

TEST CODE 6 1 3 2 0 2

FIAS - MGP 2023 - Cohort 13 Alt - Sectional Test #4

Time Allowed : Three Hours
समय : तीन घंटे

ForumIAS

Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	Deven Chaturvedi		
Roll No./अनुक्रमांक		Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
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. 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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			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, प्रलाचार्ट, तथ्यों और आंकड़ों या समय 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 :			EG/ईजी :	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

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 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) 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 is very critical for the human capital development of any economy - Presently India spends 4% of GDP on this sector.

Leadership in knowledge economy :-

- ① Indigenisation of critical tech
ex) Chandrayaan-3, INS-Arghat
- ② Self sufficiency and reduction in import
ex) \$100bn defence import
- ③ Research, development and attracting opportunities
ex) IISc Bangalore - 3D design houses in Loc.
- ④ soft power of India
ex) Twinning with IITs + MITs.
- ⑤ Inclusive growths with application oriented studies

Democratising access to harness potential

① STEM should not be 'elite hegemon'
hardly 7-8% SC, ST and 18% women is present in this sector

② Curbing disparity

North South

ex) south-silicon valley

Regional disparity

ex) communism

↓
demographic disparity

③ Inclusive education from school level

ex) NEP 2020 - flexible courses.

④ Better incentives for researchers

ex) PMRF scholarships to 400 students

⑤ Culture of research to be promoted

In this regard KIRAN, CURIE for women, Nambiar post graduate scholarships for SC/STs.

have been made for democratising & digitising research in India.

Feedback

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Please put tick marks in the above table.

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

TOTAL MARKS

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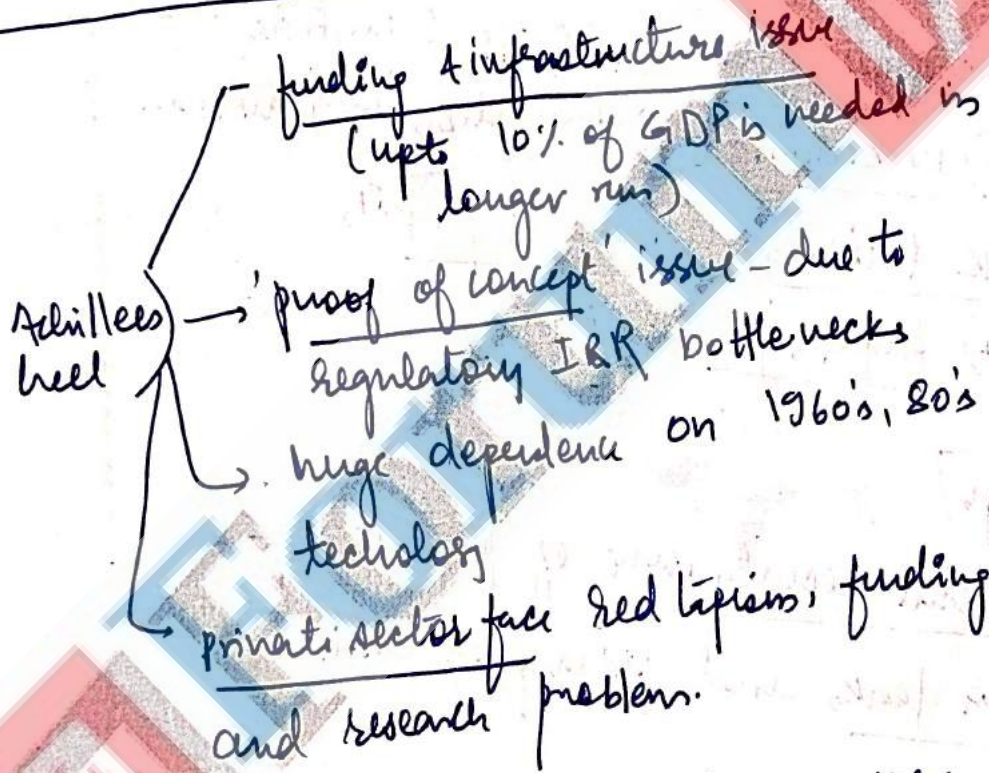
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Q.2) Defense indigenization remains the Achilles heel of India's security architecture. Examine the importance of startups in defense sector to make India secure and self-reliant. (10 marks, 150 words)

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)

India currently exports over \$80 bn dollars of defense equipment (and 2nd largest) as per SIPRI in the world



ex) BITs pilani startup for drone warfare was pulled out after government denied patenting the technology

(Do not write in this margin)

Q.3) DPI (Digital P...
nesses; however, th...
Examine.

Importance of startups for defence indigenisation.

- ① Investment with IISC + Mudrex making 3D houses in Border regions provides ample funding.
- ② Innovative technology - crossing the '90's dilemma' of India's security.
- ③ Reduce dependence at critical juncture
ex) Doktrin & information warfare issue.
- ④ Quick & timely delivery of projects
ex) fighter jets in progress.

Challenges

- ① National security issue of projects.
- ② Data leaks and privacy of critical locations.
- ③ 'Regulatory cholesterol' - Snoop Chandra Committee.

India has a positive index & indigenisation list which focuses on self reliance and

Atmanirbharta of projects.

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

Q.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; हालांकि, बहिष्कार, शोषण और एकाधिकार की चुनौतियों को नजरअंदाज नहीं किया जा सकता है। परीक्षण कीजिए। (10 अंक, 150 शब्द)

Digital public Infra (DPI) are inter connected sets of digital infrastructural tools (like Aadhar, e-Kyc, etc) that provides public good & service delivery at reduced cost.

Indispensable

① citizen enablement

effectiveness of delivery

ex) JAM Trinity

reduced corruption

ex) digitisation of process

convenience of work

ex) GST Network

② Business environment

enhance business operation

ex) ITR filing

reduced regulation & license raj

ex) Gabshakti portal of single window clearance

efficient transaction

ex) ESG online governance.

However the Challenges

1) exclusion

47% Internet usage in the India (30% in rural area)

digital illiteracy (40% women)

spatial variation (North east & tribal region lack internet)

2) exploitation

cyberwarfare (NASSCOM - \$28% increase in attacks)

malware & theft (frauds)

privacy issues

data centre issues

3) monopolisation

data monopolisation law (ex) state is big tech issue

small business may affected. (ex) ONDC

There is a need to democratise Internet in India and focus on decentralised Internet governance by reducing the challenges and

enhancing digital connectivity (PM-WANI) and digital inclusion (PM-DISHA)

Feedback

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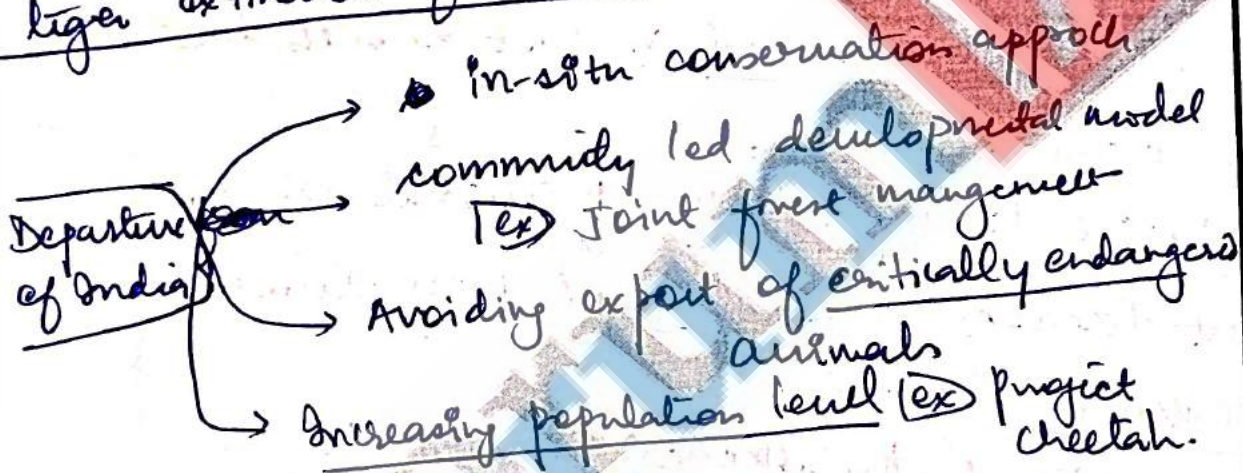
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Q.4) Project cheetah marks a departure from India's efforts for conservation of various critically-endangered species. In this perspective, do you think the reintroduction of major fauna that has gone extinct is justified? (10 marks, 150 words)

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)

India recently reintroduced 8 African cheetah from Namibia after over 50 years of legal extinction from India.



India has introduced cheetah for reintroducing the genetic line of big female cats.

As the perspective justified?

YES

① Genetic variability increases in India in carnivore family.

- (2) Environmental significance - the 'ecological niche' is refurbished
- (3) prevent inbreeding depression in animals

However challenges - which makes it unjustifiable

- (1) Over 3 cheetahs died in last 2 months due to climatic problems
- (2) Canine distemper virus, animal related gut diseases and lack of prey causes weakness
- (3) possibility of intraspecific competition and man-Animal conflict.

The notion of reintroduction is environmentally sustainable. But retrofitting of ~~the~~ 'cheetah niche' must be carried out with diligence.

Feedback

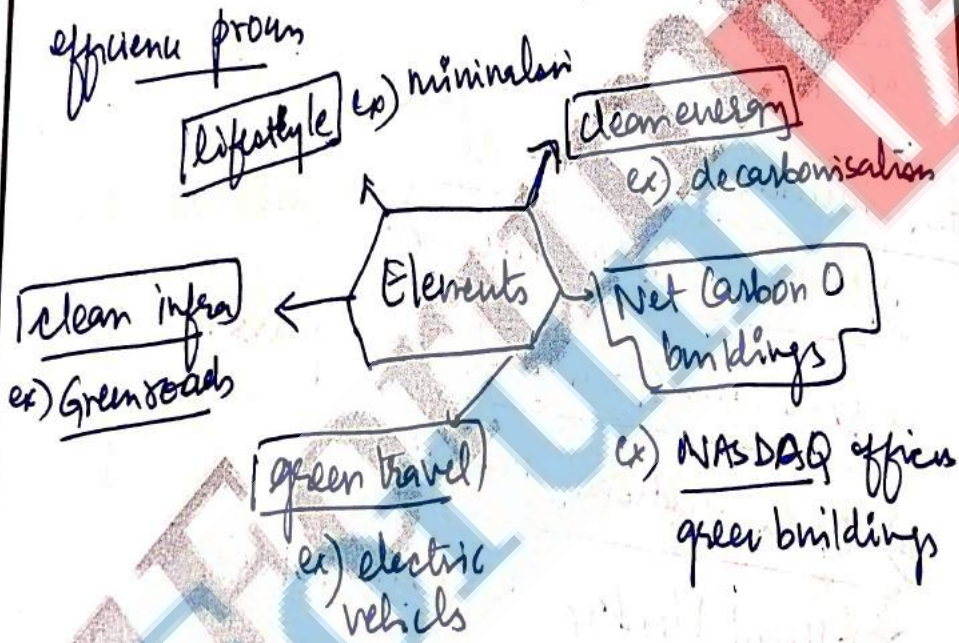
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TOTAL MARKS	

Q5) 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 is called as the growth of the country being driven by renewable energy resources for a sustainable & energy



Propelling of Green Growth

① Gati shakti multimodal connectivity - focus on reduced emission, watershed development

② Budget 2022-23 :—

- ① MISHTI + SAMME for mangrove led economy for coastal region
- ② HARIT SAGAR guidelines - for port lead development
- ③ Green highway - removing asphalt lead & road construction
- ④ 'Shree Anna' - Millets cultivation (regeneration of soil)

③ Other initiatives -

1) National Infra Pipeline

2) Sovereign Green bonds for 5 years.

3) Green Hydrogen project

4) Ethanol blending - to reduce CO_2 .

Green Growth is necessary and critical to

achieve the PACHAMRIT targets and fulfilling our climate INDC's.

Feedback

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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)

India is among the top 10 urbanised nation in developing nations where possibility of 40% by 2037 (UN PFA)

Unplanned Organisation

- ① encroachment of land
- ② overpopulation
- ③ dingy & dusk colony
- ④ overused transformers
- ⑤ illegally constructed factories at home.
- ⑥ old structures
- ⑦ interconnected houses

Fire safety hazard

- ① Risk of fire related disaster increase
- ② A single spark can destroy a lot
ex) Delhi fire (2020)
- ③ fuse short circuit,
No ventilation
- ④ quick spread of fires.

Mitigating ~~fires~~ fires in cities

- ① short circuit fuse whenever voltage spikes to prevent main circuit from blowing up
- ② water sprinklers, fire extinguishers and fire exits.
- ③ National Building Code 2016
 - 1) fire prone safety designs
 - 2) evacuation routes
 - 3) decentralised grid system
 - 4) automatic system control

~~But~~ Urban fires are result of governance failure - hence over urbanisation & encroachment to be avoided.

Feedback

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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)

Modern warfare has crossed the domain of land air and sea and it has transformed to cyber, psychological and space.

Role of intelligence in maintaining national security

(I) Capacity to overwhelm adversary

- 1) defence indigenisation with Project 75
- 2) Hybrid warfare capability
- 3) Band of ethical and credible hackers
- 4) counter disinformation
- 5) surgical strikes via drones

(II) Ability to nip threat in bud :-

- 1) counter intelligence operations (COIN)
- 2) saving from Advanced persistence threat (APT)
- 3) offensive-defensive strategy

- 4) Attack in case potential danger
 - 5) Regular patrolling
- ex) USA's strategy - army of submarine in Pacific to prevent Chinese invasions

Challenges

- 1) Infrastructural investment (over 8-9% of GDP is needed)
- 2) Spill over effect (possibility of misdeeds high)
- 3) Technological gaps (vis a vis developed nations)
- 4) ~~less~~ ~~less~~ Weak indigenous market & critical infra system. \Rightarrow CERT in telco in per year - 120% increase in attacks.
- 5) Awaras of modern warfare is yet to be explored. \Rightarrow space warfare - a niche domain for India.

Situational Awareness with effective intelligence network is needed to counter the threat (possible or malign) from the start itself.

Feedback

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Q.8) Highlighting different kinds of cyber threats 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 the computer based violent activities done to hamper the critical aspects of national security.

Types

- 1) Fraud & identity theft - (ex) Golden Bery (2011)
- 2) cybersnooping into any electronic device (ex) Pegasus
- 3) Distributed Denial of service (DDoS) (ex) stuxnet
- 4) Malware & Adware persistence threat - (ex) Wannacry & Petya
- 5) Backend data collection (privacy) (ex) Huawei row
- 6) Money trapping - cyber phishing and digital (ex) DRDO scientist & honeysnapping
fakes
- 7) Deepfakes from darkweb (ex) manipm violence
- 8) revenge porn, online 'bedrooms' and
online propaganda (ex) ISI

Q9) Money Laundering
the state

status of cyber security framework:-

- 1) Legal - IT Act 2008, National cyber security policy
- 2) Institutional - NIC-CERT-IN, I4C (critical infrastructure), ~~Multi~~ Multiagency Centre
- 3) International - CIPAI, ~~MOU~~ MOU & with regional partners
- 4) Organisational - Cyberspace data Kendra

Challenges

- 1) Attacks of Indian infrastructure has increased
- 12,400 attacks per week (CERT-IN 2023)
- 2) inter departmental coordination is missing -
with siloed approach.
- 3) No clear policy (lots of flaws on National cyber security policy)
- 4) deep fakes & deep webs mushrooming
ex) Manipuri violence

Cyber security needs a multilayered approach with organisational separation and cyber hygiene and deterrence at forefront.

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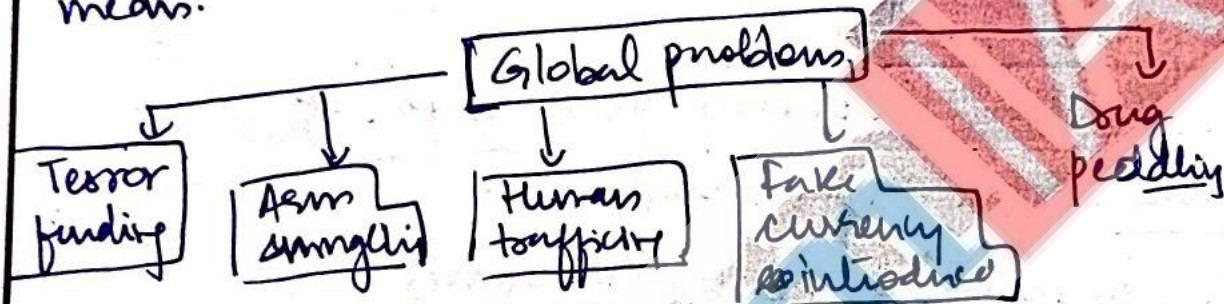
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TOTAL MARKS	
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Q.9) Money laundering is a global problem that cannot be solved by isolated responses. Discuss the statement and also suggest ways to curb the menace. (10 marks, 150 words)

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

Money laundering is a process of integrating black money to whitewash money by unscrupulous means.



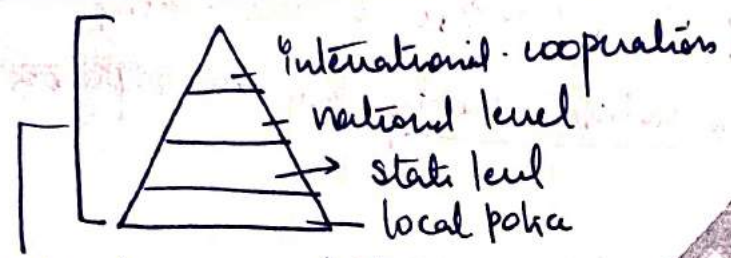
isolated responses

- denationalisation (2016) was aimed to stop fake currency (but as per RBI - 99% of money came back)
- Asset freezing of various criminals and gangsters but dark currency & bit coins remain international border drug trade goes unnoticed.
- few of international responses of FATF, SCO, G20 but hardly giving desired results

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Q.10) Assess the rele
natural hazards

Steps to curb:-

① Multidirectional & multi layered approach



coordination is needed

- ② transboundary involvement and transfer of
account (ex) Vijay malya
- ③ New Areas of deep web, videogames and
cyber security tools to be addressed
- ④ Awareness to citizens as well about the issue
- ⑤ collective problems of trafficking, drug, arms,
(man) have a roots in money laundering
and it must be addressed properly.

Money laundering needs a 'multivector'

approach and dealing with it requires
necessary steps of cooper

Feedback

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



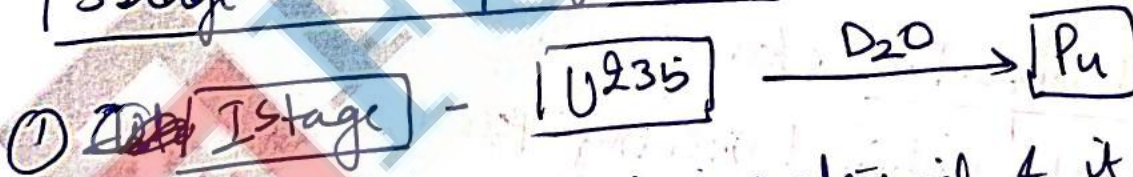
Q.11) Though often presented as a panacea to the dichotomy between development and ecological conservation, nuclear technology has multitude of other uses. Briefly explaining India's three stage nuclear program, throw light upon various applications and challenges associated with nuclear technology in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

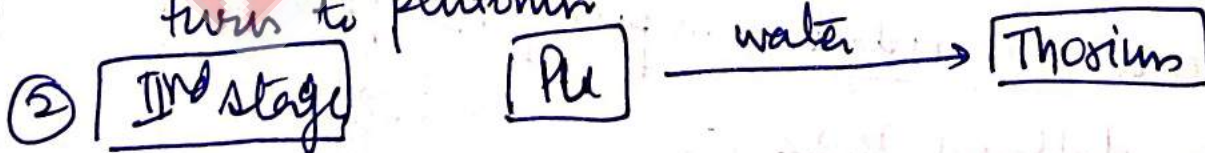
India currently accounts for 2.1% of energy developed from Nuclear energy at 6780 MW.

There has been a dispute of environmental influence (post Fukushima) & liability problems of company which has stalled India's nuclear programme. However 3 stage programme is at thrust.

3 stage Nuclear programme :-



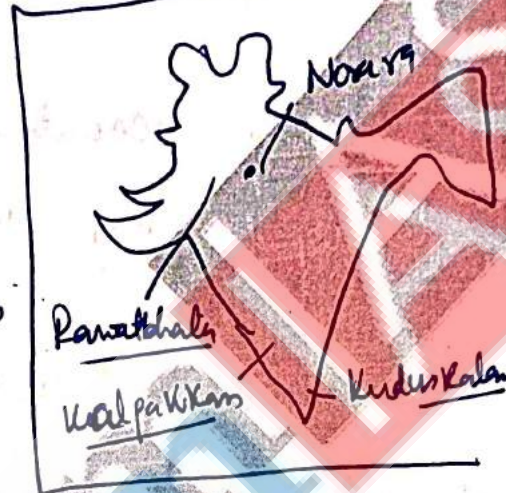
Here Uranium is the raw material & it turns to plutonium.



'Fast breeder' - the plutonium is the raw material

③ IIIrd stage with Thorium as the raw material
which utilizes Uranium & ~~Thor~~ Plutonium
by continuously feeding

India is planning to increase
the capacity to 23 GW
by 2030 by 180 minireactors



Applications of Nuclear Energy

- ① Also sound availability of energy (unlike solar & wind - which are dependent on natural)
- ② focus on Nuclear research, medicine and drug creation
- ③ Reduced dependence of Coal & petroleum (in decarbonisation & meeting Paris climate targets)
- ④ Decrease Oil budget of imports, (ex) \$100 billion dollar (2022)

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⑤ Research and development of nuclear tech.
ex) IISc achieved a 'critical temp' using nuclear tech

⑥ International collaboration - 'ITER', CERN etc
⑦ Nuclear weapon criticality - 'strategic defence'

Challenges

① issue of toxicity & waste disposal - heavily contamination for man & environment

② Technology transfer issue - India not a member of NPT or NSG

③ Political will & anger of public (ex) protest in Jaipur.

④ Land acquisition for project remain collection
ex) ESZ norms 2023 made more strict

⑤ Civil nuclear liabilities problems

'nuclear technology' is critical for India to achieve and fast breeder reactors are need for defence, energy & research purposes.

Feedback

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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)

Nanotechnology is manipulation of matter at $(0-100) \times 10^{-9}$ meters for their applications in various fields

As per Richard Feynman's experiment the nano scale should be in at least in one direction (or one scale) - this leads to



Nanotechnology has a lot of potential for socio economic development of nation.

① Health sector

- 1) Robotic surgery (nanorobots)
- 2) implants (carbon nano tubes)
- 3) absorption of toxins (nanogels)

2) / Agricultural /

1) Nano pesticides to for reducing the overuse
of chemicals

2) Nano-urea (IFFCO) for reducing soil
alkalinity and enhancing productivity by
2000%.

3) Nano sensors coupled with AI tech
to control amount of water.

3) Defence sector uses nanorobots and
nanofillers, which can act as micro-
soldier in rigid terrain.

4) disaster management & environmental

ex) Nano sponges - bio remediation

Nano transmitters at deep sea ocean

for tsunami prediction

5) Industrial level

1) Quality control & value addition

ex) Nano certification

2) supply chain resilience

ex) AI lead Nano robots

- ⑤ Research & development
- 1) Investment of startup - (ex) \$406 billion attract by 2030 for Rnd.
 - 2) New areas of development (ex) cancer treatment, gene editing developed



~~What India's needs is a~~ graded investment in Nanotechnology
 create a 'culture of innovation' and
 enhancing the scalability of projects

Feedback
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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 त्रिकड़ी है जो पर्यावरण के साथ-साथ अर्थव्यवस्था के लिए अपरिवर्तनीय प्रभाव डाल सकती है। स्पष्ट करें। (15 अंक, 250 शब्द)

As the world moves towards warming atmosphere the regions of oceans are not untouched. The world temperature is rising at 0.6°C/decade (IPCC) and effect on ocean.

Warming ocean temperature with 1950-2020 the temperature has risen by 1.02°C it had a lot of problem.

Environment - loss of wildlife (like fishes, molluscs, crinoids & whales)

Marine heatwaves in the South Atlantic is exacerbating

Economy -> loss to 'fisheries sectors' as 'eutrophication' increases

ex) - Harmful algal blooms and
'dead zones' of hypoxic conditions

② Oxygen loss due to higher CO_2 the carbonate
ion formation increases leading O_2 decline

Environment impact → died plants &
animals in deep sea ocean.
ex) kelp and seaweed lost

economic impact decline in productivity
of ocean derived products - fishes,
sea urchin

③ Ocean Acidification

Environment impact - shallowing of
carbon compensation depth (CCD) leads
to loss of corals (coral bleaching)

economic impact - leads to loss in
marine based industries like mangrove,
fisheries and muddying of water

Steps to be taken

① Decarbonisation of oceans

- 1) Blue sequestration methods.
- 2) Bio remediation
- 3) Green energy projects \Rightarrow Biosock technolgy.

② Green infrastructure & pollution prevention

- 1) MISHTHI & SAIME to reverse the ocean pollution
- 2) Haridraga guideline for green coastal development

③ International collaboration

- 1) Blue Carbon Initiative
- 2) MARPOL & London Convention

A multilateral approach with international cooperation is needed for reversing the increasing CO_2 & warming of oceans - further upholding the SDG (13) climate change & SDG (14) life under 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)

Recently - Patna (2023 May) Delhi (June 2023)
And Bangalore (September 2022) were faced
with One of the highest & worst levels of
urban flood (water ~ 2 meters above sea level)

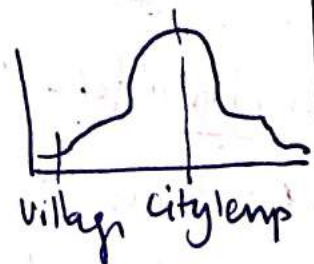
Factors of vulnerability of Indian cities

1) Planned urbanisation

- 1) 68% of Mumbai & 79% of Delhi has unplanned construction (BCM 2021)
- 2) drainage & sanitation is blocked.
- 3) overpopulation on resources

2) Climate Change

1) Urban Heat Island Effect -



huge temp increase

2) flash floods in the regions due to
rainfall

3) uneven monsoonal challenge

3) Governance failure

- 1) appropriate planning measures not upto mark
- 2) river water harvesting & sewage not prepared.

Mitigation & management strategies1) NDMA guidelines

- ① Demarcation & hazard zonation of areas
- ② flood proofing (with architectural & natural processes)
- ③ Removal of unplanned encroachments.
- ④ clearing drainage 2 months prior to rainy season.
- ⑤ Early warning system
ex) Doppler radar system upto mark
- ⑥ Vulnerability mapping of areas with critical areas to be rehabilitated.

Other suitable strategies

- 1) urban forestry (can prevent flash floods by acting as reservoir)

can study. China made over 15,000 urban forest (2004-2015) declining flood capacity by 80%.

② sponge cities with aquifer management, rainwater harvesting.

③ Local interventions - with focus on pollution management, waste disposal and minimalist use. Ex: Singapore model

Steps taken by Government

① Dopple weather Radar and GIS mapping

② Smart cities mission, Nagar Van scheme (200 forests), Miyawaki cultivation

③ AMRUT scheme with incentives for cities retrofitting

④ Mission LIFE for a sustainable lifestyle.

Urban flood can be solved by a multistakeholder

and decentralised approach under SDG-11

(sustainable livelihoods) with principle from Sendai framework.

Feedback
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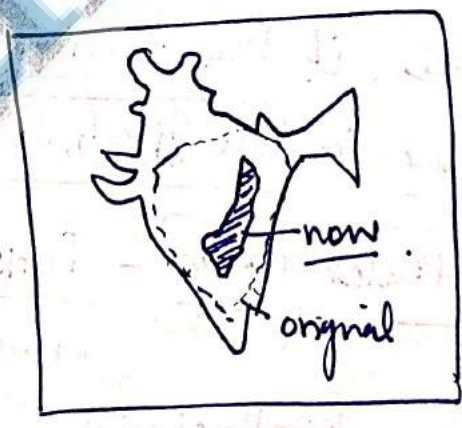
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Q.15) Though Naxalism is showing a downward trend, it is not only thriving in its core areas of influence but also changing its form. Analysing the reason for its retreat, underline the factors behind its continuance. Also, discuss measures towards 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। (15 अंक, 250 शब्द)

Naxalism - is a left wing extremism movement in India - tracing its roots to Naxalbari movement. It gains motivation from an armed revolt - (inspired by Mao).

It has been showing a retreat:-



⊗ Factors for its retreat -

over 79% decrease in violence against security forces and 83% of Maoists have surrendered in last 20 years. - the factors are:-

Reasons :-

- 1) Operations - Steeplechase (1991), bastaria, operation grey hand
- 2) Government initiative - with SRE (Suresh Kumar Shah), HIMAYAT & ROHINI
- 3) Local intervention ex) Lonavatta (Telangana) Sandesh, Anadswar (Bihar) where Maoist villages led to elected gram sabha.
- 4) strict police action - ERP, GIS mapping

However, it has been thriving, continuing and evolving - in Chattisgarh, Jharkhand

- ① Splinter groups - Totiya samiti & LNS group emerged
- ② Increased attacks on armed forces
ex) Sukhna Attack (63 dead)
- ③ Urban Naxals emerging
- ④ Ideological support from Nepal, China, IS & Khalistan too!
- ⑤ Involving on dark web, internet to attack crowd.

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Eliminating LWE altogether - a multilayered

approach

① Governance reforms - ① PESA & FRA upheld with revision

② LARR-2013 with compansion

② socioeconomic development

1) human capital development

ex) NK Base - 'tribal complex' upheld

2) connectivity with major cities

③ technological usage

1) GIS mapping of 'Red corridor' in Bastar

2) Multiagency Centre SOP on IED detection

④ Counter intelligence with strict vigilance

1) counter radicalisation

2) 'surgical strikes' on basis

3) Drone surveillance

GK Killai committee had reiterated that a multistakehold approach with long term oriented

solutions to solve this problem.

Feedback

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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)

As per IPCC & WMO. Climate change will lead over 800 million people as climate refugees with most vulnerable sections being women, children & disabled.

Most marginalised are most affected

- 1) Women in India - walk over 5 miles (NSSO 2011) to fetch water due to drying of local wells
ex) problem of water wires in Maharashtra
- 2) Serbs in Sahel Region - loss of 8 man hours has led to decrease in diet as the prey population has declined. (in Hausa & Xhosa community)
- 3) Coastal regions
 - ex) Newfoundland region - over \$ 200bn dollar yearly loss
 - Warming oceans → declining fish population → loss of economic activities

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- 4) Polar & subpolar regions with Inuits & Eskimos are losing diet due to decline in seal population as sea water declines.
- 5) Disaster induced displacements -
post-Toshinaka landslide - 5000 families
 of migrants sent back to native land.
- 6) Intergenerational poverty trap begins -
climate resilient model of development which
 includes mitigation & adaptation is needed:-

Mitigation measure :-

- 1) Vulnerability mapping protocols in disaster
 resilient models.
 ex) Doppler weather radars for flood management

- 2) Climate change urgency awareness
 ex) decentralised approach by Sendai
 framework - decisions at ground level.

- 3) Traditional knowledge utilisation for creating
 a resilient model
 ex) Jehad, Eri method of water conservation

④ Nature based solutions with Miyawaki's cultivation method to mitigate issue of heat waves.

Adaptation measures

- ① Quick rehabilitation & settlement models
ex) Japanese wooden homes.
- ② Minimum damage approach
ex) GAGAN warning system
- ③ Cost effective & long term adaptive solution
ex) sponge cities.
- ④ Empowered people to quickly react to disaster
ex) NDRF & SDRF working in consonance

The climate based resilient development should be all inclusive in nature with focus on maximum possible lives saved & minimum loss.

Feedback

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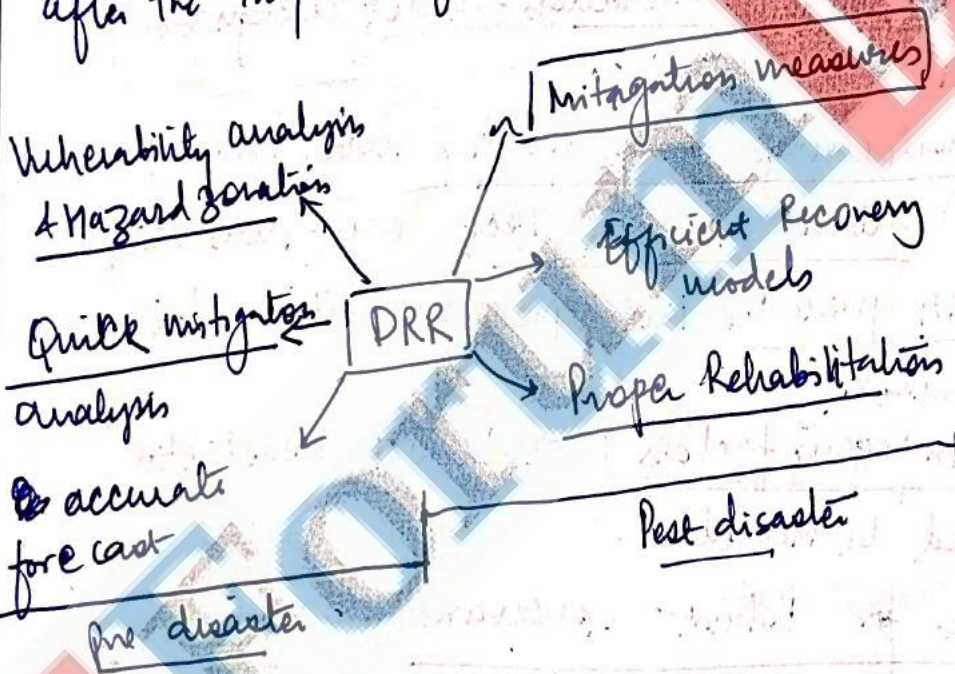
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Q.17) A multi-sectoral and multi-tiered process, Disaster Risk Reduction (DRR) is beset with a plethora of constraints. Identifying these constraints, recommend measures for building a robust DRR strategy. ✓
(15 marks, 250 words)

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)

Disaster Risk Reduction is a process of reducing the impact of disaster - before & after the impact of disaster.



constraints of disaster risk reduction :-

- ① Improper planning
↳ lack of fund availability for tech approach
ex) - Doppler weather radar delay of 3 yrs.
- ①-2 interdepartmental coordination issues
ex) weather, MORD, NDRF don't work in coord.

② ~~Reactive~~ Reactive & Not Proactive approach

ex) Over 120 Urban flood issues - 60,000 lines impacted but no major steps

③ Local level awareness absent

ex) with over 1000 deaths in Bihar every season due to flooding - disease, suicides

④ Recovery & rehabilitation - is not enough to cater large population

⑤ Climate change & other upcoming issues ignored

ex) Urban heat island effect, locust issues etc

⑥ NDMA guideline test upto mark with Sendai Framework

⑦ Anthropogenic factors & accidental disasters should be included.

Measures for Robust Governance:-

① Planning and zonation level - a timely and technological solutions for DRR to be taken

② Inter departmental coordination for quick response & recovery of post disaster impact

③ Proactive disaster governance:-

ex) SPONGE cities to reduced impact of

disaster

- ④ Nature based solution - are cheap, sustainable and conventional as well.
- ⑤ Local participation is critical for pooling community resources during drought.
- ⑥ Technological intervention with NAVIC, GAGAN to be integrated with micro sensors
- ⑦ Recovery & Rehabilitation - with Capacity building and upholding conservation model.
- ⑧ strengthening NDMA, SDRMA, NDRF & SDRF for a holistic focus on disaster governance.

DRR is a critical step to uphold the disaster governance of any country. Best practices can be taken from countries like Japan & Cambodia to uphold the disaster resilience in India.

Feedback

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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 रेखाएं) 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)

Manipur violence of 2023 between Kuki & Meitias has exacerbated the faultlines of major challenges topped by ethnic fault.

Why ethnic lines are major threat [MANIPUR in special]

- 1) 3 major ethnic lines - Nagas, Kuki & Meitias. Kuki are plain dwellers & Meitias are hill dwellers.
- 2) demand of ST status by Meitias & intense reaction by Kuki.
- 3) Anti-poddy drive in Manipur - where fields of Kuki are destroyed.
- 4) Meitias can't buy lands of Plains but Kuki can buy land in hills.



This has led to intense reaction

Other ethnic fault lines

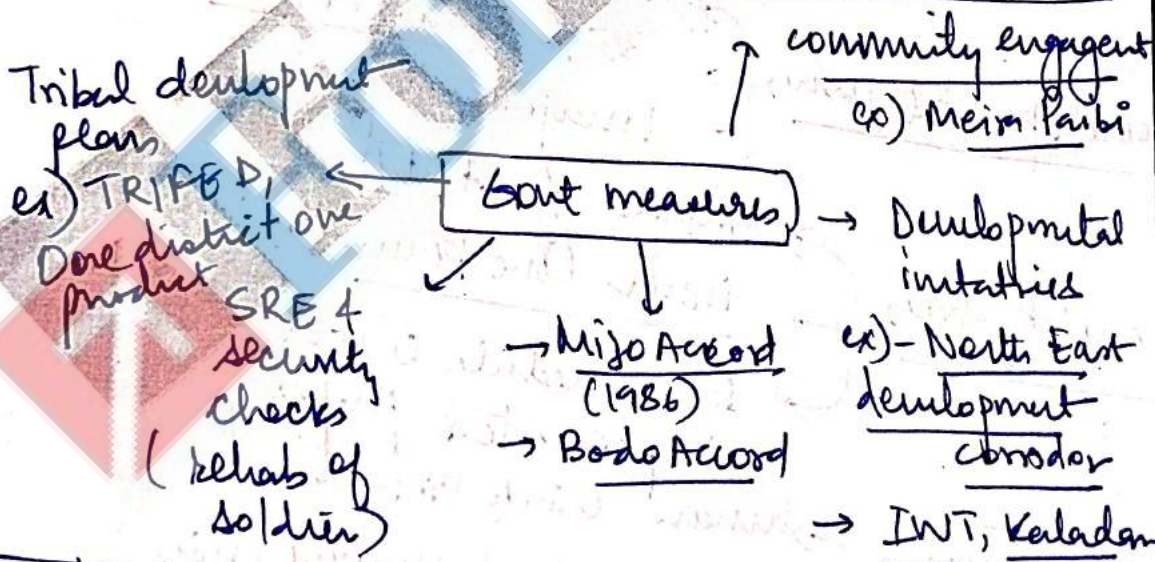
- ① supranational insurgency → Bodoland region
- ② secessionist & separatist → of Nagalim & Tripuraland.
- ③ Tribes - no tribes → Kuki vs Naga, Naga vs Khasis.
- ④ Border area challenges → ~~Golden~~ Golden Triangle. drug trafficking

Other challenges

- ① Geographical areas → digged terrain
separated from mainland
- ② Developmental issues → porous boundary
40% area digitised
35% is non notorable
1 major airport
- ③ security focus → excesses of AF&PA
inner line permit violation
6th schedule is not implemented properly
- ④ People concern → human rights violation
insurgency & migrant crisis
communal tension

Solving that challenges of North east

- ① **XAXA committee** - 6th schedule implementation with more areas under ADC given.
- ② **NK Base (1970)** - reservation to the locals in government jobs & prevent encroachment of tribal lands.
- ③ **Bezbaruah committee** - Racial discrimination votes against North easterners should be criminalised.
- ④ **Supreme court** - diluting the provision of AFSPA and making it more strict towards police men



A light but tight regulation is needed for the north eastern region focusing on development.

Feedback
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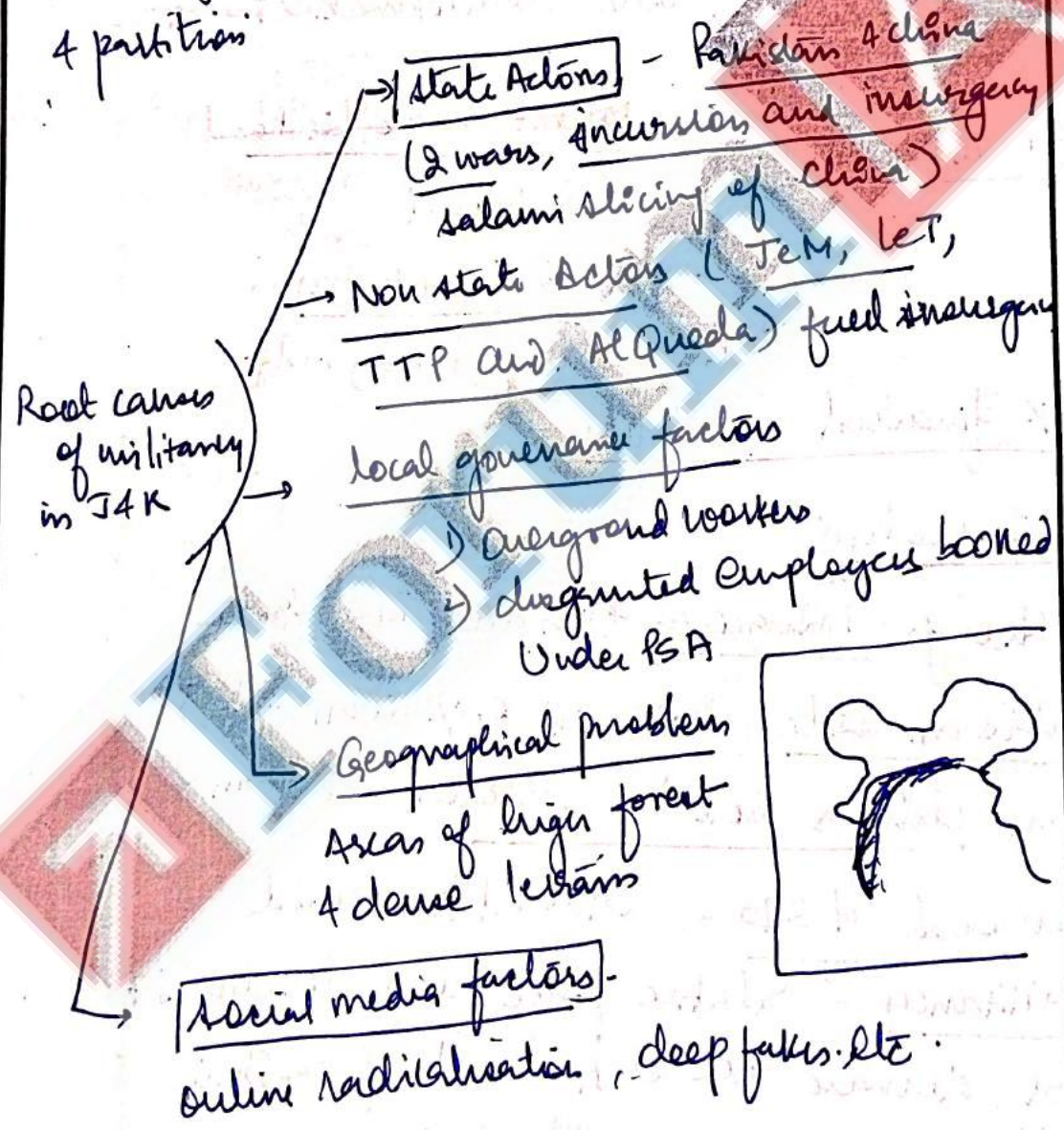
Please put tick marks in the above table.
Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.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 विकासवात्मक पहल की भूमिका का आलोचनात्मक परीक्षण कीजिए। (15 अंक, 250 शब्द)

Jammu & Kashmir has suffered a lot of challenges in post 70 years post independence & partition.



Developmental initiatives

- 1) Art 370 Removal it has created UT of Ladakh & Jammu & Kashmir (with parliament)
- 2) 8000 Crore grant in 2019 for highway construction.
- 3) Mission Saffron, and developmental initiatives of HMMAYAT
- 4) Developmental -
 - daulat Beg Oldie Road
 - Atal Tunnel
 - Over 38 different passes
 - High level railway bridges
- 5) 1% financial devolution

Critical analysis

- 1) Although insurgency has been down from Pakistan side (decline in 80% than 2010) but China's role has increased (Galwan)
- 2) Removal of 370 - disturbed the armed militancy - relative peace and deradicalisation but demand for state hood of Kashmir risen

(Don't Write anything in this Area / इस स्थान पर कुछ न लिखें)

(Don't Write anything in this Area / इस स्थान पर कुछ न लिखें)

ForumIAS

② Tourism in J&K has increased with heavy footfall in Ladakh region.

④ challenges that are new - [OGW] hybrid militants and internet suppression are still causing trouble to the youth

③ shell firing & ceasefire violations reduced post 2019 surgical strikes.

[Way forward]

1) Madhukar C committee - Border infrastructure is a must for upholding the peace & prosperity

2) Amritable Nattoo panel - demilitarisation → dialogue ↓ decentralisation
 ↑ denotification

3) Infrastructural development with cultural matrix respect.

J&K needs a mix of hard & soft balance and policy of development and community engagement (like Village defence Guards) is an important step.

Feedback

(For OFFICE use only)

#	C	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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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 the~~ is the new software based on neural networks which can read, write and analyse text and provide solution in a real time framework.

(ex) ChatGPT, Google BARD,

- Functions
- ready made solutions
 - graphic designing for industrial components
 - paper designing, scope analysis
 - business plan making with font, calligraphy and routine paperwork

Case study 1: Google Bard has integrated GPT 4.0 to deep web to make immersive experience.

Case study 2: Metaverse tourism has audio guided virtual ~~tour~~ tour with

Concerns

- ① Elon Musk - it may render human useless
- ② cognitive impairment -
- ③ loss of jobs and innovation
- ④ dehumanising sectors and ~~step~~ towards automation
- ⑤ Overdependence issue
may lead to loss of Knowledge economy

Challenges

- ① digital divide to access information
- ② privacy issues -
lead to attractive data ~~loss~~ spillage issues
- ③ it may attract negative biases of humans
- ④ infrastructural barriers.

Policy makers & Regulatory body:-

- ① Digital firewall over over dependence on usage of AI Technology.
- ② Defense & Critical Industries to be avoided from purview of generative AI
- ③ school education, ~~check~~ innovation section should be made outside purview

- (4) A data policy about what kind of data to be stored & what to be avoided
- (5) Community engagement must be there

AIPT technology is a double edged sword
 and it must be used cautiously with sufficient safeguards.

Feedback

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TOTAL MARKS