

TEST CODE 6 1 3 2 0 2

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

Time Allowed : Three Hours

समय : तीन घंटे

Forum IAS

Maximum Marks : 250

अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	Yash Vignan		
Roll No./अनुक्रमांक	1910086978	Medium/माध्यम	English ☒ हिंदी ☐
Center Code/परीक्षा केंद्र		Date/दिनांक	18/08/2023

*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		
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1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet.

कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।

2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory.

उत्तर पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।

3. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।

4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided.

उत्तर प्रदेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।

5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off.

प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।

Total/कुल अंक

250

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Examiner's Discretion/मूल्यांकन कर्ता का विवेक :

Start Time/प्रारंभ करने का समय :

06:00 AM

End Time/समाप्त करने का समय :

09:00 AM

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, प्लोचार्ट, तथ्यों और आंकड़ों का समग्र रूप किये अन्य विषय वस्तु जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आये क आशय पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।

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EG/ईजी :

① ② ③ ④ ⑤

Evaluation Date/
मूल्यांकन तिथि :

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EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

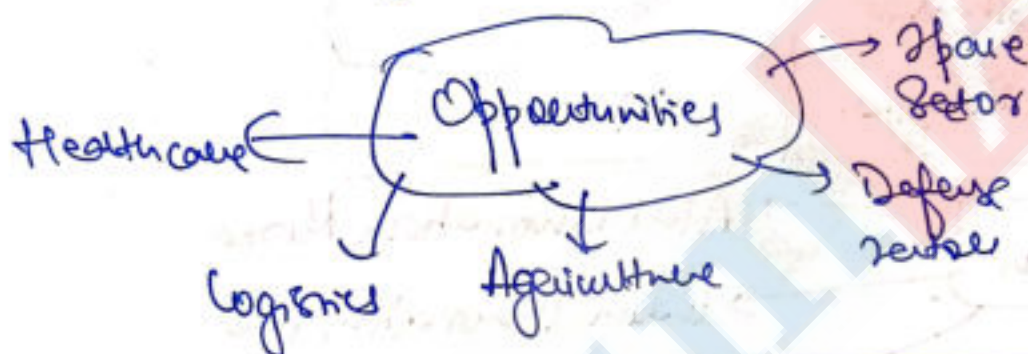
1. **AWIS = Answered What is Asked.** This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first place. 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) 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 को लोकतांत्रिक बनाने की आवश्यकता है। विश्लेषण करें। (10 अंक, 150 शब्द)

India ranks 40th in Global International Innovation Index

Shows India's capability in STEM sector as the focus of government is increasing



Need to democratize :-

① Poor women representation

② Poor expenditure on Research & Development as compared to others.

③ Industry-academic gap

Should focus on

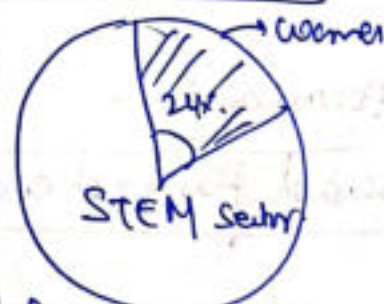


fig: Gender Representation



Committee highlights the gap due to skill mismatch.

- (1) Regional variations: Number of universities across state varies widely leading to general democratisation.

State	No. of university / lakh student
Bihar	7
Telangana	67

Steps taken

→ Atal Innovation Mission

→ India Innovation Fund

→ National Science & Tech and Innovation Policy

way forward:-

- (1) Sharma Prasad Committee: Increase industry-academia linkage

- (2) Bridge regional divide by Competitive Federation (India Innovation Index)

Recently, India presented Amrindhan National Research Foundation Bill, 2027 to increase focus on STEM

Feedback

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#	①	②	③
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)

India is vouching for indigenization in defence sector as evident through 'Defence Acquisition Procedure' 2020

Remains Achilles heel :-

① Import defence : As per SIPRI, India was the largest defence importer between (2018-2022)

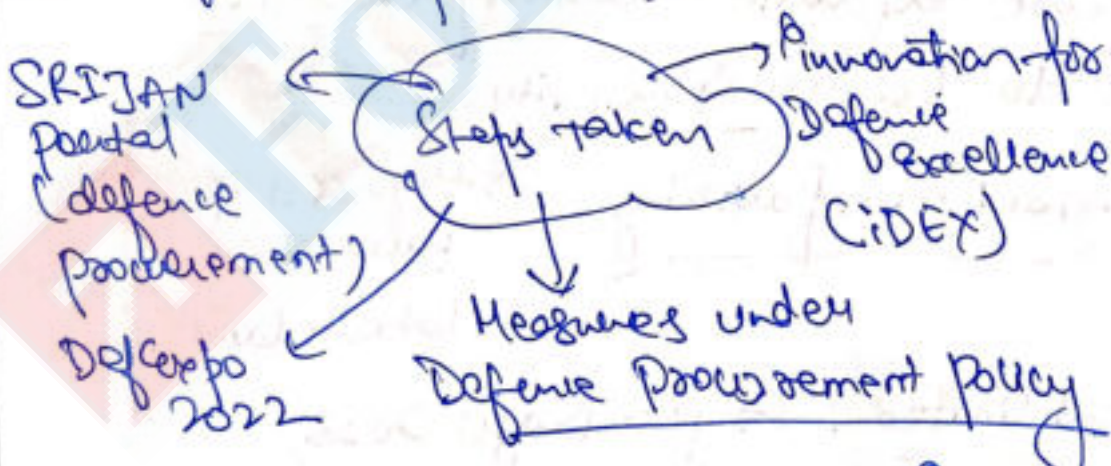
② Defence need : India is among top 5 defence expenditure country in 2022 due to border sensitivity.

③ Stagnant manufacturing → high cost of production
→ labour laws

④ Export limited : As per Budget 2023, India's defence export was just ₹ 16,000 crore.

Importance of Defense Startup

- ① Encourage employment in the sector.
- ② Improve Scale of production
- ③ Incentivize Research & Development to develop state-of-the-art technology
- ④ Reduce cost of manufacturing
- ⑤ huge scope of startups to make high profit
- ⑥ Develop India as defense exporter
- ⑦ high multiplier effect.



Thus, to make India Atmanirbhar in true sense, we need to go "Vocal for local" in defense.

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.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 Infrastructure is the system or platform which works to provide essential public services to the people or citizens by government using Digital public goods (open source software).

Introduced in India to save money, information, data in 2009 with first introduction of Aadhaar.

Indispensable for citizens:-

- ① Health Infrastructure
 - National Digital Health Mission
 - Ayushman Bharat Digital Mission
 - e-VIN and e-Killdeer
- ② Education
 - PM-eVIDYA (multimodal education)
 - ABHYAS platform and PUSTI web
- ③ Banking infrastructure
 - NPCI built UPI
 - IMPS

④ Women Safety → SHE Box for grievance related to sexual harassment

Meeri Saheli App

⑤ Business → Gati Shakti Digital platform
ONDC
e-way Bill for GST

Challenges:-

① Exclusion → 22% beneficiaries missing from NFSA in Chhattisgarh

→ Exclusion caused under PM Jan Aashirya Yojana

→ Digital Haves vs Digital Have-nots

② Exploitation → Breach of privacy
State Surveillance using data (eg. Pegasus)

③ Monopolisation → Control and monopoly of State
→ Nexus between big corporate houses and State

Thus, National Data Governance Policy is launched to ensure rational and judicious use of DPI

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			

Q4) 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 विस्तृत हो चुके प्रमुख जीवों का पुनरुद्धार उचित है? (10 अंक, 150 शब्द)

Project cheetah is world's first major translocation project of a wild big cat animal from southern parts of Africa to India.

Departure from earlier efforts

- ① Environment protection Act, 1986 focus on existing environment
- ② wildlife protection Act, 1972 had primary role of safeguarding animals under various schedules
- ③ Biological Diversity Act, 2002 also had the role of safeguarding rich biodiversity and transferring benefits to local communities

thus, project cheetah is seen as a departure from safeguarding critically Extinct species

(Rationale behind re-introduction)

- Benefits**
- Coexistence will be boosted
 - Increase Survival by extending habitat
 - Top predators the environment Conservation
 - Aid local community development
 - Flag ship species → restore grassland

- Challenges**
- highly expensive project
 - Cheetah dying due to technology eg. Radio collars
 - Adaptation to Indian climate
 - limited range. eg. Kuno palpur has just 75 km² area
 - Cheetah hunt in day. the risk of man-animal conflict
 - Conflict with top predators

Thus, a Cheetah Reintroduction Steering Committee needs to be pro-active and function to rectify challenges and reclaim the 'glory of grasslands' through cheetah

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.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)

(Budget - 2023) vouched for Saptarishi
to guide India in Ameritkal and
"Green growth" was one such pillar.

Green Growth : Benefits

- ① Sustainable development : Help to
balance economic growth with environment
lagged.
- ② Transition towards Renewable sources :
India ranks [67] in world Energy
Transition Index, this will get boost.
- ③ Develop employment ecosystem around
the ecological resources in long-term
Sustainable way.
- ④ Protecting species and habitat (Article 48(A)
and Article 51(A)(g))

- ⑤ Fulfill International commitments
under → UNCED
 → UN CBD
 → Nationally Determined target
 → Panchsheel goals

Green Growth: Budget 2023-24

- ① PM-PRANAM :- to move towards alternate, eco-friendly fertilizers

- ② National Green Hydrogen Mission :-

- 5 million metric tonnes by 2030
- 8 lakh crore investment
- 6 lakh employment

- ③ MISTRI : protect mangrove and related sustainable habitat

- ④ Amrita Dharohar : Sustainable wetland ecosystem

Thus, 'Green Growth' is in line of Sunderlal Bahuguna's idea of 'Ecology is permanent Economy'.

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 कोड 2016 के विशेष संदर्भ में शहरी अग्नि को कम करने के उपायों पर चर्चा करें और सुझाव दीजिए। (10 अंक, 150 शब्द)

Recent Incident of fire disaster in Mukbaare nagari, Delhi in 2023 have raised fire safety concerns in urban India

Vulnerability Reasons :-

- ① Unplanned urbanization : haphazard urbanization leads to poor planning of cities and housing patterns.
- ② Lack of fire safety protocol : Many district have not planned such protocols as advised by NDAP
- ③ Improper implementation of fire safety Sops due to lack of awareness, negligence
- ④ High population density in tier-1 cities

⑤ Slums: the condition is even worse in urban slums

⑥ Lack of sprinkler systems, fire alarms, exit door facilities

⑦ Underground facilities in cities for parking, library, shops often violate

National Building Code, 2016

① Mandatory fire safety gears: ceiling, roof door, etc

② Ensure proper fire safety audit.

③ National Building code mandates separate SOPs for school, hospital, malls, etc

④ Mandatory separate exits and early warning

⑤ Installation of fire bell, fire alarm, sprinkler.

Cities construction should also adhere to GRHA and Greeno Rating

Feedback

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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 बहुत 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)

India's rank is [13] in Global Terrorism Index and rank [10] in Global Cyber Security Index showing vulnerability in national Security

Role of Intelligence for national Security:-

- ① Gather information : It allows to map threat perception and meaningful information of enemy
eg. Pegasus
- ② Check espionage : To prevent country from outside espionage activities
- ③ Modern day warfare : Modern day attack is on Cyber Security and critical infrastructure.
eg. Red Echo bombing power sectors.
- ④ New tech based attack : Use of internet to

demand ransomware.

Eg. Ransomware report 2023 highlight increase of 23% in ransomware cases.



Way Forward

1. Develop Integrated information sharing platform for Coastguards, Army, Navy, Air Force.

2. Use of local community - eg. "Puggies" of Gujarat

"Data is the new oil". Thus, Information harnessing is key to national security.

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)

India's rank is 10 in Global Cyber Security Index shows India's vulnerability towards cyberthreats.

Kinds of Cyberthreats:-

- ① Ransomware:- It is demanding online ransom by blocking access to device and data.
As per Ransomware report 2023, there is rise of 23% cases in 2022 than 2021.
- ② Piracy:- Data piracy by breaching Intellectual Property Rights
- ③ Social Engineering:- by manipulating people to release their critical data
- ④ Phishing:- Personal data and information is leaked and encrypted.
- ⑤ Denial of Service:- the user of the device is

denied to access the service.

Current Status of Cyber Security framework



Challenges

- ① Over-arching laws are yet to be implemented
- ② police are not trained to tackle such issues
- ③ Lack of digital infrastructure awareness in rural areas
- ④ Emerging technology like IoT, Blockchain are making it difficult to comprehend

Thus, India has amended rules and proposed Data Privacy Bill, 2023 to further boost its efforts.

Feedback

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TOTAL MARKS			

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 process of making illegally earned money appear legal in front of financial authorities.

Placing $\Rightarrow$ Layering $\Rightarrow$ Integration

fig: process of money laundering

Global problem: can't be solved in isolation

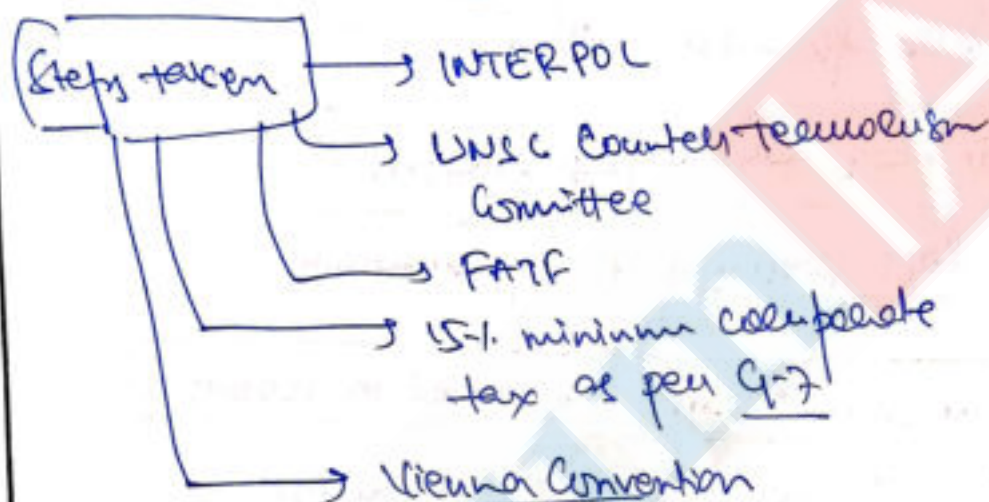
① Tax havens - Several global tax havens helps corporate giants towards money laundering and avoid trapping. eg. Cayman Island

② Soft State - Several countries have weaker law enforcement agencies and flexible laws aids in money laundering. eg. Venezuela

③ Linked with organised crime: - UNOWC highlights link of money laundering

with Drug Trafficking.

- ④ Arms Sale: Money from hawala transactions as used in arms trade as per FATF



way forward for world:-

- ① Collaborative approach to setup conference of parties on lines of UNCTC for money laundering
- ② Easy extradition of offenders
- ③ Effective use of G-20 as a platform to generate consensus
- ④ Homogenised financial laws, define 'Black money'
- ⑤ Strengthen FATF and INTERPOL

India has separate laws like FEMA, Prevention of Money Laundering Act, 2002 to check money laundering

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.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)

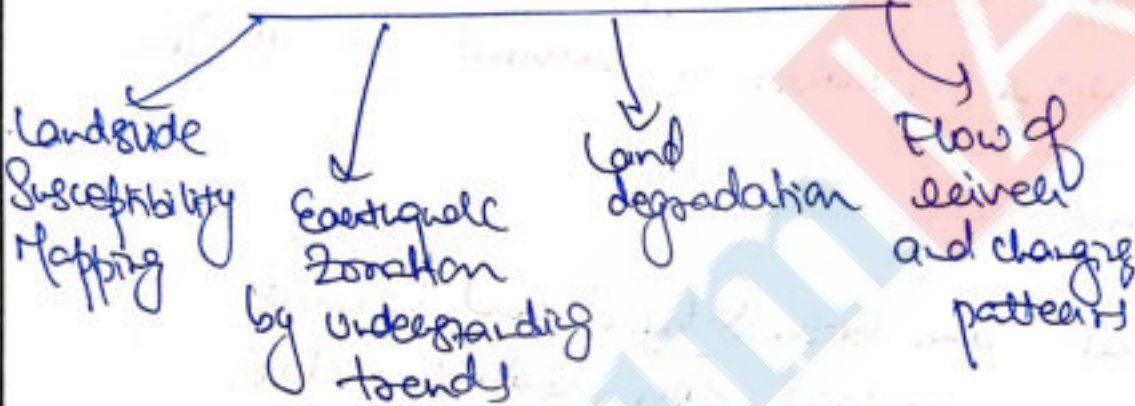
NISAR or NASA-ISRO Synthetic Aperture Radar is a joint mission of India and USA to send an aperture radar at low Earth orbit of around (300-400) km.

Relevance

1. It will have both S-band and L-band frequency radars for detailed picture.
2. It will complete its one cycle in 12 days to analyze cryogenic changes.
3. Its radars will help to generate pictures of shore-line changes across the coast-line.
4. India's Antarctic facility will also be observed to find the impact of Climate Change.

5. Synthetic aperture radar can penetrate clouds and dark light as well to get clear picture.

6. Disaster Management can be helpful as its data can be used for



7. NISAR will be helpful in evaluation of permafrost thawing and rising sea levels over the years.

Thus, this 2800 kg aperture radar will be launched from Jatun Thawan Space Centre in 2024 to realize its space goals and strengthen India-US space tie.

Feedback

(For OFFICE use only)

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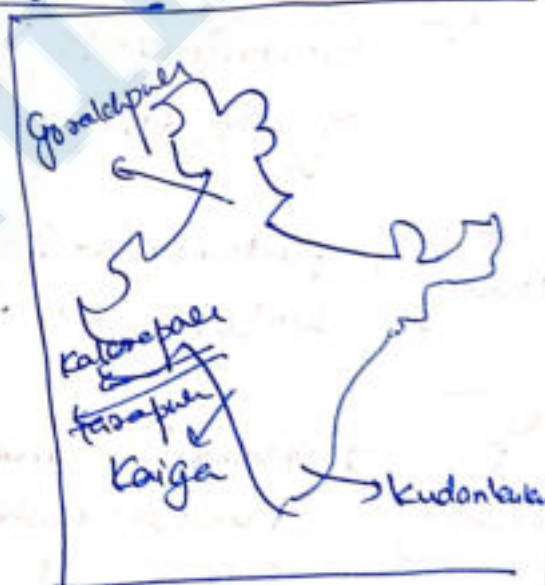
Q.11) Though often presented as a panacea to the dichotomy between development and ecological conservation, nuclear technology has multitude of other uses. Briefly explaining India's three stage nuclear program, throw light upon various applications and challenges associated with nuclear technology in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

हालांकि अक्सर विकास और पारिस्थितिक संरक्षण के बीच द्विभाजन के लिए परमाणु प्रौद्योगिकी को समाधान 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)

Nuclear power constitute 6750 MW energy per year through 22 nuclear plants which contributes 1.6% of India's overall energy requirements

Three stage nuclear program :-

① 1st stage :- Pressurized heavy water reactor uses natural uranium to produce plutonium 239 . D₂O (Heavy water) is used as coolant and moderator.



② 2nd stage :- Fast Breeder Reactor utilizes plutonium-239 and forms Uranium-238 fig: Nuclear plants

③ Thorium based reactor : advanced nuclear power system for utilization of thorium is the 3rd stage

This three stage program was designed by Homi J. Bhabha. Presently, India is on its 2nd stage.

Application

1. Energy - Energy is harnessed to provide electricity to household, industry, offices, etc.
2. Space Sector → Plutonium-238 is used in robot-gears of space.
3. Deep Sea Mission → Several submarines use nuclear power to stay submerged.
eg. INS Arishtant
4. Industry → For quality inspection and checking operational utility, nuclear

Energy based devices are used.

5. Pharmaceuticals → for drug delivery, checking efficacy of drugs and manufacturing of medical devices like X-ray machines.

Limitations

1. Nuclear waste: Nuclear fission releases Americium, plutonium which is carcinogenic.
2. Slow decay: waste is not easy to decompose.
3. Social opposition: protest against Kudankulam plants.
4. Risk of Nuclear disaster: Fukushima disaster in Japan.
5. Fusion technology: unable to harness properly.

Nonetheless, India is part of ITER, France to aid harnessing of 'Nuclear Fusion' energy which is much cleaner.

Feedback

(For OFFICE use only)

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Here G is Good, A is Average and P is Poor.				
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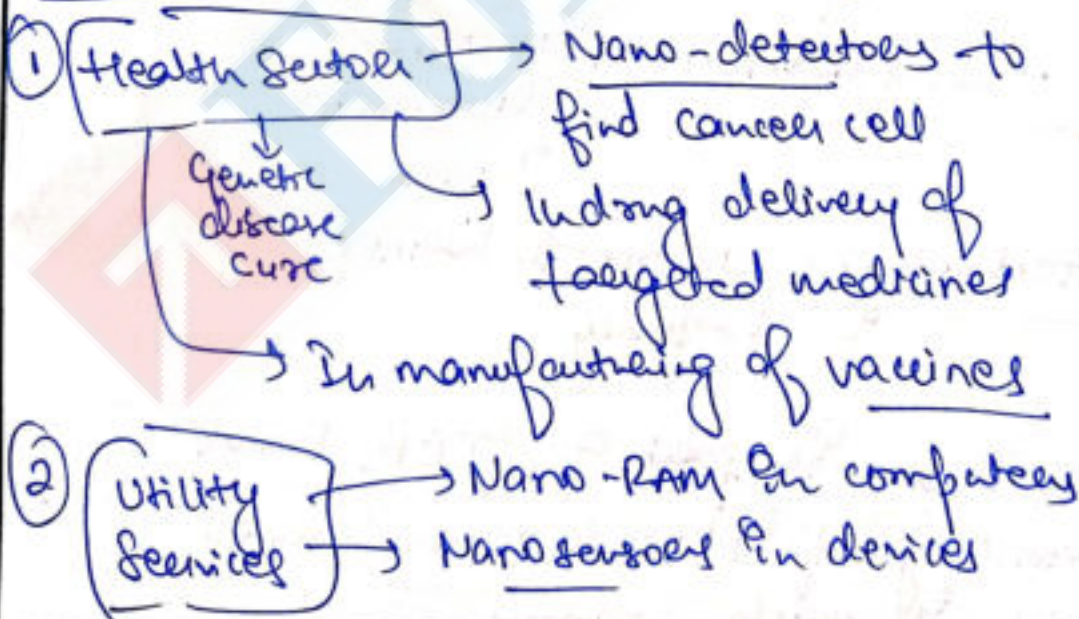
Q.12) What do you understand by nanotechnology? In what ways can nano-technology aid in socio-economic growth of the country? (15 marks, 250 words)

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 a field of scientific research and innovation based on 1nm - 100nm scale proposed initially by Richard Feynman.

Nanotechnology is the use of applied science by altering the size of products, elements, goods for alteration in chemical, magnetic, optical, physical properties.

Application for socio-economic growth:-



③

Agriculture

- Nano fertilizers are used to increase yield of fertilizers
- Gold nano bacteria to increase soil quality
- Use to reduce maturing period
- Nano sensors are used for mapping of agriculture lands
- for Food fortification and increasing value of micronutrients

④

Transport

- reducing Greenhouse gas emissions
- Increasing efficiency of vehicles by enhancing fuel performance
- production of biomass fuel

Challenges associated:-

- ① Hazardous to health: nano-pollution effects health due to nano-pollution.

- ② Nano divide : Enhance existing fault lines of haves and have nots
- ③ No regulatory body for effective control of usage.
- ④ Lack of supporting infrastructure denies the scale of production
- ⑤ Harm plants : cytotoxins, genotoxins, phytotoxins due to nano-particles.

Steps taken

Research in IIT Bombay
on Nano-Science
Nano Mission, 2007

Way Forward

01. Enhance R&D on Nanotechnology
(presently only 0.7% of GDP)
02. Develop supporting infrastructure and regulatory body.

India presently rank 3rd in total number of nanotechnology publications. Thus, we need to go in existing line.

Feedback

(For OFFICE use only)

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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.

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

IPCC Sixth Assessment Report highlights that unequivocal impact of climate change on oceans and irreversible repercussions

Ocean warming

Ocean temperature has increased to 0.9°C from 1950 and is increasing at faster rate in 21st century than 20th Century.

Ocean warming has impacted the coastal communities as they are migrating towards temperate region and facing economic burden of \$1 trillion in loss 5 years (UNDRR)

Oxygen loss

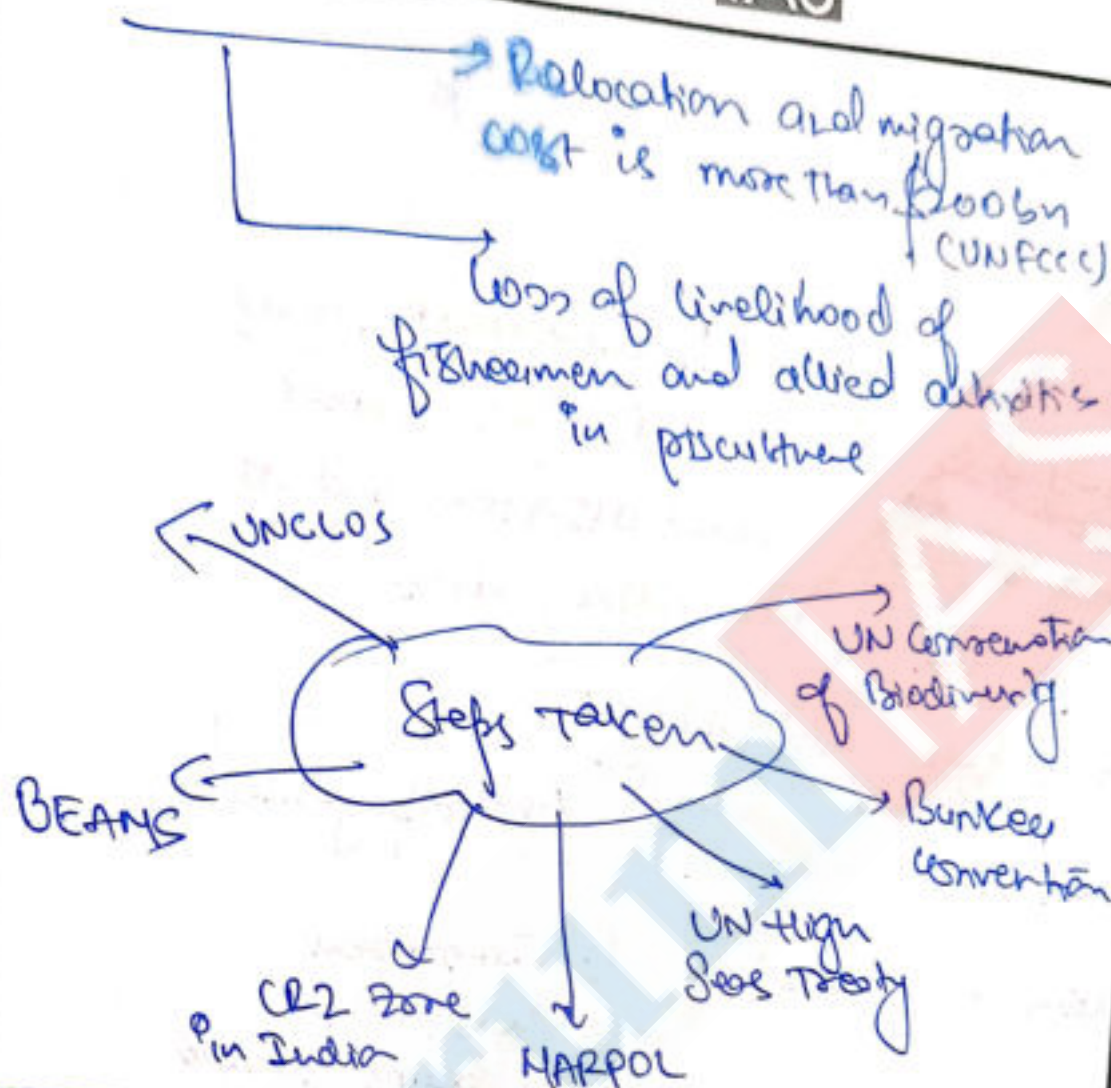
- harming the symbiotic relationship of corals
- Effecting sex ratio
eg. Green sea turtle has now 99% female
- Seaweeds and Seagrasses are deteriorating in numbers harming the food chain.

Oxygen acidification

with every degree of increase in ocean temperature, pH value deteriorates by 0.1.

Acidification is harming sea mammals, fisheries sector and coastal animals habitat

- Economic burden → Small island countries are worst hit
- Countries are changing capital due to sea level rise. eg. Indonesia



Way Forward:-

- Encourage most countries to join BBNJ
- Adhere to 30x30 target set by UN CBD
- Strict adherence to NDCs under Paris Agreement
- Climate Finance by Global North to Global South

Adhering to sustainable measures will help to achieve SDG-14 Life Below Water

Feedback

(For OFFICE use only)

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TOTAL MARKS			



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 सुर्घ्यता को बढ़ाते हैं। शहरी बाढ़ पर राष्ट्रीय आपदा प्रबंधन प्राधिकरण (NDMA) के दिशा-निर्देशों के आलोक में, उपयुक्त समन और प्रबंधन रणनीति पर बर्बा करें। (15 अंक, 250 शब्द)

Recently, urban floods in Bangalore (2021), Hyderabad (2020), Mumbai (2023) shows the menace of natural disaster and its Scale of impact in urban lives.

Factors for vulnerability :-

Natural

- ① Melting of glaciers
- ② Increasing sea level causing floods in coastal cities
- ③ Shifting course of rivers
- ④ Drying of wetlands, lakes, pond.
- ⑤ Topography

Anthropogenic

- ① Improper construction of dams (weeds Bank)
- ② Lack of proper drainage system
- ③ Concrete floors
- ④ Overcrowding and lack of planning
- ⑤ Unsustainable tourism

Suggestions by NDMA :-

- ① Develop National Hydrographic data for Early warning system.
- ② Localized setup of information dissemination
- ③ Rain gardens should be developed across urban flats to absorb.
- ④ Each and every Urban house should have Rain water harvesting system.
- ⑤ Deploy doppler weather radar
- ⑥ Annual pre-monsoon de-silting of river beds is required



Fig: Urban flood planning.

Other steps taken :-

- ① 'Kasturba Badli Aayog' has been Setup
- ② NDMA has laid a detailed plan for disaster mitigation.
- ③ Construction of embankment
- ④ NDRF and National Disaster Relief Fund is established

Way Forward:-

1. China's "mobile walls" concept can be followed for urban areas
2. The 'sponge cities' concept can be utilized to absorb excess rainwater
3. Ministry of Housing and Urban Affairs should setup Urban Flooding Cells
4. GIS based categorization based on threat perception

As per ASIS report, 50% of India will live in urban area post 2040, thus, urban flood needs to be checked under SDG-15.

Feedback

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

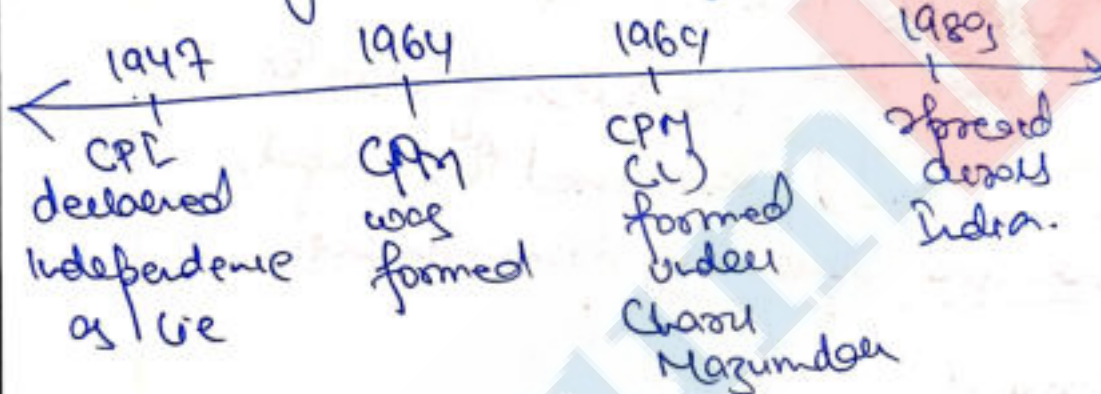
TOTAL MARKS

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 कारकों 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 an ideology of far left wing of political spectrum which has reformist, socialist agenda based on violence.



Showing downward trend

As per Ministry of Home Affairs, 76% reduction in cases since 2013:

Only 25 districts in India are now affected.

Reasons for retreat :-

01. Poverty and Inequality: Still after 75 years, more than 20 crore Indians are

below poverty line and Oxfam shows that 1% Indians holds 40% of income

02. Regional divide: Huge East-West divide and it is only widening

03. Urban rapals: A class of intellectuals living in urban areas and supporting violent idea of rapalism.

04. Influence of Mao Zedong: The idea of Mao Zedong Sanctioned in Nepal, China and spreading from there.

05. Historical Injustice & Resource Exploitation

: There is acute historical injustice as state have exploited forest resources from tribals and denied any benefit to others.

Changing its form:-

① Linked with Organized crime: NSA Ajit Doval has cautioned regarding it

- ② Use of technology: use of new age technology like IOT, Blockchain by elites of navals.
- ③ Upgraded weaponry as per aspects of NIA.

Measures for elimination :-

- ① National Strategy to counter Left wing Extremist (2015)
- ② SAMADHAN doctrine
- ③ Demonetisation
- ④ Aavadar Development project (Aurangabad)
- ⑤ Offensive strategies



fig: Naval influence

→ Greyhound (Andhra Pradesh)
→ Operation Green Hunt

Feedback

(For OFFICE use only)

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TOTAL MARKS				

Way Forward: Have a synergized approach of development and deterrence by using technology to curb India's decade long internal security threat.

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 समन और अनुकूलन उपायों को एकीकृत करता है। (15 अंक, 250 शब्द)

IPCC Sixth Assessment Report highlights that the impact of climate change is not uniform and impact different socio-economic strata differently.

Marginalized impacted:-

① Women: Meidula Singh Study on Rajasthan found high impact of women due to desertification and land degradation due to climate change leading to average walk of 1.5km and "water-wives" Syndrome

② Tribals: Their land is encroached and resources are extracted harming their lives

③ Poor Countries: Small island developing

Countries faces the issue of sea level rise, deoxygenation harming their habitation and livelihood as fishing gets impacted.

④ **Global South** : As per **UNDP**, Global South will bear \$ 1.2 trillion every year due to impact of climate change.

⑤ **Class divide** : Climate change will further the division of haves and have nots as seen by the Syndromes of 'Urban heat island' and 'Underground climate change'



Climate resilient model :-

① Climate Reparation : Global North has to give funds to Global South for historical environment injustice.

② Renewable Energy Carbon Certificate trading mechanism has to be developed

③ Being majority of countries under "CDRE" for disaster resilience.

④ Promote alternative fuels

- Flex fuel
- Green hydrogen
- Ethanol Blending

⑤ Adherence to International Commitments under Kyoto - Montreal Protocol.

⑥ Vouch for "Global Citizenship" and "Unified Liability"

India have in G-20 called for "One Earth, One Family, One Future" to realized true essence of SDG-13 (Climate Action)

Feedback

(For OFFICE use only)

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TOTAL MARKS			

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.

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 holistic process of detection, prevention, mitigation of disaster and ensuring capacity building and resilience by the community

Constraints associated :-

- ① Identification and Detection delays : Majority of the times, disaster can be prevented but can't due to delay in detection.
- ② Capacity Building : Misappropriation of funds as per GRE Report leads to failure in capacity building
- ③ Power Infrastructure : Sendai Framework has highlighted power infrastructure in vulnerable zones (coastal, hilly) increasing impact

④ Impact vulnerable : UNDP states that poor, women, refugees, migrants are the worst sufferers

⑤ Focus on short term plans : Government fails to plan and implement long term measures.

Steps taken

1. Sardai Framework (2015-2030) has planned a holistic roadmap for disaster risk reduction
2. National Disaster Management Act, 2005 has laid bodies like National Disaster Management Authority (chaired by PM) and Crisis Management Committee (chaired by Cabinet Secretary)
3. Plans for specific disaster
 - a) Drought = International Drought Resilience Initiative

b) Cyclone = National Cyclone Risk Mitigation Project

c) Flood = Rashtriya Badh Ayog

Suggestions for Disaster Risk Reduction:-

① 2nd ARC - Role allocation and decentralized approach of Disaster management

② Sudai Forumware :- Involvement of local communities and traditional knowledge

③ Ranichopea Committee :- ban on construction in sensitive areas

④ Pre-Disaster → Capacity building & focus on disaster resilience infrastructure
DM Planning, role allocation

⑤ During Disaster → Rehabilitation, sheltering
Logistics for food, medicine

⑥ Post-Disaster → Socio-psychological support
Help to rebuild assets

To save India's \$1 trillion by 2030, India needs to implement these plans.

Feedback

(For OFFICE use only)

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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 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)

North East has been a vulnerable and sensitive area ever since Independence due to entangled colonial history.

Ethnic fault lines

Recent division based on Meithei vs Kuki in Manipur highlights the heterogeneous ethnicities and their exclusivity against each other.

Consideration of Meithei as Scheduled Tribes and extending reservation to them antagonized Kuki as people already enjoys majority and fair representation in education and employment.

Other ethnic fault lines:-

① Conflict between Mizo and Bou and associated issues in resettlement of Bou

In Tripura.

- ② Antagonism against migrants due to separate ethnicity. eg. Chakmas in Assam and protest.
- ③ Opposition to CAA, 2019 in Tripura and Assam due to apprehensions against Bangladeshi.

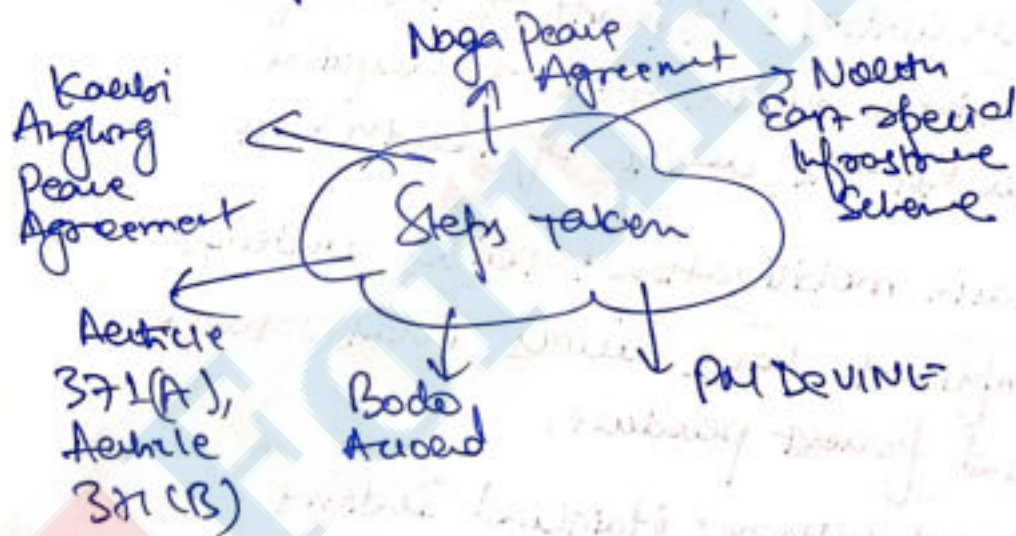
Other factors

1. Political control: Majority of the conflict are driven by the quest to acquire power in the arena of North East.
2. Resource mobilization: Tribes undergo conflict to have access over resources and forest products.
3. Different history: Mainland Indians consider different history of North East leading to separation.
4. Autonomy: There have been several such demands. eg. Greater Nagaland,

Bodoland, separate Kaibi Anglong
etc.

5. Golden triangle: UNOWC highlights the
organised crime of drug trade
nearby the region in Myanmar.

6. Cross-border: Assam Army and
extremism (USINCK) exploits the rough terrain
and porous borders.



way forward: -

Effective use of Inter-state Council (Article
263) and Zonal Council for cooperative
federalism and holistic development.

Feedback

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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 तनाव/आतंकवाद के मूल कारणों को संबोधित करने में विकासवादी पहल की भूमिका का आला-
चनात्मक परीक्षण कीजिए। (15 अंक, 250 शब्द)

In J&K, Article 370 has been
abrogated in 2019 and 'J&K Reorganisation
Act, 2019' was introduced for
people's integration with Union of India
and dividing state in 2 union territories
respectively.

Steps for Development:-

① Extension of several rights

Right to Education

Right to Information

② Several government schemes will now
be applied in J&K as well:

- PM Jan Arogya Yojana
- PM Kisan
- PM Kisan Sikkh Yojana

③ Benefits of 4th pay Commission will be
extended to employees.

④ National Food Security Mission will also be extended to J&K.

Positives

1. Radicalisation has diluted by 19% as per Ministry of Home Affairs in 2022 as compared to 2016.
2. Youth is getting channelized towards employment and productive work.
3. Empowerment of women of J&K as several rights extended to the region.
4. The startup ecosystem, tourism of the place and financial inclusion is also getting boosted in J&K.
5. Safety and security can be understood that killing of paramilitary forces and army by terrorist has reduced by 46% since abrogation of Article 370.

Negatives

01. Rise of hybrid militants and background militants
02. [NSA] Ajit Doval has cautioned for the increasing trend of cyber attack and linked recruitment by Al Qaeda and Jemohammed online.
03. De-radicalization process is been effected as democratic decentralization has not taken place fully
04. Non-cooperation of local political parties eg. Gupkar Alliance.
05. Internet shutdowns have harmed the trust on government

Way Forward:-

- ① More steps in line of "Operation Mha" and "Operation Sadbhav" to build the trust
- ② Create more employment opportunities for youth

Kashmir's integration in swift manner is key for "Ulabalea Setu Sabalea Nizam"

Feedback

(For OFFICE use only)

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Please put tick marks in the above table.

Here 0 is Good, 3 is Average and 4 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 नि्यामकीय 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 use of Artificial Intelligence based by Deep Learning, Machine Learning, Data algorithms to create audio, text, video in similar cognitive way of humans
eg. Chatgpt, Bard

Concerns and challenges:-

- ① Ethical concern: the very idea of an application doing and creating work of humans raises several

Socio-ethical concerns-

- ② Job losses: McKinsey Report, 2023

stated that Generative AI will take away 11.2% of jobs in the world by 2031.

- ③ Reliability: The output is as good as the input.

Since the Internet is filled with
fake news and misinformation,
reliability of response is missing.

- ④ Human touch lack : Despite technological advancement, human touch can't be separated.
- ⑤ Racial bias : Ethno-centric responses and prejudiced based on darker races can be seen.
- ⑥ Digital have and have nots : It will create a digital divide in the society and widen existing gaps in technology.

Steps taken to tackle the challenge:-

- ① NITI Aayog has launched "AI for All" to democratize the use of AI and Generative AI.

② RAISE 2020: a platform to discuss collaboratively the implication, future of AI by including government, academicians, industrialists, etc.

③ Global partnership on AI: a global alliance for fair, just and progressive use of AI.

Suggestions for future:-

① A Conference of parties like body for regulation and governance of Generative AI, on lines of UNFCCC.

② Industry-Academia linkage for skill development in AI.

③ Data source of Generative AI needs to be checked by stakeholders to negate any misinformation.

④ Regular update of data.

⑤ "AI authority of India" should be formulated.

To achieve SDG-9 (Industry, Innovation, Infrastructure) Generative AI governance is important.

Feedback

(For OFFICE use only)

#	Q1	Q2	Q3
AWIS			
CD & VA			
S & P			
F & R			
Please put tick marks in the above table. Here G is Good, A is Average and P is Poor.			
TOTAL MARKS			