



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**

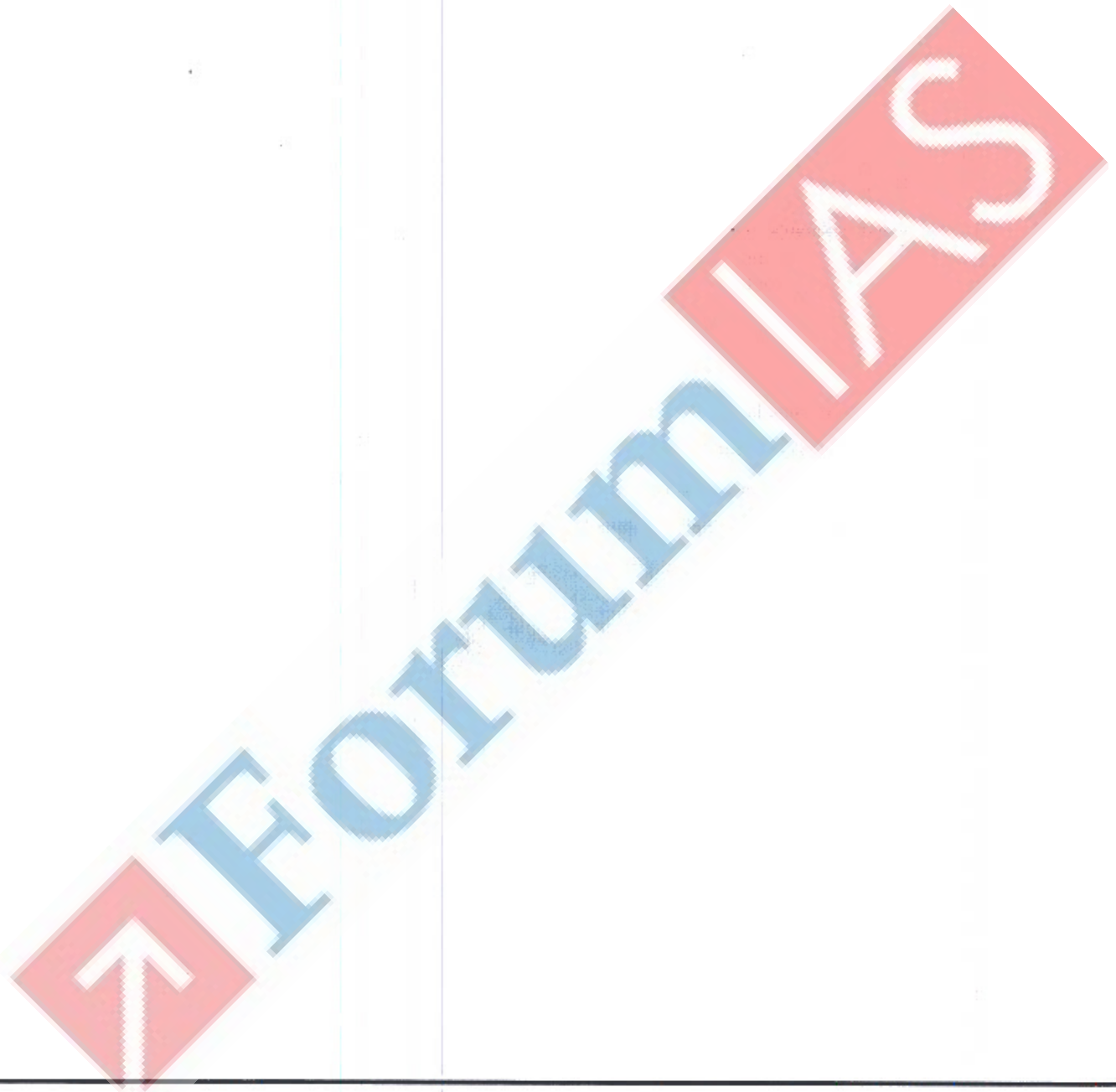
Name Of Candidate परीक्षार्थी का नाम	SHAHDA BEGUM S.		
Roll No./अनुक्रमांक	1910091018	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	1901	Date/दिनांक	27/8/23

*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 : 2 : 20	End Time/समाप्त करने का समय : 5 : 20	
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन <input 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, फ्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।			For Office Use Only / केवल कार्यालय प्रयोग हेतु		
			ECN CODE/ ईसीएन कोड :	EG/ईजी : ① ② ③ ④ ⑤	Evaluation Date/ मूल्यांकन तिथि :

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 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)

The STEM sector becoming a recent force multiplier in creation of knowledge by digital economy.

Opportunities provided:-

(i) Increasing Digital economy size of the country

200bn\$	→	2023
1tr\$	→	2025

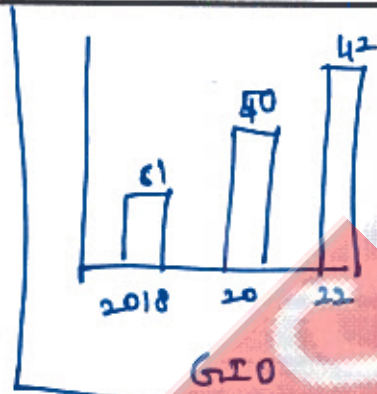
(ii) Global leader in manufacturing by production (eg) Make in India.

(iii) Increasing potential in space sector (eg) Chandrayan - III - setting edge technology.

(iv) Increasing performance in Global Innovation Index

Need to demeritise :-

(i) Women account only 18% of STEM jobs.
(graduates 42%)



(ii) Increasing digital divide between rural & urban area.

(iii) Inadequate education to backward classes in STEM

(iv) poor skilled manpower

Measures taken :-

(i) Atal Innovation mission \Rightarrow STEM from school.

(ii) Vigyan shakti — for women STEM education.

(iii) Increase expenditure in R & D (only 0.7% GDP).

Thus STEM sector crucial to realise

5th economy by 2024-2025

Feedback

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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 sector is considered to be a public good, yet Defense indigenisation is still ^{shows} a weak potential in India.

Defense indigenisation — Achilles heel:-

(i) SIPRI report ⇒ India and largest importer of defense equipment.

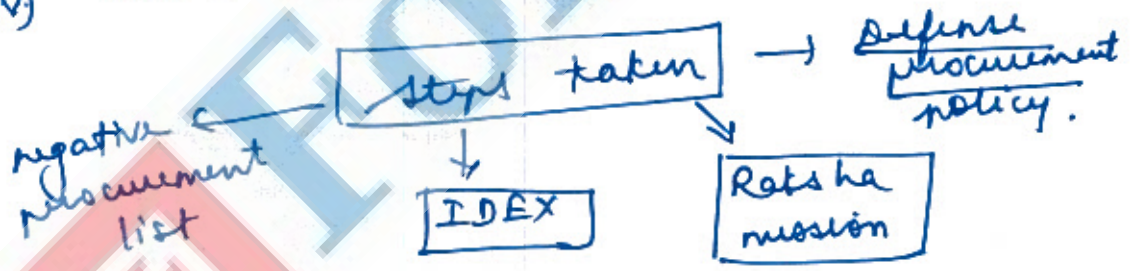
(ii) High reliance on US, Russia, France for high end technology

\$400 - Russia
Rafael - France

(iii) Issue of nation security due to communication goods import.

Importance of Startup:-

- (i) Bringer in new technological development.
eg) Ashok Leyland — automobile component
- (ii) DRDO — focus on Research & development.
- (iii) Increases the make in India prospects
eg) similar in space sector — Agnikul
- (iv) Reduces Import by 30%. (no defense)



Amanatkar in Defence sector by is sine qua non for National security

Feedback

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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)

DPI (Digital Public Infrastructure) is a public good which enables to create inclusive digital knowledge economy.

DPI \Rightarrow digitally enabling citizens:

(i) JAM trinity \Rightarrow financial inclusion by 52%.

(ii) e-sanjeevi \Rightarrow democratized the health benefit

(iii) Pme-vidya \Rightarrow digital education infrastructure.

DPI \Rightarrow business:

- GST-network
 - SWIFT
 - e-way bill
 - e-KYC norms.
 - e-loans
- \rightarrow \uparrow ease of doing business.

Challenges:

i) Exclusion

more than 50% not included in Financial Inclusion.

High digital divide
 ≈ 50% rural ⇒ no phone.

ii) Exploitation

High corruption

Cyber threats & crime.

online frauds

iii) Monopolisation

no level playing field

affects small business

90% e-commerce ⇒ few MNC
Amazon, Flipkart.

Steps like:

- Bharat Net
- ONDC

internet for all
 ⇒ platformless digital commerce.

→ VPI Lite / VPI 123 ⇒ helps in creating inclusive, by open DPI for all.

Feedback

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TOTAL MARKS

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)

Project cheetah is the world's
1st Inter-continental relocation
African cheetah in India ^(Kuno National park) _{for its}



Reintroduction of fauna — justified :-

- (i) Major fauna \Rightarrow act as keystone species.
- (ii) Reintroduction help in regeneration of local ecosystem.
- (iii) Increases its prey base.

- (iv) Act as ecosystem reconstruction.
- (v) Help in conservation of critically endangered / extinct species.

Not justified:

- (i) Alter the local ecosystem ability.
- (ii) Fauna's ability to survive in new location
(eg) 12 cheetahs died in Kenya.
- (iii) Create Human-animal conflict by animal-animal conflict.

Nevertheless, through scientific approach like soft release, radio collar monitoring, cheetah mitras etc. this new approach of conservation can benefit the Global biodiversity Nagoya goal of reducing extinction of species.

Feedback

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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)

Green growth refers to growth that is climate adaptive & eco-friendly which creates equilibrium in economic - environment debate.

2023-2024 ⇒ measures propelled:

(i) Green hydrogen mission

↳ alternate fuel

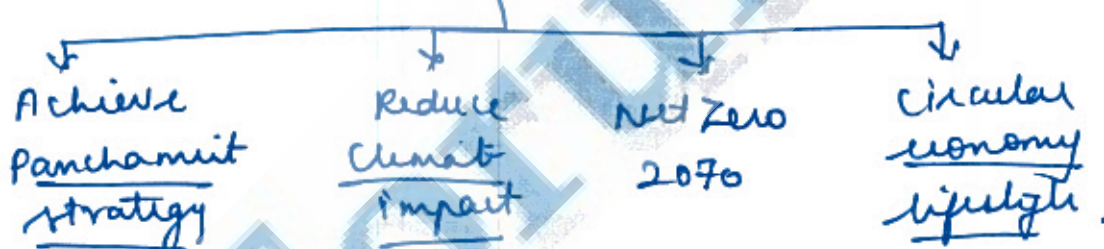
↳ create 5 mmt of green hydrogen by 2030.

(ii) Green credit growth → 29,000 Cr.
Capital investment in green infrastructure.

(iii) Jobar Dhan ⇒ Utilisation of Alternative fertilizers by reducing chemical fertilizers

- (iv) MISHTI - mission to conserve the mangroves
- (v) Amrit Darohar - to conserve wetlands
- (vi) Creation of 500 waste to wealth plants
- (vii) Integration of renewable energy grid to inter-state utilisation

Benefits :-



Thus green growth strategy essentially creates way to achieve our climate action goals.

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)

Nearly 36% of our forest cover is highly prone to forest fires -
State of forest report.

Unplanned urbanisation ⇒ urban fires ⇒

- (i) High population density → increases the vulnerability to hazard.
- (ii) Close knit situation of Industries → proliferation of fire accidents.
- (iii) Poor implementation of fire extinguishers in building.
- (iv) Increased use of cigarettes
- (v) Deforestation ⇒ creation of dry lands.
- (vi) Climate change ⇒ erratic monsoon & reduced precipitation.

Measures to Mitigate:-

By National Building Code - 2016.

- (i) compulsory installation of fire-extinguishers.
- (ii) Fire proof infrastructure installation
- (iii) creation of fire exits.
- (iv) Use of natural materials by fire proofing building.
- (v) Adequate information dissemination
- (vi) Conduct mock drill
↳ create awareness among people

Thus creation of 'Green Cities', AMRUT by smart cities should help in mitigating urban fire problems.

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 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)

"Prevention is better than cure" should be the strategy that must be employed in modern warfare by cyber technology

eg) create cyber dome - surveillance in cyber threat.

Intelligence role in national security

(i) Acquiring open source information
eg) Natgrid.

(ii) creation of advisories & awareness to people
eg) cyber swachta kendras.

(iii) provision of anti-propaganda to debunk the agenda of terrorists.

(eg) 26/11 attack.

(iv) crucial role in playing integrated attack & offence mechanism.

Limitation:

(i) Poor intersectoral coordination

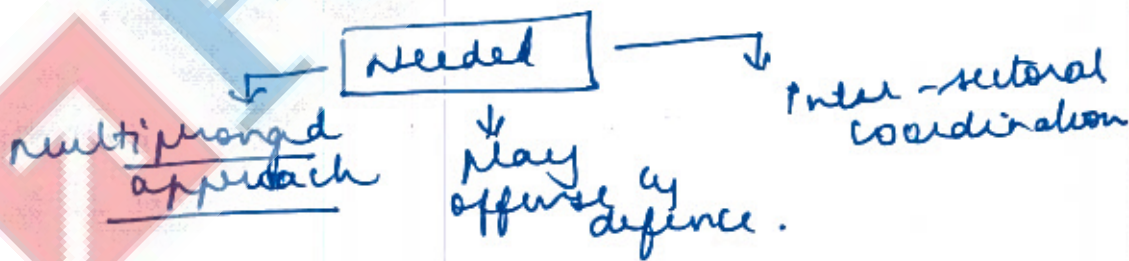
(eg) Natgrid info only to 12 agencies.

(ii) Poor centre - state coordination

(eg) CBI - general const issue

(iii) Inadequate training & skilled manpower (eg) RAW in 26/11 attack

(iv) poor capacity building.



Thus the role of state intelligence agencies in national security is paramount.

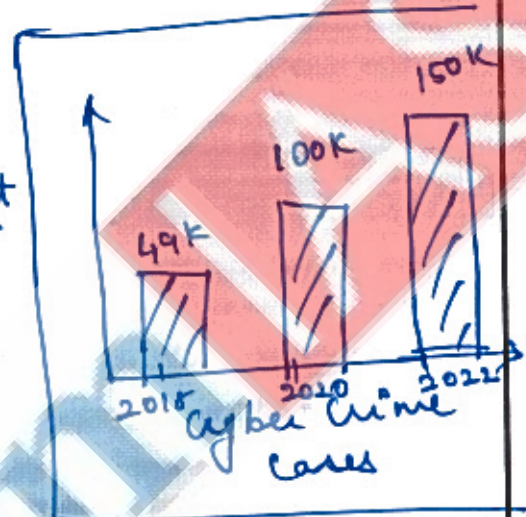
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TOTAL MARKS			

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)

As per Snowden revelation, India is one of the highly vulnerable countries for cyberthreat by crime.



Different kind faced:-

- (i) Ransome by malware attack (eg) Akina attack, Pegasus malware attack.
- (ii) Cyber bullying by cyber pornography (eg) Buys locker room.
- (iii) Cyber espionage (eg) Red Echo in Maharashtra. → acquiring sensitive government information
- (iv) Cyber warfare → 5th domain of warfare.

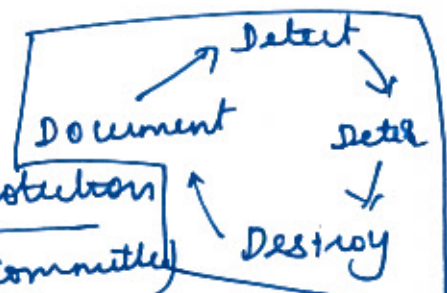
(eg) Crouching Yeti - attack of Critical Information Infrastructure (CII)

Current status of cybersecurity framework

- (i) Cert In ⇒ nodal agency for cyber threat prevention.
- (ii) NCIIPC ⇒ Nation CII protection Centre.
- (iii) Cyber dome → Kuala : for cyber space resilience.
- (iv) NATGRID ⇒ information collection.
- (v) Cyber swachta kendra → for effective grievance redressal.

Steps needed:

- i) proactive strategy
- ii) comprehensive data protection law (Sukrishna Committee)
- iii) Cyber-forensic lab - Jyotsnai Rai Committee



Thus safe Cyber space is siene qua non for National & public security.

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 सुझाए। (10 अंक, 150 शब्द)

Money laundering - practice of disguising the identity of illegally earned money.



Money laundering → Global problem:-

- (i) ML cause 2-5% of world's GDP ⇒ IMF
- (ii) Important source for terror funding of organised crime.
- (iii) Proliferation of tax haven countries like mauritius ⇒ high ML possibility
- (iv) Creates big network of drug lines by gun running leading to creation of parallel economy.

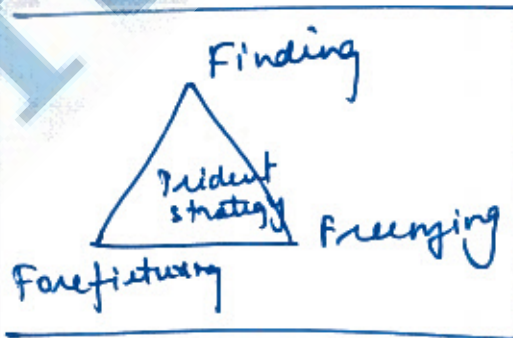
Global problem \Rightarrow Global solution:-

- (i) Creation of FATF task group for anti-money laundering
- (ii) Edmont group to curb ML.
- (iii) Vienna convention - global ban by action response for ML

However Individual countries should also take effort (eg) PMLA of India

Ways to curb:-

- (i) Sanction of countries which in act (eg) Pakistan in grey list.



- (ii) Stringent implementation of law.
- (iii) Creation of Global solidarity on taxation (eg) Global minimum tax

Thus money laundering menace should be eradicated for economic & social & stability

Feedback

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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)

NASA - INDIA - Synthetic Aperture Radar
is a Low - Earth observatory system (2014)
developed by US - India together

About NISAR

- (i) Maps the globe in 12 days
- (ii) study its atmospheric, climate resource structure.
- (iii) All weather by dual band satellite

Relevance in climate change

- (i) Study the earth's cryosphere and its impact to climate change
- (ii) Analyse the cause of melting of polar ice caps

(iii) Study of world ocean waters temperature to analysis its impact on climate change.

Relevance in study of natural hazards :-

(i) Study of Earth's resources by its contribution to hazard (eg) Earthquake & Tsunami.

(ii) Effective disaster management models

(iii) Use of L & S band frequency to analyse the weather patterns by Cyclone study.

Thus NISAR is a milestone in studying the cause of climate change by disaster, help in evidence based policy making

— x — .

Feedback

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Please put tick marks in the above table.			
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TOTAL MARKS			

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)

Nuclear technology - 5th largest contributor to renewable energy capacity in India.

Panacea to dichotomy!

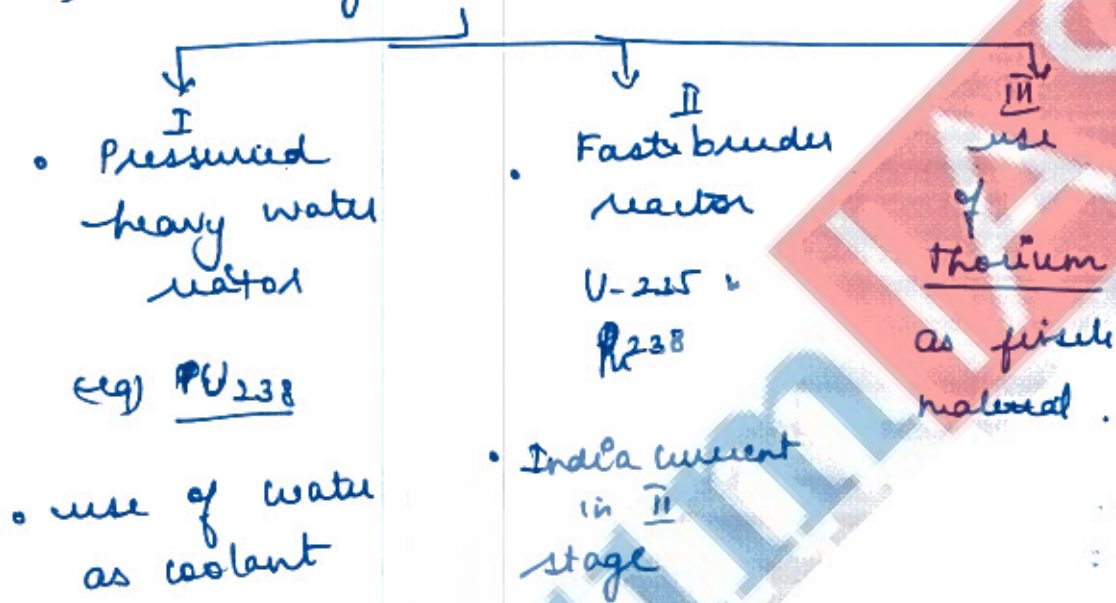
Environment	Development
(i) Fusion power CO ₂ - free fuel by energy	(i) High energy potential
(ii) Eco friendly	(ii) Cost effective than fossil fuel.
(iii) Fusion - reduced radiation impact	

India's III stage Nuclear programme!

(i) Homi J. Baba - father of India's nuclear energy programme.

ii) India utilised closed fuel cell technology

(iii) 3 stages



Applications:-

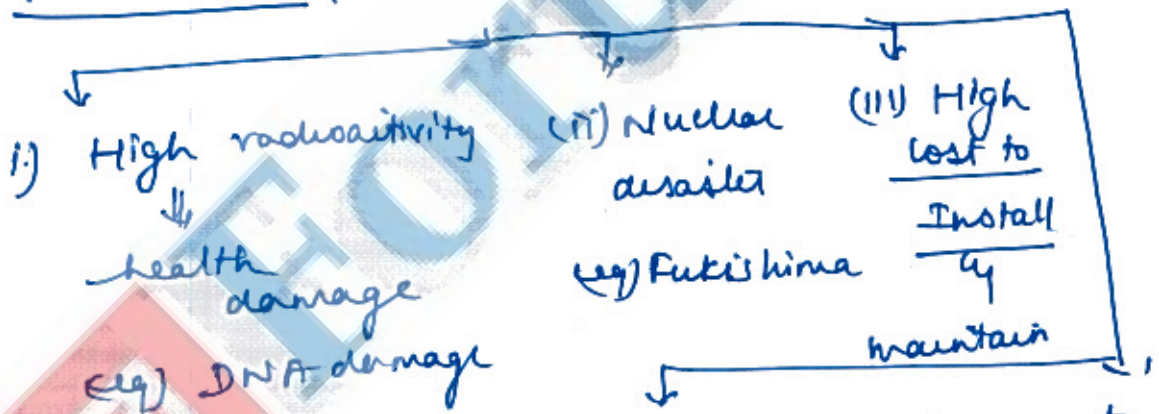
i) Energy generation : (eg) ITER project
 ↳ move away from fossil fuel based economy.

↳ Helps in achieving 500 GW - non fossil fuel by 2070.

(vi) Nuclear research by designing of weapon system.

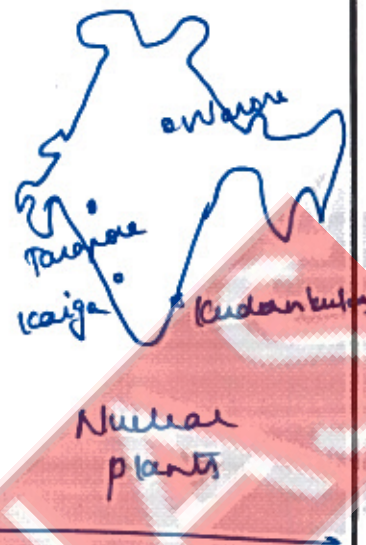
(vii) Nuclear energy help in studying of Universe (eg) China - Artificial Sun.

(iv) Nuclear medicine ↳ genetic disease study
Limitation



Nonetheless, Nuclear power has immense scope in revolutionising various facets of society

(v) Weapons for destruction (eg) Atomic bomb.
 (iv) Inadequate skilled manpower.



Feedback

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Please put tick marks in the above table.

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TOTAL MARKS

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 refers to manipulation of atoms by materials of size 1-100 nm. It is an emerging field of science with immense practical applications.

About Nanotechnology:-

- (i) ^{It's} Study of nanoparticles
- (ii) Its size range from 1-100 nm
- (iii) They are produced industrially as well as naturally through volcanic eruption etc.

Nanotechnology - socio-economic growth:-

- (1) India top 5 published in nano-science.

(ii) It can increase the GDP potential by 15-16% by 2050 (McComen research)

(iii) Energy sector

↳ Carbon nanotubes - used in production of solar cells & PVCs.

↳ Carbon Nanorods, nanochips are used in renewable energy production
(iv) Graphene.

(iv) Health:

⇒ Nanomicelles ⇒ targeted drug delivery.
⇒ Nanosponges ⇒ absorption of toxins.
⇒ Nanorobots ⇒ assisted medical surgery.

(v) Environment:

(i) Oil Eaters - oil spill cleaning
(ii) Tetrahate nanofibres - air pollution sensor.

Issues :-



Steps taken :-

- (i) National mission of nano-science & technology - 2007.
- (ii) Increase investment upto 1.1% of GDP.
- (iii) creation of state of art infrastructure in collaboration with private industry - academia link.

Thus, Richard Feynman "Plenty of room in the bottom" - Nanotechnology

can help us achieve 5 trillion \$ economy goal by 2024-2025.

Feedback

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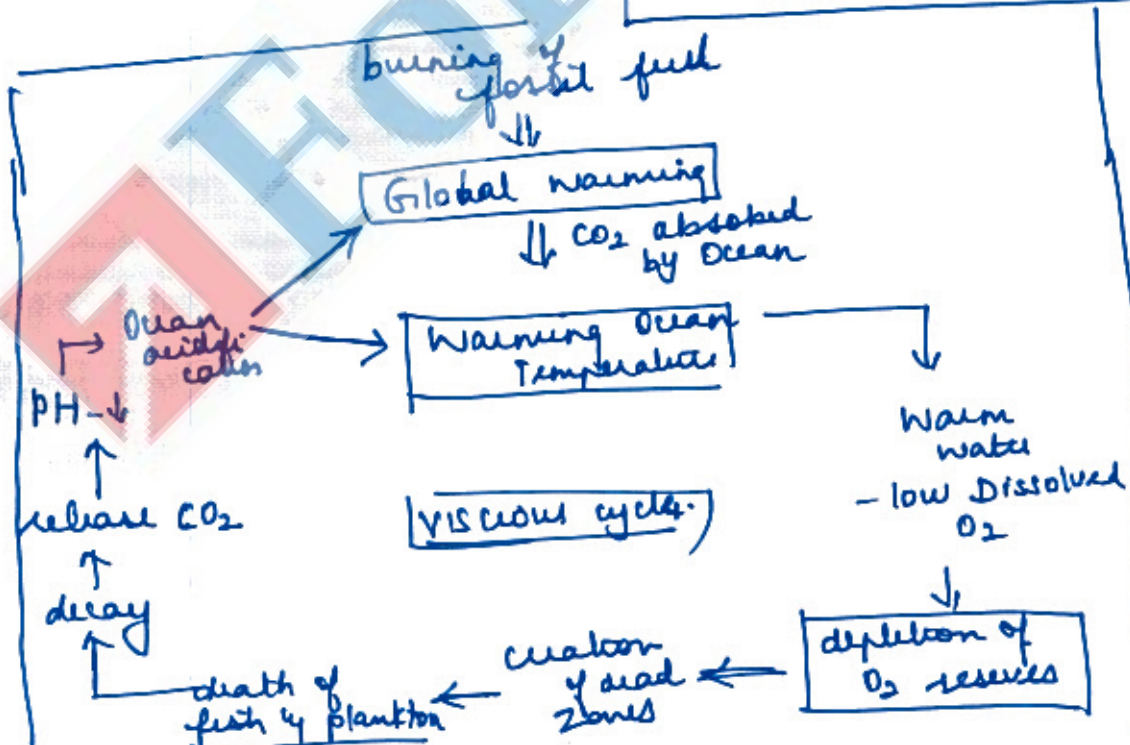
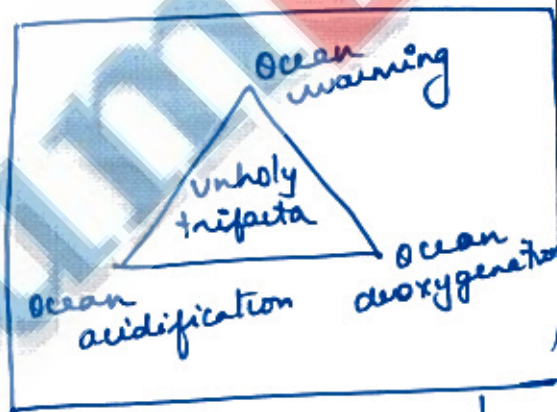
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TOTAL MARKS			

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

Ocean ecosystem contribute 1.5t\$ to economy annually & expected to be 3t\$ by 2050 \Rightarrow crucial component for economic & environment sustainability.

Interlinkage between them:



Repercussion of Environment:-

(i) Large scale of death of marine biodiversity

(eg) planktons & fish \Rightarrow which affects the food chain.

(ii) Acidification \Rightarrow Coral bleaching due to reduced calcification

(eg) last decade Ocean acidity \uparrow by 25% - IPCC

(iii) Creates disastrous positive feedback mechanism

\hookrightarrow further heightens the global warming.

(iv) Increases the impact of occurrence of disaster.

(eg) coastal erosion

(v) These effects can be seen in terrestrial organisms.

Repercussion in economy:

- (i) affects the blue GDP of the country (1.5% - 2023)
- (ii) Negative impact on coastal community
(eg) fishing - unproductive.
- (iii) affects the health & productivity of humans.
- (iv) Impact on marine resources
(eg) 10% of polymetallic nodules in 1% of sea surface.

Mitigation

International

- i) UN ocean conference
- ii) UNCLOS.
- iii) Climate - Net Zero treaty.

India

- i) Blue-green Infra + solar.
- (ii) Coastal Regulation Zones.

Oceans are important component to address the impact of climate change.

Feedback

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TOTAL MARKS			

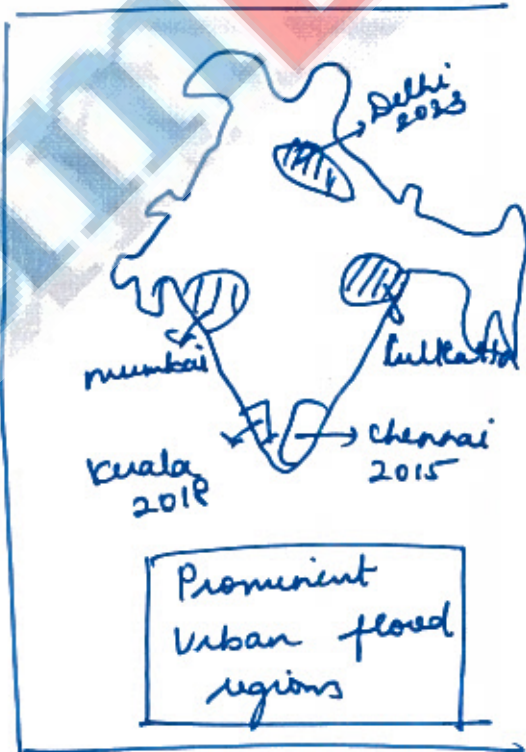
Q.14) Examine the factors that heightens the vulnerability of Indian cities to urban floods. In light of National Disaster Management Authority (NDMA) guidelines on urban floods, discuss suitable mitigation and management strategy. (15 marks, 250 words)

उन कारकों का परीक्षण कीजिए जो शहरी बाढ़ के प्रति भारतीय शहरों की 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 refers to excessive runoff in urban areas predominantly due to improper sewage & drainage management in cities.

Factors responsible:-

- WMO ⇒ Anthropogenic factors >> Natural factors behind Urban flood



(A) Anthropogenic factors

(1) Unscientific & unplanned urbanisation

(eg) space crunch in metro cities.

(ii) Improper sewage management
 ↳ 2/3 of Indian cities live in
improper drainage areas

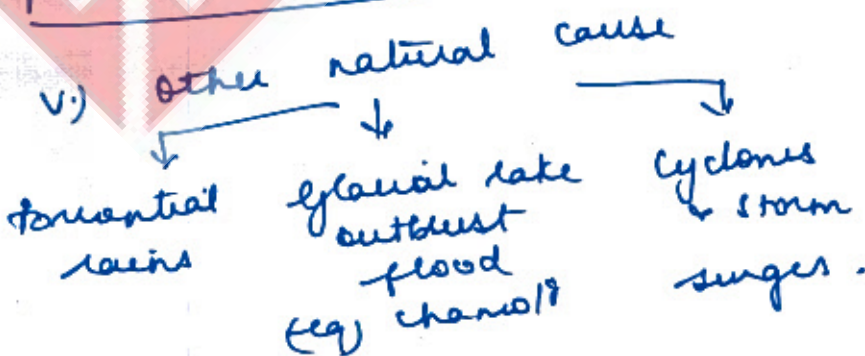
(iii) Encroachment of drainage basins
 (eg) Tall rise buildings in
water flowing areas



(eg) Delhi floods - 2023

As a result - Nitiyaayog reports

Flood Volume	→	increased by 8x.
Flood peak	⇒	increased by 6x.



NDMA guidelines to tackle the issue :-

Structural

- (i) Effective drainage by sewerage management.
- (ii) Creation of embankment walls.
- (iii) Adequate desilting of rivers.
- (iv) Creation of check dams.
- (v) Creating flood plain levees.

Non-structural



- (ii) Community based DM strategy

(eg) Spade mitra

- (iii) Effective EWS
Early warning system

(eg) SATARK - odisha

- (iv) Communication by
Resub.

(eg) I-Flows - mumbai

In this light,
government created
mitigation strategies

similar
like AMRUT ;

SPONGY CITIES

for effective control

of urban floods.

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. Analyse 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)

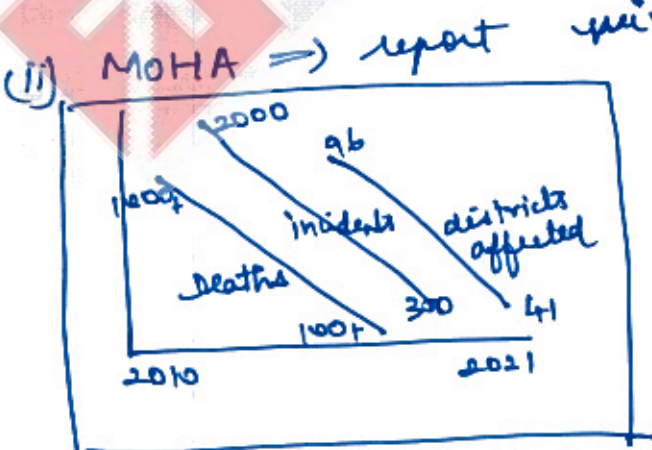
हालांकि नक्सलवाद में गिरावट की प्रवृत्ति दिख रही है, लेकिन यह न केवल अपने प्रभाव के मूल क्षेत्रों में फल-फूल रहा है बल्कि अपना रूप भी बदल रहा है। इसके पीछे हटने के कारणों का विश्लेषण करते हुए, इसके जारी रहने के पीछे के कारणों को रेखांकित करें। साथ ही देश से वामपंथी उग्रवाद को पूरी तरह खत्म करने के उपायों पर भी चर्चा करें। (15 अंक, 250 शब्द)

Naxalism started since 1967, is one of the biggest internal security threats. Though reduced, it is still prevalent in other forms.

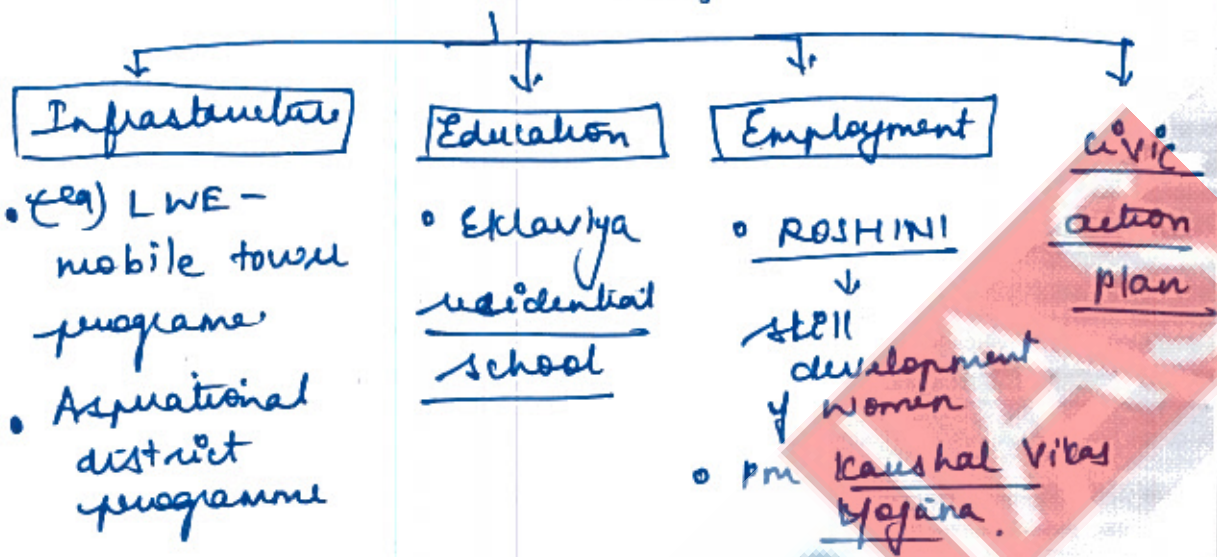


Reasons for retreat:

(i) Strong & Robust multi-pronged approach used



(iii) Development strategies :-



(iv) Security strategy

- i) COBRA
- ii) Black panther } forces
- iii) Greyhound - AP
- iv) STRACAS - WB

Factors behind PAs continuance :-

- i) Issue of jail jangal by Janien
 (eg) FRA-2006 ⇒ poor implementation
 P Forest conservation act - denying forest right.
- ii) social exclusion × dis crimination
 (eg) NCRB - SC crime 2% ↑
 ST crime 6% ↑.

(ii) Governance deficit
↳ polarisation of community & political exclusion.

(iv) Prevalence of poverty, inequality
eg) Regional imbalance BIMARU vs PAKK.

Measures to eliminate

(i) Focus on development aspects

eg) Aspirational block program.

(ii) Counselling for youth

eg) Radical Counselling hot line - Austria.

(iii) gradual demilitarisation & devolution of power.

Thus, eliminating LWF altogether is a crucial step towards making

"AMRIT KAAL".



Feedback

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TOTAL MARKS	
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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)

Climate inequality report states the bottom 50% of population emit only 12% of carbon, yet the most severely impacted group.

severity of impact across sectors & region :-

(i) Climate induced poverty \Rightarrow 132 mn people : 80% of them found in Africa, Central America & small island nations.

(ii) 80% of water stress induced by climate change - borne by women - UNESCO.

(iii) UNICEF → 1/7 child exposed to 5 major climate change disaster.

(iv) India - 7th most vulnerable country for climate change
 ↳ yet per capita emission - 1.3 ton/person/year.

VS - 4.5 ton

(v) Most brunt faced by 'Small Island Nations'

(eg) Indonesia Capital

Jakarta → Calimantan

↓
 most impacted by sea level rise.

Climate-resilient model :-

(i) Proper implementation of CBDR principle of Paris deal.

(ii) Higher financial contribution by developed nation (historically responsible)

iii) Adoption ^{creation} of sustainable lifestyle

(eg) LIFE by India



iv) Adherence to COP 27 - LT-LEDS by all countries

(eg) Zero emission law - Germany

v) Creation of 'Circular economy' model across sectors.

(eg) Climate smart agriculture

UN Study \Rightarrow If 1/8bn people adopt Circular lifestyle, GHG emission (esp. carbon) can be reduced by 20%.

Thus legislation along with Behavioural change is sine qua non for positive climate change adaptation & mitigation (eg) Panchamitra + LIFE of India

Feedback

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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. (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 - propounded in Sendai Framework is a multi-sectoral & multi-tiered approach which aims at prevention, preparedness & mitigation of disaster before it occurs.

DRR - Multi sectoral & multi-tiered

- (i) Focuses on Build-back better
- (ii) Creation of Disaster risk DRR resilient countries instead of disaster respond.
- (iii) Involves community participation
- (iv) (Top down \Rightarrow bottom up)
- (v) More proactive than reactive in nature.

Constraints in DRR:-

- (i) Inadequate sectoral integration of administration
 (eg) sequential actions followed.
- (ii) Inadequate investment in DRR infrastructure
 ⇒ 1\$ in DRR — save 7\$ in rescue & rehab.
- (iii) Poor community participation & awareness.
- (iv) Prevalence of information asymmetry.
- (v) Inadequate DRR governance.
 (eg) Turkey's earthquake ⇒ 10000+ lost lives.
- (vi) Improper identification of vulnerability & assessment of hazard character of Disaster.

Measures needed:-

- (i) Incremental usage of ICT & social media for awareness.
- (ii) Increase in number of nations with DRR plan.
- (iii) Higher investment in DRR infrastructure
eg) UNESCO - 2 community in Odisha Tsunami ready.
- (iv) Disaster management information dissemination
- (v) Focus of Research, monitoring & training, skill development.
- (vi) Involvement of community at large scale
eg) Aarudha mitra - flood.

In light of this, India enacted Disaster management policy - 2019 for effective DRR strategy.

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)

The ongoing violence in Manipur between Meities & Kuki ethnic community, exposed causes of North East security challenges beyond ethnic ties.

Ethnicity - major threat :-

1) Ethnic Identity's

staunch hold

↓
ethno nationalism
creates internal security threats.

(eg) Bodoland issue - Assam
Jarakhaland issue

Ethnic identities

↓

Lack of Cultural Synthesis

Increases stereotypes

↓
creates Hostile attitude

ghettoisation

↑
Violence to assert invulnerability

Other factors responsible:-

i) Historical → distance from mainland

(eg) Siliguri corridor

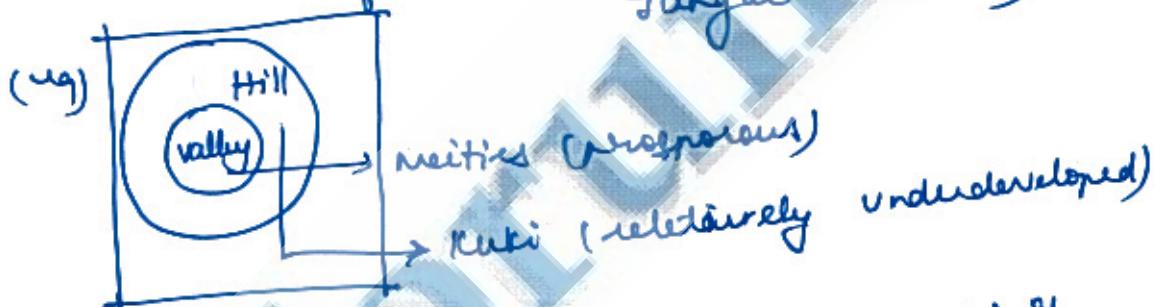
→ British - created tensions

(eg) Meity vs Kuki ∴ 1860s

ii) Economic ⇒ Inadequate development

(eg) NE - low human development index.

→ issue of land & resources (Jal Jangal Jameen)



iii) Administrative ⇒ governance deficit

- political exclusion of population
- Inadequate focus to its issues.
- slack implementation of policies.
- Inadequate civil liberties.

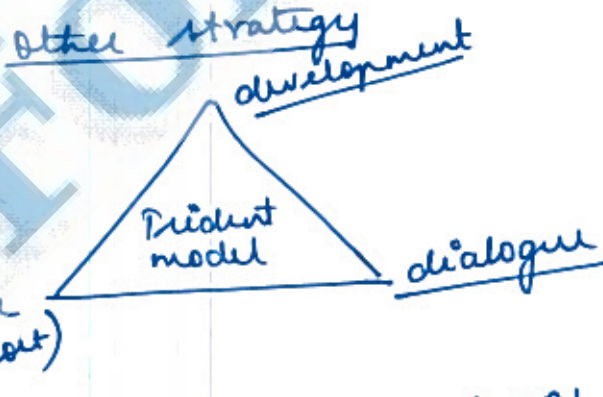
(eg) AFSPA

Measures to contain :-

(A) Developmental

- i.) Border & Hill area development programme - holistic growth.
- ii.) PM-DEVINE → Infrastructure ⁱⁿ North East
- iii.) NE - Rural livelihood programme.
- iv.) creation of NE forum for cultural integration

(B) Political: → 6th schedule → self governance ministry for NE Development (DONER)



Thus the road of AMRIT KAAL should run to North East India.

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 उग्रवाद/आतंकवाद के मूल कारणों को संबोधित करने में विकासात्मक पहल की भूमिका का आलोचनात्मक परीक्षण कीजिए। (15 अंक, 250 शब्द)

"Kashmir cannot be won by
power of sword rather be won by
power of spirit & love"

- Kalhana,
Rajatarangini

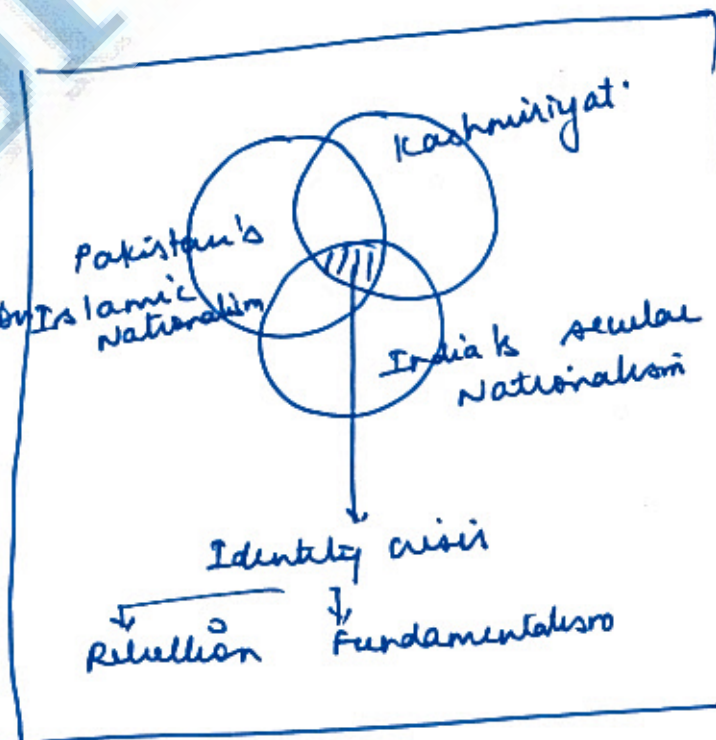
Kashmir militancy has been a
long standing internal security threat in
India

Causes

i) Historical;

• Instrument of Accession
(Special Status)
historical separation from mainstream

ii) Intervention ;
=> Pakistan's
bligis



Indoctrination \Rightarrow radicalisation of youth

- (ii) Political \rightarrow Revenue deficit
 \rightarrow political exclusion of population.
 \rightarrow Lack of civil liberties
 (eg) AFSPA, Internet shutdown

- (iv) social \rightarrow Poor educational & health development indicators.
 \rightarrow Low Human development index.

Role of development initiatives:-

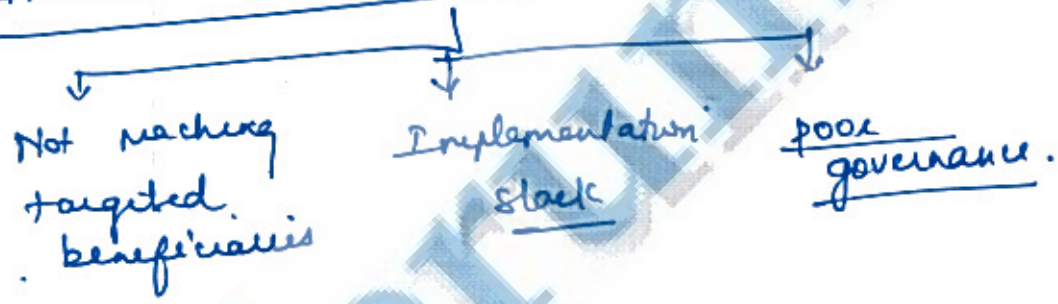
- (i) Political;
 \rightarrow Abrogation of article 370
 Involvement with mainstream population

- (ii) Infrastructure;
 \rightarrow PM's Infrastructure development parks
 \Rightarrow creation of IIT's & IIM's for higher education.

ii) Social

- ⇒ PM UDAN - for skill development.
- ⇒ Sadbhavana - "Aspiration of people" by Indian Army.
- ⇒ Project Umed - Women empowerment.
- ⇒ Project Hinayat - skill & employment opportunities.

Limitation in development initiatives:



Way forward:-

1) Multi-pronged approach

devolution	decentralisation
decentralisation	demilitarisation

This Road to New India should run along Kashmir.

Feedback
(For OFFICE use only)

#	G	A	P
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Please put tick marks in the above table.
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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 Artificial Intelligence (AI)
 advanced field of AI where the computer can generate content from scratch by itself

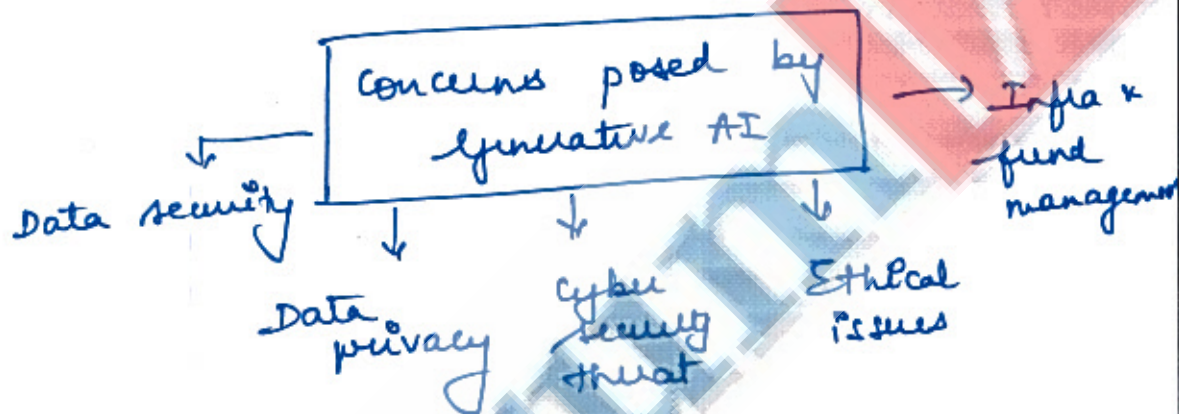
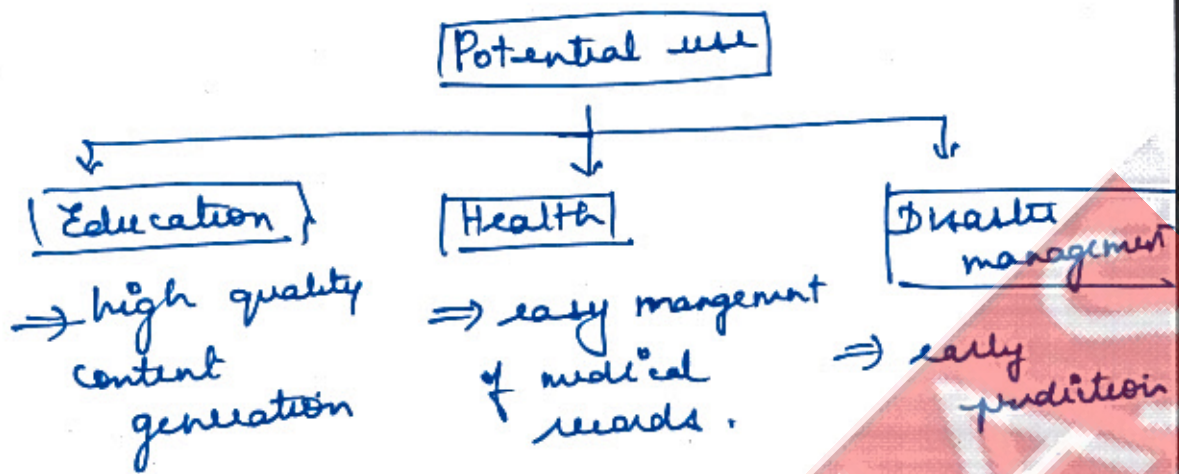
About Generative AI:-

(i) create data like audio-video by the system using ANN (Artificial Neural Networks)

(eg) DALL-E - text ⇒ image

(ii) Developed Models using Large Language

- Examples
- Chat GPT
 - Google BARD



Effective ways to address the concerns :-

- (1) Provision of Comprehensive Data security law by privacy law
- (eg) EU's Data regulation law

(ii) Creation of Robust cyber - security infrastructure

(eg) CERT-In - swachh kavach kendras.

(iii) International collaborations

(eg) GPAI - responsible use of AI.

(iv) Increase investment in R & D currently - 0.7% of GDP

(v) Creation of adequate public awareness

thus Cyber space, Emerging technologies
Generative AI are Global
"on good" => Inclusive & equitable

—X—

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			

Mentor Feedback Questions

- 1
- 2
- 3
- 4
- 5

Test Goal

- 1
- 2
- 3

Outcomes

-
-
-

Marking Scheme

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

* Subject to change without prior notice.

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