat wave affects semi-skilled labourers in construction sites, farms.
3. women face higher burden of climate change induced water scarcity.
 (e) water shortage in Maharashtra.

4. Climate Refugee : People forced to flee from homelands.

③ In Sahel region (Africa) due to desertification : children, elderly most affected.

II. CLIMATE RESILIENT MODEL OF DEVELOPMENT

To manage climate change, focus must be on -

Adaptation

- Enable communities to better cope up with effects of climate change.

- Reduces their vulnerability

③ Build flooding resilient near flood planner.

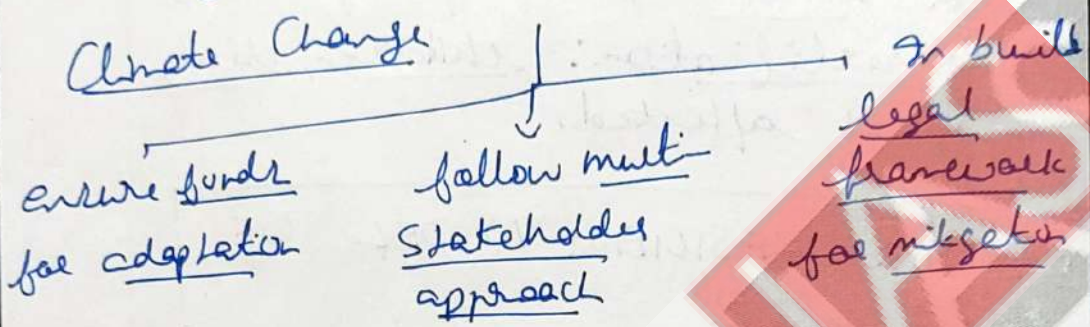
Mitigation

- Reduce the harmful impact of climate change, steps to prevent climate change

- Improve preparedness.

③ Reduction of GHG emissions.

Both must be integrated by →
 ① The National Action Plan on Climate Change



② Adopt TRADITIONAL KNOWLEDGE of Communities..
 a) Sacred groves to protect forests

③ Laws to enforce mitigation
 a) Polluter norms under Water Act.

b) Community based model for Carbon neutrality.
 c) Muenangadi model from Wayanad, Kerala.

⑤ Technology use: Carbon sequestration, electronic vehicles etc.

A local to global approach through platforms such as CPRI are needed for a climate resilient development.

Feedback
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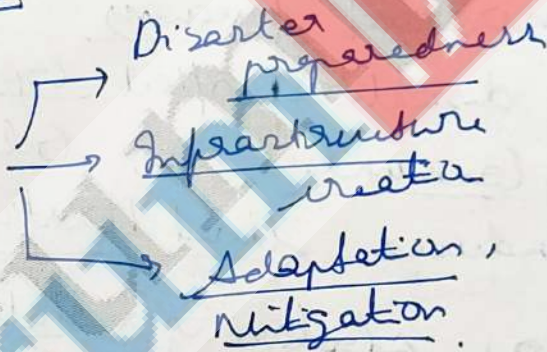
Q.17) A multi-sectoral and multi-tiered process, Disaster Risk Reduction (DRR) is beset with a plethora of constraints. Identifying these constraints, recommend measures for building a robust DRR strategy. (15 marks, 250 words)

एक बहु-क्षेत्रीय और बहु-स्तरीय प्रक्रिया, आपदा जोखिम न्यूनीकरण (डीआरआर) कई बाधाओं से घिरी हुई है। इन बाधाओं की पहचान करते हुए, एक मजबूत डीआरआर रणनीति बनाने के उपायों की सिफारिश कीजिए। (15 अंक, 250 शब्द)

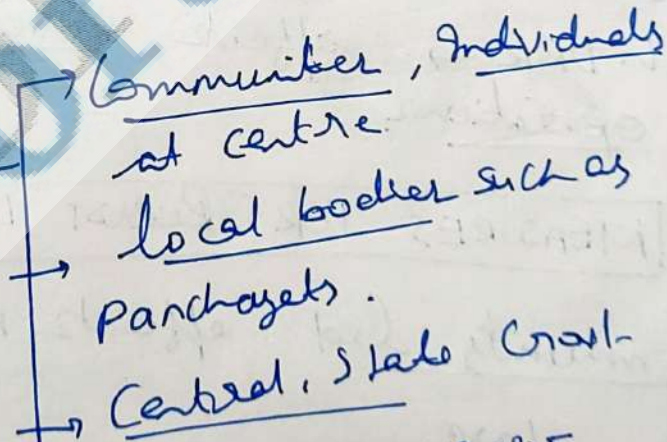
Randai Framework for Disaster Management stresses on Disaster Risk Reduction (DRR) to enable communities overcome effects of a disaster.

I. DRR : Strategy

Multi-sectoral process, involve



Multi-tiered process with



② Disaster management Act 2005 create NDRF, SDRF.

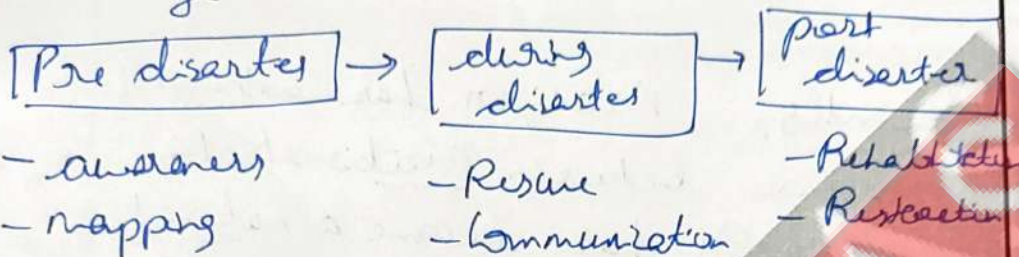
II. CONSTRAINTS IN DRR

1. Absence of Coordination b/w response units
2. Issue of insufficient funds to cope with scale of disasters.
↳ especially among less developed nations. (eg) Pakistan floods, 2023.
3. Increased frequency of disasters affect coping mechanism of communities. (eg) Global warming induced land bursts.
4. Slow adoption of latest technology in DRR → affects efficiency of operations.

III. MEASURES FOR ROBUST DRR

1. Community led efforts must be at the fore.
(eg) Role of fishermen in rescue efforts at Keela flood (2018)

2. Adopt a life-cycle approach to manage disasters;



3. Adopt resilient infrastructure to mitigate impact
 (e) floating buildings, storm tunnels in Japan.

4. Evolve disaster-specific guidelines for clarity (e) NDMA Guidelines for Landholders.

5. Adopt technologies for DRR → drone for rescue
 → GIS for mapping

A proactive, than reactive approach is needed. NCRs such as Green can also play a key role in rebuilding communities after disasters.

Feedback

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TOTAL MARKS			

Q.18) Though ethnic fault lines are a major threat, security challenges in the North-East are not confined to the same. Discuss the statement with special reference to Manipur. (15 marks, 250 words)

यद्यपि एथनिक फाल्ट लाइन्स (नृजातीय त्रुटिपूर्ण रेखाएँ) एक बड़ा खतरा हैं, उत्तर-पूर्व में सुरक्षा चुनौतियाँ यहीं तक सीमित नहीं हैं। मणिपुर के विशेष संदर्भ में कथन पर चर्चा कीजिए। (15 अंक, 250 शब्द)

Recently, Manipur has witnessed deadly clashes between Meitais/Kuki ethnic groups. It has become a national headline reflecting the unique security challenges of North East.

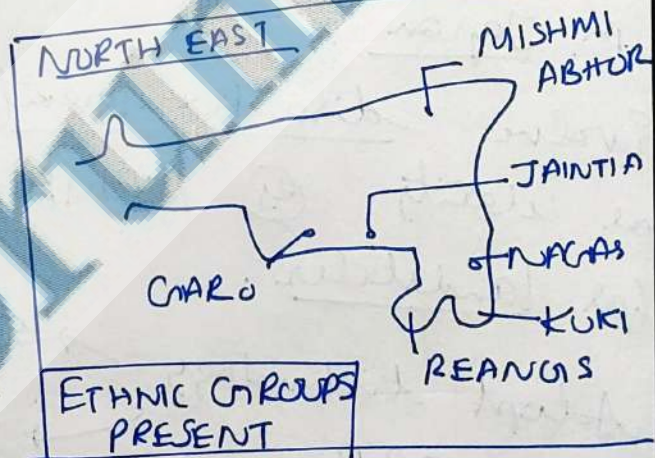
A. NORTH EAST - SECURITY CHALLENGES

ETHNIC FAULT LINES

1. Multiple ethnic groups create lack of united identity

2. Artificial historical borders create intent or region

(3) Division by Bengal Frontier Regulation without due regard to ethnicity of people.



3. Fear of identity loss among groups due to migration

(e) Bengali migration into Assam causes fear psychosis among Assamese.

4. Pockets → scarce resource distribution increase tension

(e) Meitis in Manipur valley →
Kukis on hills.



5. Lower political representation of groups causes

lack of visibility to their problems.

MORE SECURITY CHALLENGES:

6. Insurgency - threat from groups as Nagas → call for creation of Greater Nagalim.

7. cross border support to insurgents → supply of arms.

8. Law → order affected due to clashes.

9. Collapse of local security structure
 (25) Insurrection against residual violence
 against human in Manipur.

B. ENSURING SECURITY IN NORTH EAST

1. Follow zero tolerance to violence → Immediate arrest of law breakers
2. Talks, negotiations with insurgent groups @ Bodoland Agreement
3. Resettlement, Rehabilitation of vulnerable groups @ Basis on Tripora/ Mizoram.

4. Infrastructure creation for better Connectivity.

→ Bridges across Brahmaputra
 → pipelines for job creation

5. Promote local economic growth → Adventure Tourism.

There must be followed by an accommodative approach to protect regional customs of ethnic groups for lasting peace.

Feedback (For OFFICE use only)

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TOTAL MARKS			

Q.19) Critically examine the role of development initiatives in addressing the root causes of militancy/ terrorism in Jammu & Kashmir.
(15 marks, 250 words)

जम्मू और कश्मीर में उग्रवाद/आतंकवाद के मूल कारणों को संबोधित करने में विकासात्मक पहल की भूमिका का आला-चनात्मक परीक्षण कीजिए।
(15 अंक, 250 शब्द)

Jammu Kashmir is called "Heaven on Earth". But, militaries & cross border terrorism have affected peace in the region.

I. Militaries → Terrorism in J.K. - Causes

1. Historical factors - Pakistan supported infiltration on JK's accession to India
2. Poverty → low level economic development, unemployment push youth into radicalism
3. Illegal arms trade, drugs from border
4. Benefits of welfare don't reach people (TRUST DEFICIT with State)

II. Role of development Initiatives

These focus on improving the living conditions of people in JK.

Effects made:

1. Repeal of Art. 370 for complete integration of JK into India
 ↳ creation of Union Territories
Ladakh → Kashmir
2. Infrastructure creation - Roads, Bridges built by Baader Road Organisation.
 [eg] Bridge across Chenab Chenani, Stal tunnels for all year road access.
3. Social welfare schemes for people
 (eg) Scholarships for students, skill programs for youth.
4. Psy-ops by JK Police to check radicalisation of youth → Involves psychological counselling.
5. Baader development
 ↳ cross border trade by Integrated Check Posts
 (eg) Attari (Punjab).

↳ VIBRANT VILLAGES Program for community development.

III. Challenges Remain

- human development indicators low in the valley. (e) literacy rates among marginal groups
- election to local bodies delayed
→ absence of political representation
- Chinar - CPEC poses threat to sovereignty.
- Social media used to incite youth. (e) By ISIS.

Social → human development must happen. Tourism can be promoted in the valley, while improving security through use of latest technology at borders.

Feedback

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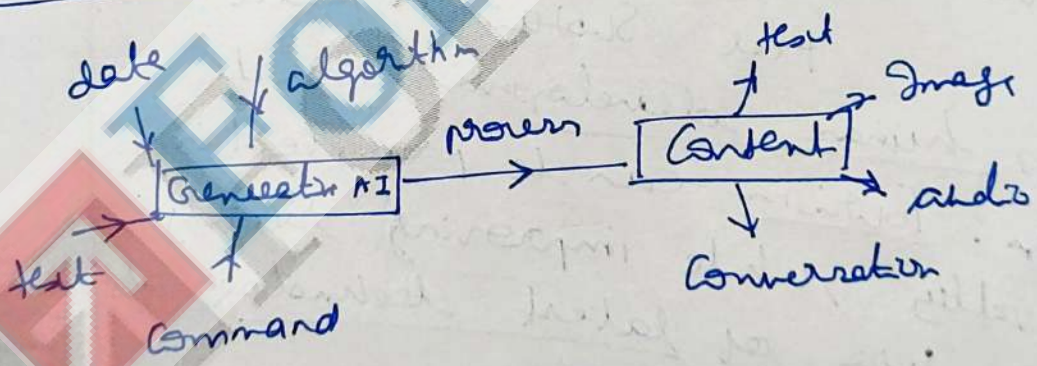
Q.20) What do you understand by generative Artificial Intelligence (AI)? How can policymakers and regulatory bodies effectively address the concerns and challenges posed by generative AI? (15 marks, 250 words)

जनरेटिव आर्टिफिशियल इंटेलिजेंस (एआई) से आप क्या समझते हैं? नीति निर्माता और नियामकीय निकाय जनरेटिव एआई द्वारा उत्पन्न चिंताओं और चुनौतियों को प्रभावी ढंग से कैसे संबोधित कर सकते हैं? (15 अंक, 250 शब्द)

Generative AI is an advanced form of Artificial Intelligence part of Industrial Revolution 4.0.

I. Generative AI - features

- Capable of learning from experience
- Can generate content based on data input provided to it



FUNCTIONING OF GENERATIVE AI.

[eg] Chat GPT by Open AI

- Involves features of machine

Learning or Generative AI can draw outputs from older inputs.

II. CONCERNS → CHALLENGES POSED.

1. Possible misuse of technology by hacker / terrorists. (e.g) for cyber fraud
2. Privacy concerns due to possible data leaks → affect PRIVACY, safety of users.
3. Students misuse Chat GPT to submit essays → affects quality of education
4. Possible errors in algorithm affects outcomes.
(e.g) Affect safety of autonomous cars.
5. Reduce humane touch of technology.
(e.g) Ethical values affected; sexist replies given by Chat GPT.
6. Possible job loss or Chat GPT replaces humans at work.

II. ADDRESSING CHALLENGES

Role of policy maker

- 1. Create a comprehensive legal framework for AI
- 2. Decide question of liability for acts done by AI.
- 3. Identify norms for algorithms for AI. (e.g) Fellow Principles by WEF.

Role of Regulatory bodies

- 4. Create operating standards for generative AI in health, education, research
- 5. Regularly monitor outputs of AI software (cyber audit)
- 6. Collaboration between industries / academia for smooth regulation.

These steps can help us tap the benefits offered by Generative AI at the same time, minimizing possible risks.

Feedback

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