

RCA - JMI

TEST CODE 8 1 3 4 1 1

MGP 2025

Time Allowed : Three Hours
समय : तीन घंटे

ForumIAS

Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	NAZIA PARWEEN		
Roll No./अनुक्रमांक	1910103345	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	RCA JMI	Date/दिनांक	10/08/25

*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 :	End Time/समाप्त करने का समय :
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन <input checked="" type="checkbox"/> Offline/ऑफलाइन <input checked="" 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: Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion classes for the tests are also available online in your portal to aid in your preparation. Further, students are requested to see the good copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and means to improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS = Answered What is Asked.** This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first place. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjectivity of the examiner.
2. **CD & VA = Content Density & Value Addition.** Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit and space limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of (but not all) suggestions, ideas, quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.
3. **S & F = Structure & Flow =** Whether you have structured your answer properly or not. Whether the answer has been broken into parts and sub-parts and each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.
4. **P & R =** How your answer performs on the criteria of presentation, ease of read, clarity and apparent effort in writing the answer. This affects the subjective components of assessment.

Q.1) The Union Budget 2025-26 outlines a shift towards the 'debt-to-GDP ratio' as the fiscal anchor starting from FY 2026-27. Discuss the rationale behind this shift. (10 marks, 150 words)

केंद्रीय बजट 2025-26 में वित्त वर्ष 2026-27 से राजकोषीय आधार के रूप में 'ऋण-से-जीडीपी अनुपात' की ओर बदलाव की रूपरेखा तैयार की गई है। इस बदलाव के पीछे के तर्क पर चर्चा करें। (10 अंक, 150 शब्द)

Union Budget 2025-26 highlighted debt-to-GDP ratio as a tool to gauge indicator of macro stability of country and anchor of fiscal discipline.

Rationale behind this shift

1. To manage sovereign debts.
as per recommendation of NK Singh Committee
2. Sovereign Credit rating agencies used debt to GDP ratio on its rank.
 - ∴ will ensure good credit rating
 - ∴ cheap loans from abroad
 - ∴ better capital sources
3. To curb excessive revenue expenditure and strengthen Capital Expenditure

4. For better international Comparison
5. To project strong strength of Indian Economy globally
6. To Ensure least possibility of Sovereign debt defaults and maintain Credibility of Country
7. It could promote Internationalisation of rupee by better financial indicators and transparency.

Thus need is to Capacity building of states with high debts, promote fiscal discipline and become strong Economy and learn lesson from Sri lankan debt Crisis to become Vidut Bharat by 2047

Feedback

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#	G	A	P
AWIS			
CD & VA			
S & F			
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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.2) Why does India need to transition from a 'build to print' to a 'build to design' model in manufacturing? What steps has been taken by the government in this regard? (10 marks, 150 words)

भारत को विनिर्माण में 'अनुसारी निर्माण' (Build to Print) से 'डिजाइन आधारित निर्माण' (Build to Design) मॉडल की ओर संक्रमण की आवश्यकता क्यों है? इस संदर्भ में सरकार द्वारा कौन-से कदम उठाए गए हैं? (10 अंक, 150 शब्द)

Manufacturing sector to become Competitve, Sustainable, Contribute on GDP, generate Employment need to Evolve with wolvery techniques and practices.

Build to Print → it means low level manufacturing
 → Low R&D
 → Lower technology

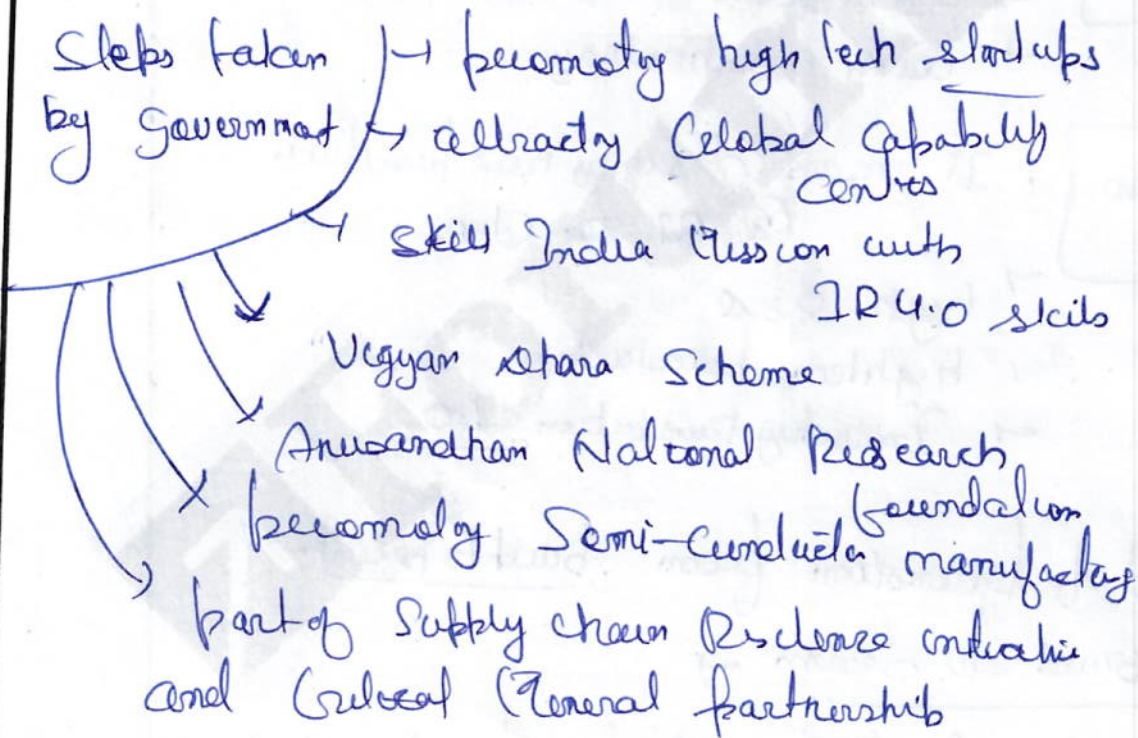
Build to Design → It means designing new products
 → High R&D
 → hightech product
 → Industry Revolution 4.0

Need of transition from built to print to built to design →

- ① from low level manufacturing to hightech product
- ② Design new products to solve

Global Challenges

3. To franchise innovation and Knowledge based Economy
4. To tap advantages of IR.4.0 like developing technology like AI, IoT, Quantum technology.
5. To generate Intellectual property rights, promote innovation.



This need is promote Ease of doing business, invest in R&D, Reverse Brain. dream to become build to design Economy

Feedback

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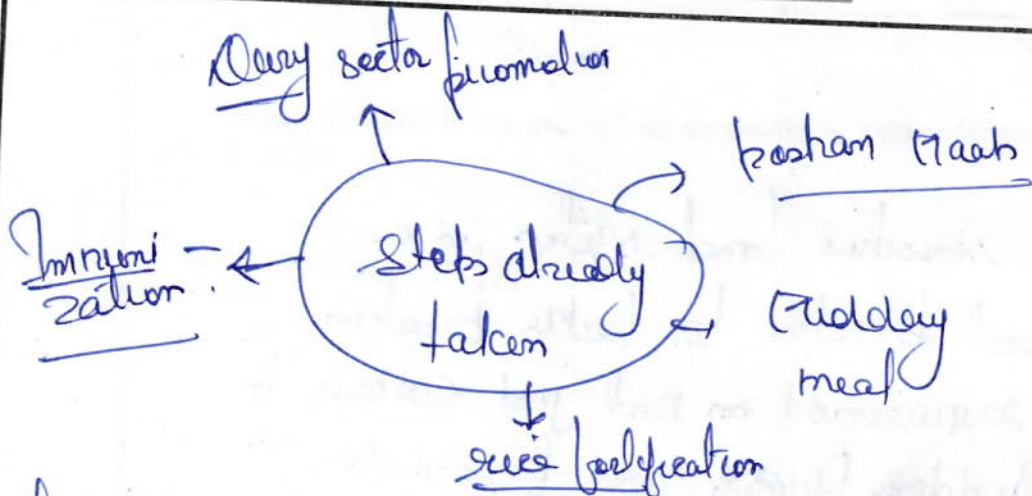
Q.3) Explain the concept of a nutrition-sensitive food system and suggest strategies to achieve it in the country. (10 marks, 150 words)

पोषण-संवेदनशील खाद्य प्रणाली की अवधारणा को समझाइए तथा देश में इसे प्राप्त करने के लिए रणनीति सुझाइए। (10 अंक, 150 शब्द)

Nutrition sensitive food system is a holistic food practice to tackle protein, mineral requirement ~~is~~ not just calorie to tackle Hidden Hunger and promote healthy India.

Nutrition-sensitive food system

- ① Take care of nutrition requirement of all age group - children, women, lactating mother
- ② Diversified food intake.
- ③ Crop diversity, sustainability
- ④ Awareness about immunization, WASH
- ⑤ Focus on food absorption, assimilation in body along with accessibility, affordability
- ⑥ Tackling nutrient deficiency via fortification mid-day meal.



Further however, there is issue of sterility, wastage, and hidden hunger as per Global hunger

Index and NHFS-5 survey

- Way forward
- fortified food via POS
 - promote Super food like pulses
 - Carb Monoculture and MSP
 - promote animal husbandry & poultry and fisheries
 - Awareness generation for nutrition needs

SHGs

Women Empowerment (Museum Samborno, Assam)

Shri Shyamaw (Ladakh in Uttarakhand)

Thus, nutrition → sensitive
 Good system is required for SDG Goal - Health for all

Feedback

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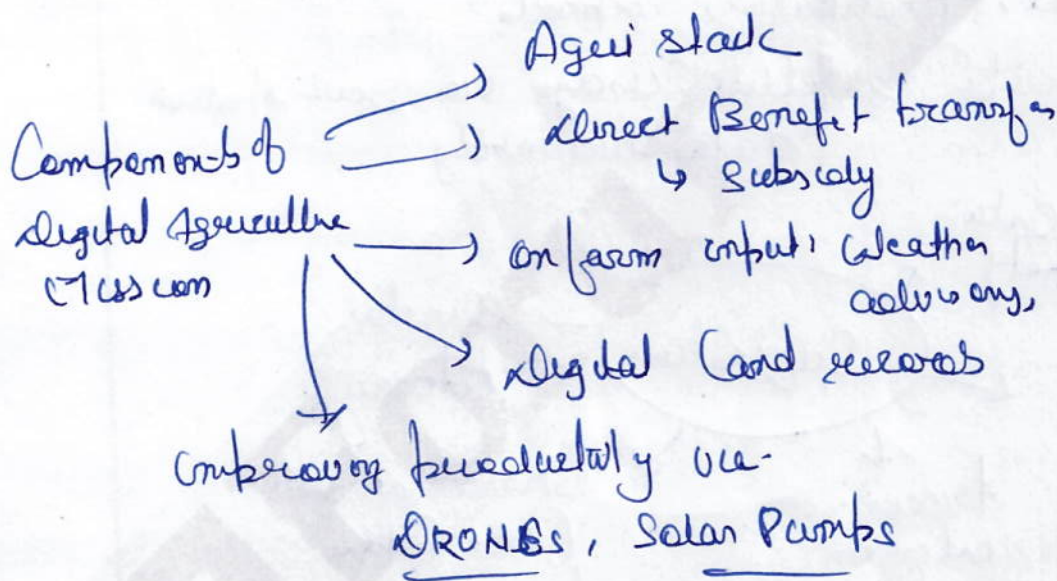
Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.4) Give a brief overview of the 'Digital Agriculture Mission'. How can it benefit the agriculture sector? (10 marks, 150 words)

'डिजिटल कृषि मिशन' का संक्षिप्त विवरण दीजिए। इससे कृषि क्षेत्र को क्या लाभ हो सकता है? (10 अंक, 150 शब्द)

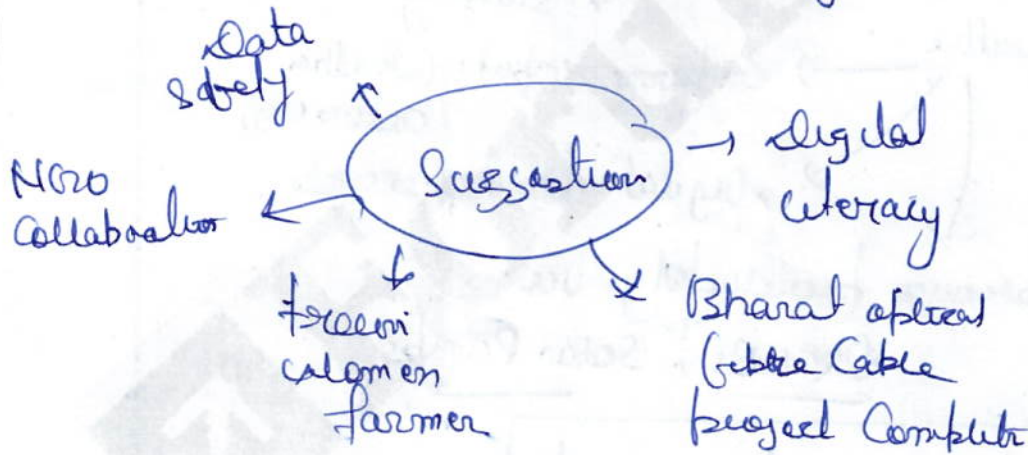
Digital Agriculture Mission aims to integrate digital technologies through out agriculture value chain create backward and forward linkage for food security and resilient agriculture sector



Benefits to Agriculture sector

- ① Technologies like AI, IoT can give update on fertilizer spray, pest attack, sowing grains
- ② Biotechnology → Nano-pesticide, Nano-

- Fertilizer improving productivity
- ③ digital records can facilitate formal credit source
 - ④ Easy insurance claim processing
 - ⑤ training farmers via video-conferencing
 - ⑥ Solving grievances, queries via digital app
 - ⑦ help in strengthening knowledge about market, horticulture, exports.
 - ⑧ Promote satellite usage via geo-spatial data availability



This digital technology can revolutionize and regenerate agriculture, need is to make it Economical, Scalable and understandable to Each farmer

Feedback

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Q.5) Rare earths are not just elements; they are foundational inputs that act like 'seeds of technology'. Elaborate. (10 marks, 150 words)

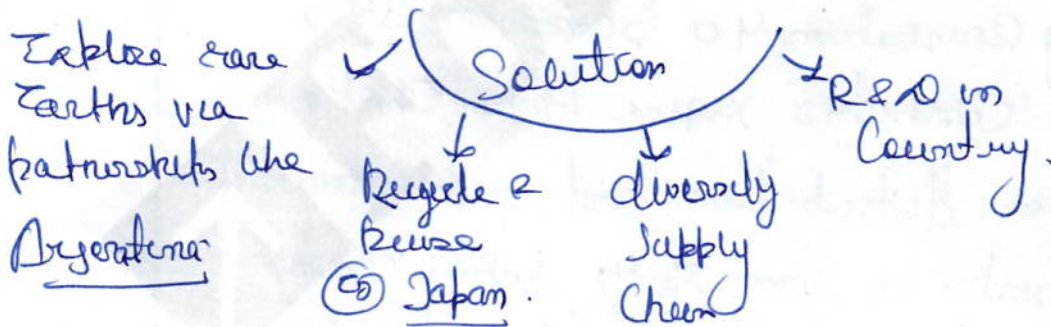
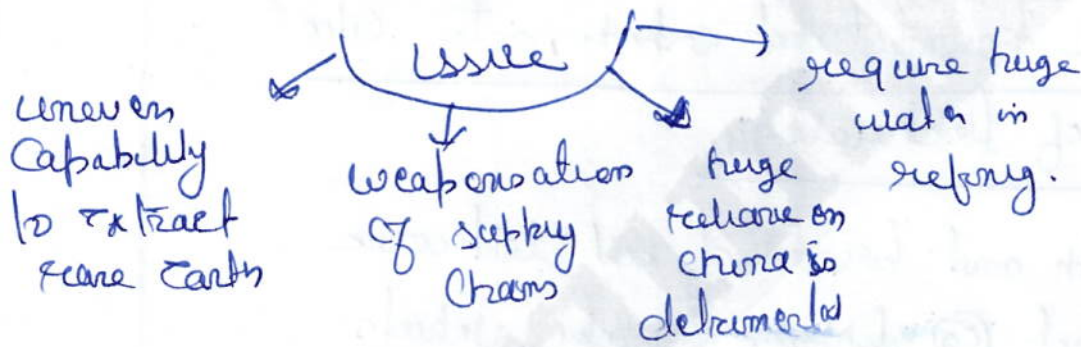
दुर्लभ मृदा तत्व (Rare Earths) केवल रासायनिक तत्व नहीं हैं; ये प्रौद्योगिकी के 'बीज-तुल्य' मूलभूत निवेश हैं। सविस्तर वर्णन कीजिए। (10 अंक, 150 शब्द)

Rare Earths are elements like lithium, cobalt, found in large, but low density in lithosphere, require hightech extraction tools and is a energy intensive process.

They are foundational inputs, acting like 'seeds of technology'

- ① Heart and brain of all electronic product (eg) phone, laptops, vehicles.
- ② Industry Revolution 4.0 based on IoT, AI, super computers require Rare Earths
- ③ Its uneven distribution and dominance of few countries in rare earth supply chain like China, Taiwan, make it crucial.
- ④ They are needed in Renewable Energy development
like used in Solar panels.

5. Computer chip, vehicles need rare-Earth material
6. It is crucial in defence technology
7. They are used in automobiles, battery production. Thus make it foundational input.
8. Used in semiconductors sector



Thus due to huge importance of rare earths, we need to develop a secure, resilient supply chain by using KAABIL etc.

Feedback

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TOTAL MARKS	
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Q.6) Why retrofitting Electrostatic Precipitators (ESPs) in Indian thermal power plants is a more viable and effective option compared to the installation of flue gas desulfurization (FGD) systems?

(10 marks, 150 words)

भारतीय तापीय विद्युत संयंत्रों में फ्लू गैस डिस्ल्फ्यूरिजेशन (FGD) प्रणालियाँ लगाने के बजाय विद्युत-अवक्षेपकों (ESPs) का पुनर्संयोजन क्यों अधिक व्यवहार्य और कारगर विकल्प है? (10 अंक, 150 शब्द)

Thermal power plants release huge pollutants like Sulphur due to dependence on Coal as source of Energy.

But plants have shown difficulty in adopting flue gas desulfurization (FGD) systems due to

following reasons

- ① Lack of money for huge investment
- ② Technology is complex, lack of trained manpower
- ③ Lack of cooperation from global markets
- ④ Already facing tough competition from solar and other renewables.

So alternative is Retrfitting :
Electro static precipitators (ESP)

- ① More viable financially and technologically
- ② Technologically easy to handle
- ③ More suitable for Indian Coals that have huge ash content
- ④ Easy to operate
- ⑤ Easy to dispose pollutant
- ⑥

Thus, need to promote viable technological solution keeping in mind profitability, planet and people.

Feedback

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TOTAL MARKS			

Q.7) 'The Environmental Impact Assessment (EIA) regime in India remains weak and is often reduced to a procedural formality.' In light of this statement, examine the key challenges in EIA implementation and suggest reforms. (10 marks, 150 words)

'भारत में पर्यावरण प्रभाव आकलन (EIA) व्यवस्था कमजोर बनी हुई है और अक्सर इसे प्रक्रियात्मक औपचारिकता तक सीमित कर दिया जाता है।' इस कथन के आलोक में, EIA कार्यान्वयन में प्रमुख चुनौतियों का परीक्षण करें और सुधारात्मक उपाय सुझाएँ। (10 अंक, 150 शब्द)

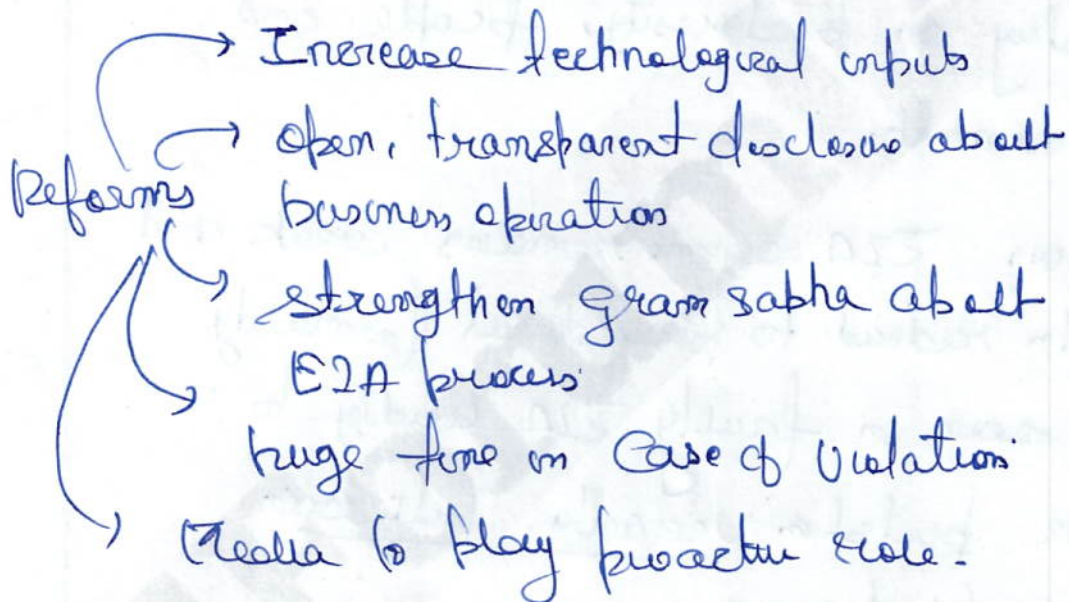
Environmental Impact Assessment is checking carrying capacity of Ecology with respect to pollution, impact of industry on biodiversity, people and Environment.

However EIA regime remains weak and is often reduced to procedural formality as seen in faulty EIA leading to huge protest in Vedanta, Tuticorin steel plant issue.

Key challenges in EIA implementation

- ① Regulatory challenged → opaque, corruption to get EIA passed.
- ② Lack of effective consultation with Gram Sabha (eg) Nyamgori had protest

- ③ Security imperatives in border areas
- ④ Critical projects like drinking water, highway projects Exempted
- ⑤ Favours to favour, Employment generation
- ⑥ Lack of timely impact assessment
- ⑦ Post-facto EIA approvals



Yes, There could be no Economy without Ecology as seen in Jashmath Sabdence and utankashu. Hence needs to follow EIA and respect Ecology.

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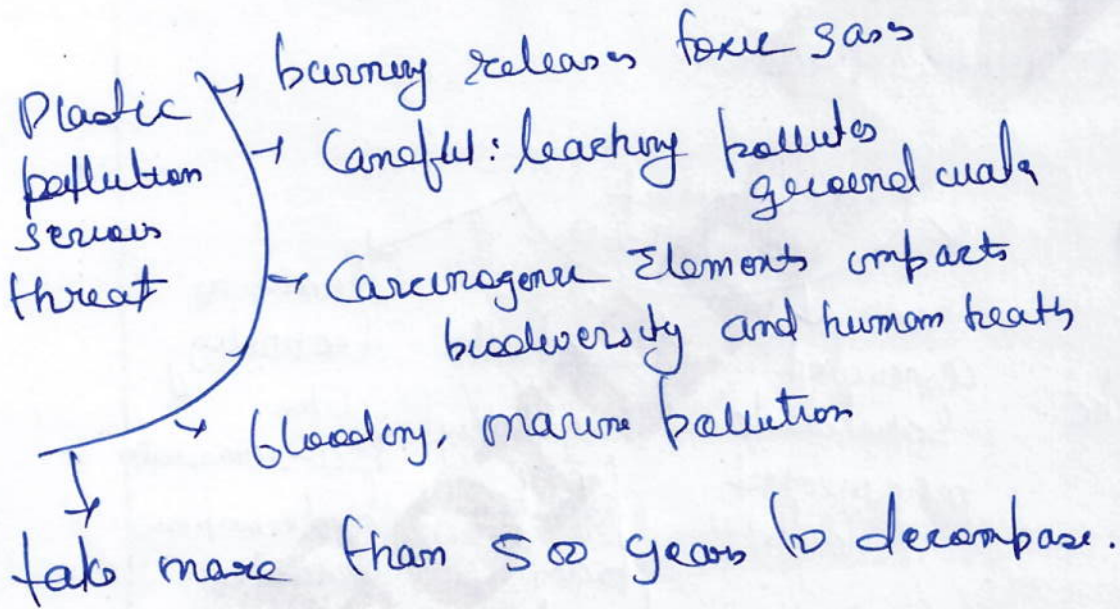
TOTAL MARKS	
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Q.8) Plastic pollution is emerging as a serious environmental threat in India. Discuss the various mitigation measures to address this problem and also the government's initiatives in this regard.

(10 marks, 150 words)

प्लास्टिक प्रदूषण भारत में एक गंभीर पर्यावरणीय खतरे के रूप में उभर रहा है। इस समस्या से निपटने के लिए विभिन्न शमन उपायों और इस संबंध में सरकार की पहलों पर चर्चा करें। (10 अंक, 150 शब्द)

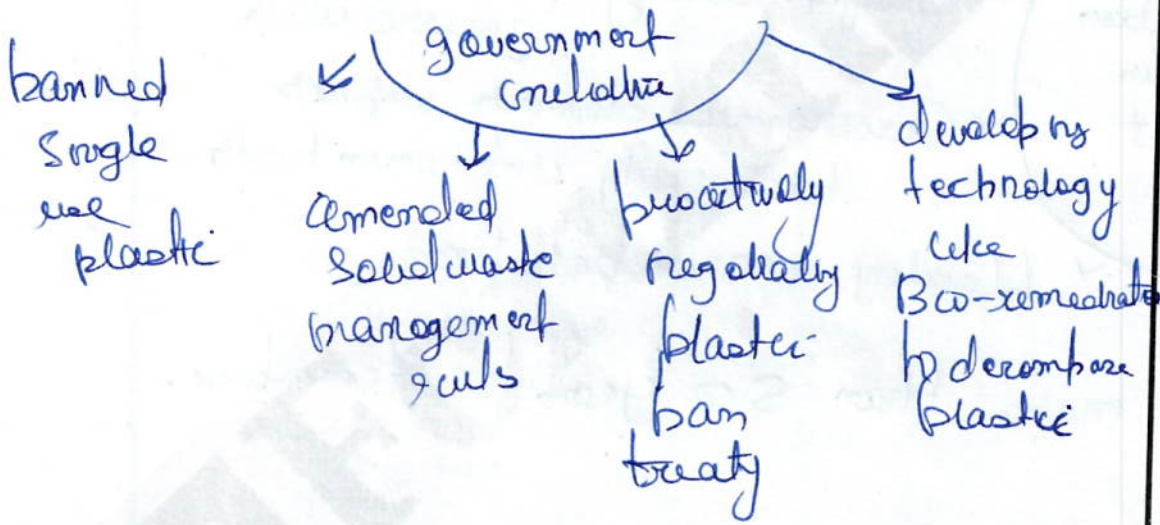
India generates ~~1.2~~ 1.2 million tonnes of plastic pollution however only one third is collected and recycled.



Mitigation measures to address this problem

- ① implement single use plastic ban effectively
- ② develop alternative like bio-plastics.

- ③ Behavioural nudge to Carry cloth bag
- ④ Fines and penalties
- ⑤ waste segregation for recycling
- ⑥ Extended producer responsibility to Collect and buy back.
- ⑦ Local Measures like Baran Bandha in Madhya Pradesh.



Need is Central regulator to monitor plastic bans and awareness Campaign - on line of Life movement to promote Circular Economy

Feedback

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TOTAL MARKS			

Q.9) Amid evolving threats, there is a need to blend private sector capabilities with India's current internal security architecture. In this context, elaborate on the ways in which the private sector can contribute to strengthening internal security. (10 marks, 150 words)

उभरते खतरों के बीच, भारत की मौजूदा आंतरिक सुरक्षा संरचना के साथ निजी क्षेत्र की क्षमताओं को जोड़ने की आवश्यकता है। इस संदर्भ में, उन तरीकों पर विस्तार से चर्चा करें जिनसे निजी क्षेत्र आंतरिक सुरक्षा को सशक्त करने में योगदान दे सकता है। (10 अंक, 150 शब्द)

India need private sector participation
as 'Team India', not in Economic but
in internal security architecture, to
follow holistic and participative approach

Private sector role in strengthening
internal security

- ① Balanced regional development,
Employment opportunities in north-east.
- ② Partnership in Connectivity infrastructure
under BOT, HAM modes
- ③ Private sector presence in rural areas,
can boost investments, crowd-in
effect

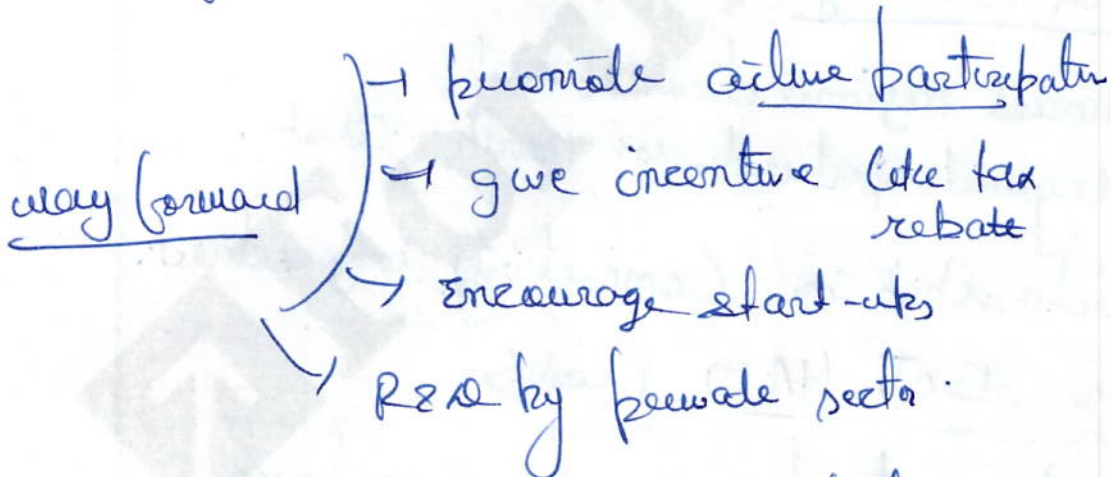
4. Can provide weaponry like drones to fight Surveillance

5. Can attract global value chains, MNCs and curb radicalisation of youth

⊙ Investment promotion on J&K

6. Can provide social services like health, education

7. Under CSR initiative can train workforce in rural areas.



Thus, need to use potential of two partnerships and enhance capacity to ensure internal security

Feedback

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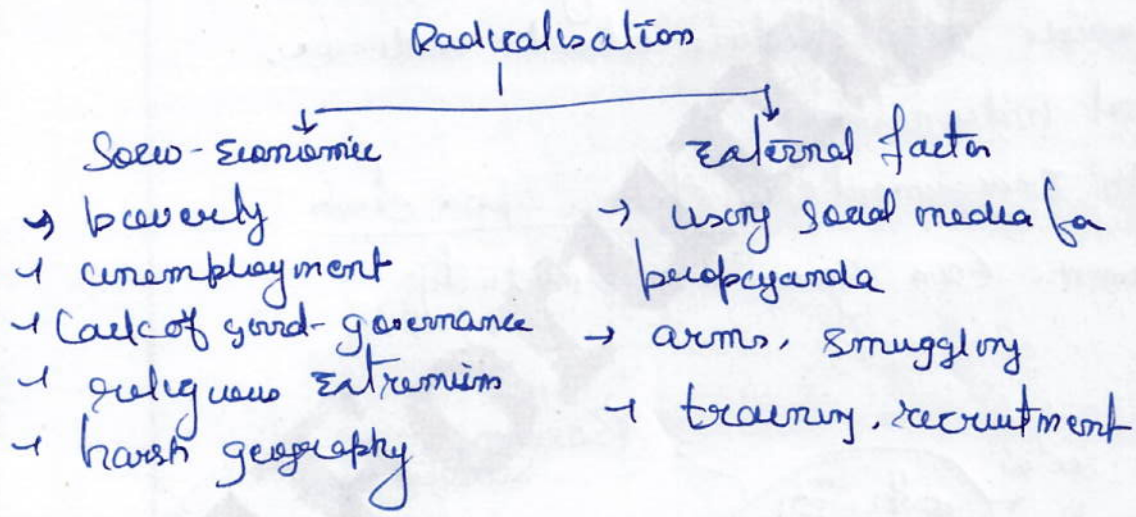


Q.10) 'Radicalisation in Jammu and Kashmir is driven as much by socio-economic factors as by external influences.' Discuss how education and youth engagement can play a role in countering radicalisation in J&K. 10M. (10 marks, 150 words)

'जम्मू और कश्मीर में कट्टरपंथ सामाजिक-आर्थिक कारकों के साथ-साथ बाहरी प्रभावों से भी प्रेरित है।' चर्चा करें कि शिक्षा और युवा भागीदारी किस प्रकार जम्मू और कश्मीर में कट्टरपंथ का मुकाबला करने में भूमिका निभा सकती है। (10 अंक, 150 शब्द)

Radicalisation is use of violence method due to influence of extremist philosophy. It is fuelled by poverty, illiteracy, external influences across border.

Radicalisation in J&K



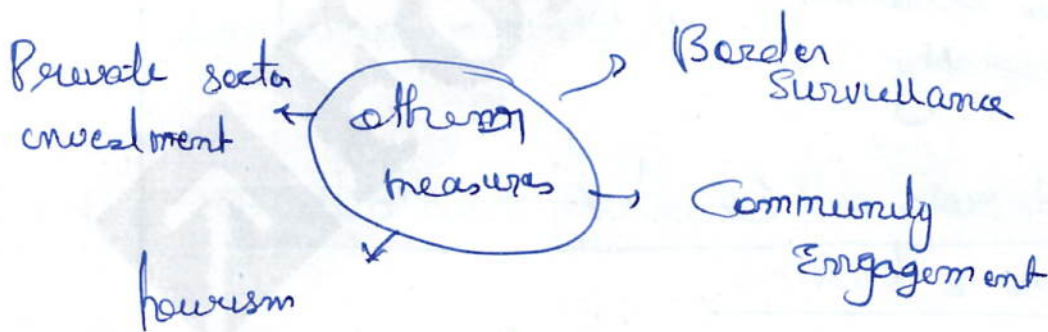
Education's role in Countering radicalisation on J&K & Kashmir

- ① Help to distinguish between right and wrong
- ② Productive Employment help to clean away from radicalisation.

- ③ Can develop art of questioning and do not fall for fake news
- ④ Better awareness about Cyber hygiene via digital education can curb propaganda

Youth Engagement for Countering Radicalisation in Jammu and Kashmir

1. To curb influence of drug on youth
2. Provide right picture about inclusive, plural nationalism.
3. youth Engagement via dekho apna desh programme can generate positivity



Thus holistic measure along with youth Engagement can curb radicalisation in Jammu and Kashmir

Feedback
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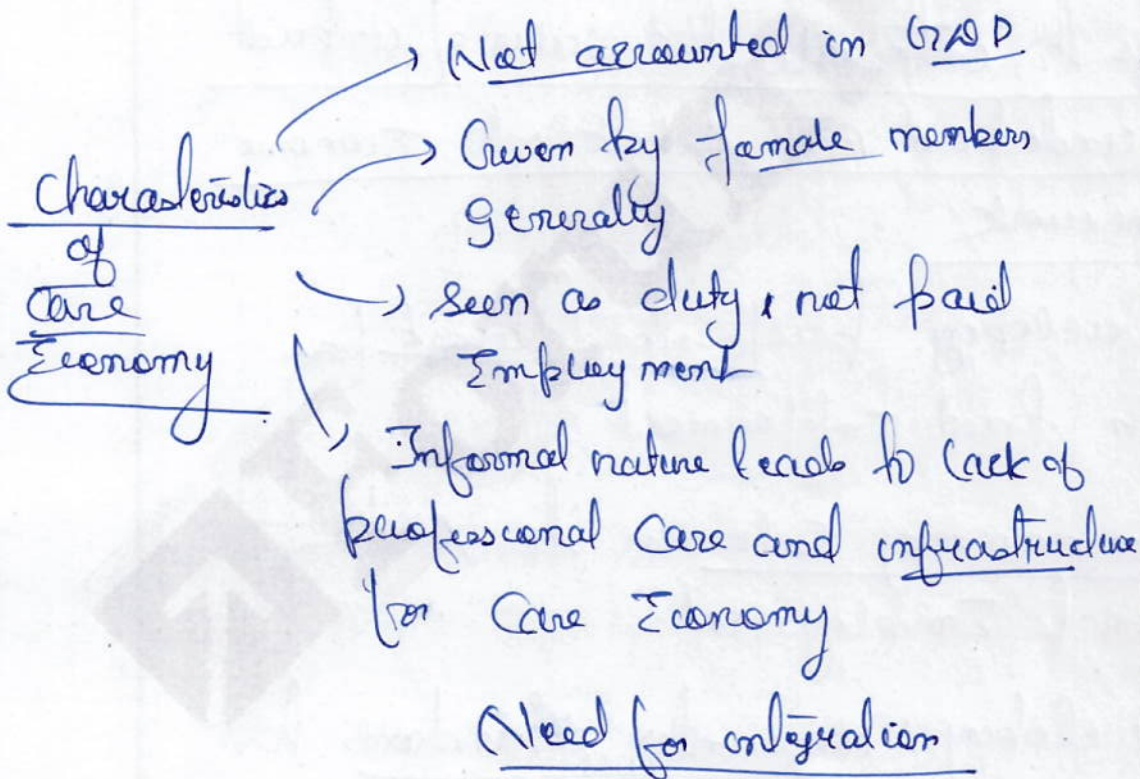
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Q.11) Outlining the key characteristics of the care economy, discuss how India can better integrate the value of unpaid and underpaid care work into its economic framework. (15 marks, 250 words)

देखभाल अर्थव्यवस्था (केयर इकोनॉमी) की प्रमुख विशेषताओं को रेखांकित करते हुए चर्चा कीजिए कि भारत किस प्रकार अवैतनिक और अल्प वैतनिक देखभाल कार्य के मूल्य को अपने आर्थिक ढांचे में बेहतर ढंग से एकीकृत कर सकता है। (15 अंक, 250 शब्द)

Care Economy refers to services given to Elderly, vulnerable generally by female family members. These go unpaid and underpaid, so need is to account them to integrate into Economy.



in Economy

① To include in Economic GDP

2. Develop professional care industry
3. Better care and treatment is
needed
4. Growth of Geriatric population
5. Reduce burden on health
system.

Ways to integrate the value of unpaid
and underpaid care work into Economic
framework

1. Develop professional sector for
unpaid employment
2. Empower women to seek
formal employment.
3. Develop accounting standards to
find value of Care Economy

4. ~~For~~ Education and awareness to seek professional care.
5. Better trained nurses, ASHA worker on Care Economy
6. Can raise a medical work force in Care Economy.
7. Removing gender stereotypes and taking women out of four walls.
8. Establishing old age home with Care Economy services.

Thus, these steps can strengthen Care Economy, bring gender empowerment and include it in Economic framework

Feedback

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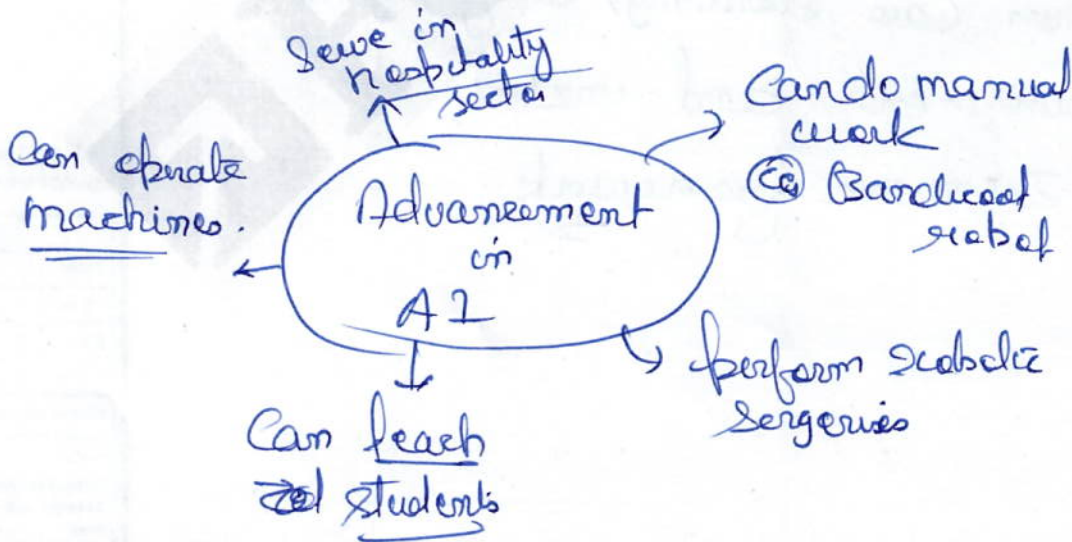
Q.12) 'The rapid advancement of artificial intelligence (AI) presents both unprecedented opportunities and significant challenges for India's labour market.' Examine. Also suggest strategies to align AI adoption with inclusive and resilient labour market outcomes. (15 marks, 250 words)

'कृत्रिम बुद्धिमत्ता (AI) की तीव्र प्रगति भारत के श्रम बाजार के लिए अभूतपूर्व अवसर और महत्वपूर्ण चुनौतियाँ प्रस्तुत करती है।' परीक्षण करें। साथ ही, समावेशी और तन्यशील श्रम बाजार परिणामों के साथ AI अपनाने को संरक्षित करने की रणनीतियाँ भी सुझाएँ। (15 अंक, 250 शब्द)

Artificial Intelligence is the intelligence shown by machines and computers as opposed to intelligence by human. They imitate the functionality of human brain.

⇒ Rapid advancement in AI in form of automation, replacing repetitive task could impact 40% of jobs

⇒ Recent 12,000 layoff of ICS Employee is also a cause of concern



Opportunities presented by AI in India's Labour Market

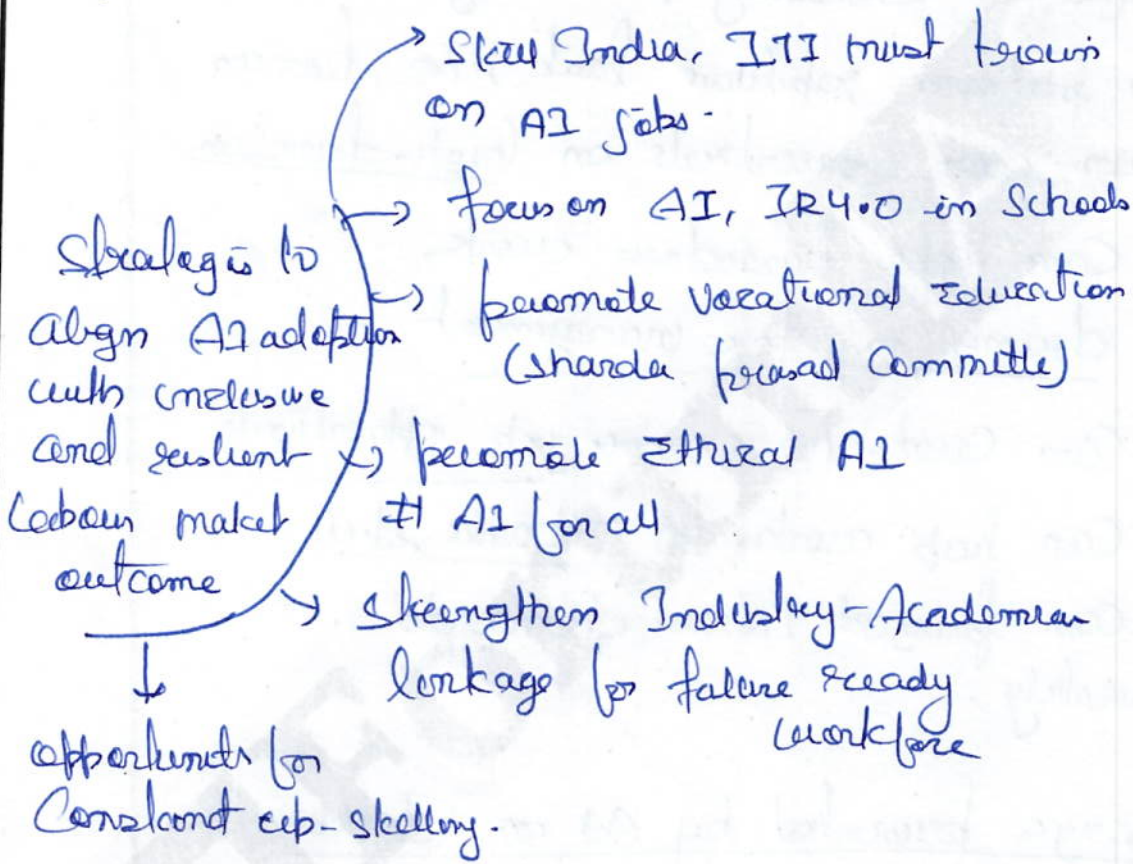
1. Matching high labour skill and job profile → Enhancing productivity
2. Can perform repetitive task, so human brain can concentrate on higher functions
3. It can take hazardous work
(eg) driving in fore management
4. It can create new labour job opportunities
5. It can help workers to enhance skill.
6. It can forecast labour demands accurately.

Challenges presented by AI on India's Labour Market

1. Can lead to concomitment specially in low skill sector
2. It could increase income disparities
3. Leading to mass lay offs.

4. Skills may become outdated, need constant re-skilling.

5. Can lead to discrimination, biases due to biased data.



Thus, due to rising growth of AI, Government has established Centre for Excellence on AI, doing global Collaboration for inclusive and resilient labour market.

Feedback

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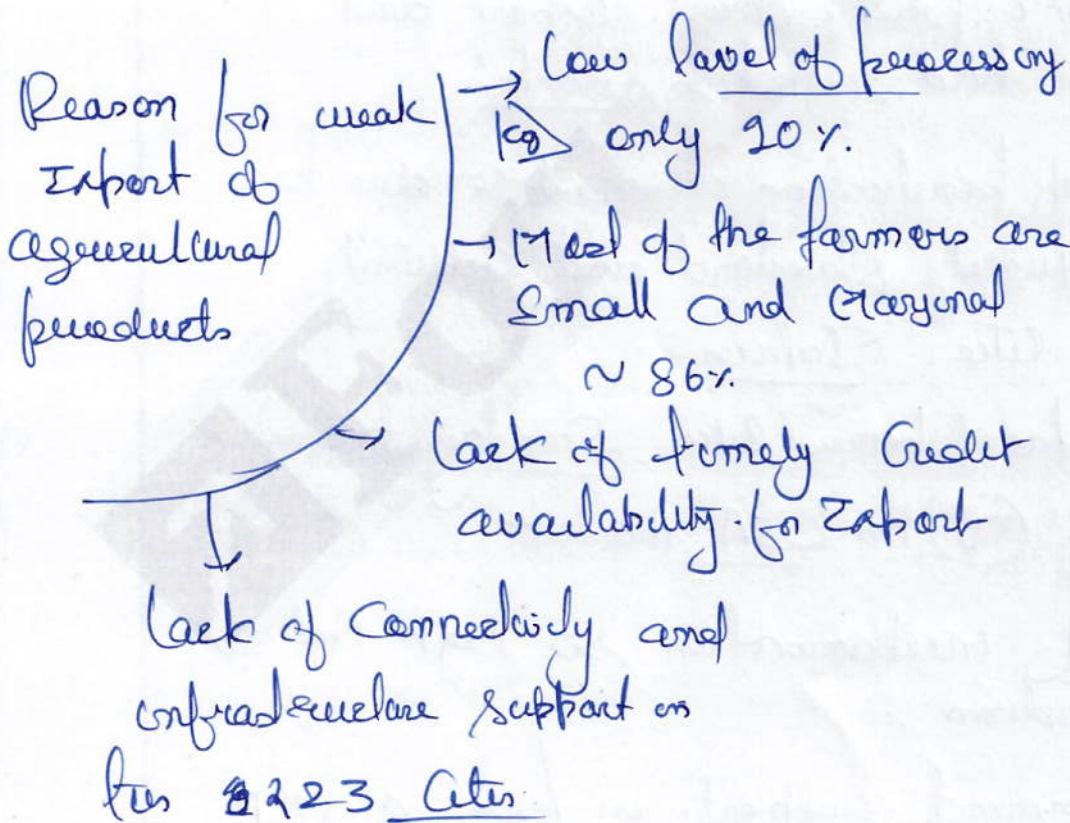


Q.13) Why does India's agricultural export performance remain weak despite high production levels? What measures would you suggest to improve agri-export competitiveness? (15 marks, 250 words)

उच्च उत्पादन स्तर के बावजूद भारत का कृषि निर्यात प्रदर्शन कमजोर क्यों है? कृषि-निर्यात प्रतिस्पर्धात्मकता में सुधार के लिए आप क्या उपाय सुझाएंगे? (15 अंक, 250 शब्द)

India's agricultural export fell in FY 2024 and failed to achieve export target of \$60 billion.

Though India is 2nd largest agri producer, its export performance remains weak.



- Lack of storage and warehousing lead to huge food wastage
- Information asymmetry about market demands
- Economic fragmentation: Tariffs war, Sanctions, most like Crisis
- Irregular policy → Export ban to curb domestic price, hurt export and give bad signal to market
- Lack of penetration in markets due to high quality standard and cultural barriers like Japan
- Non-tariff barriers like Sanitary barriers found (e.g) in USA market.
- Lack of mechanisation so high cost of production,
- government support in form of ISDP to seem as market distorting

So, Needs to improve agri-Export Competitiveness by following ways

1. Integrating AI, IoT, to give information about weather, pests, fertilizer, to enhance quality output
2. Strengthen infrastructure as it cost 10-15% of expenses. via using Kusum Rail, Kusum UGAN
3. Develop dedicated freight corridors
4. APEDA to do brand building and supply market information
 (eg) Kashuri Cotton
5. Provide extension services like Water irrigation, pest and drought resistance seed via Kusum Ugyan Kendra
6. Fund, functions to ICAR

Thus, need to strengthen Annadata, to tap growing demand of organic, processed food across globe and double farmers income

Feedback

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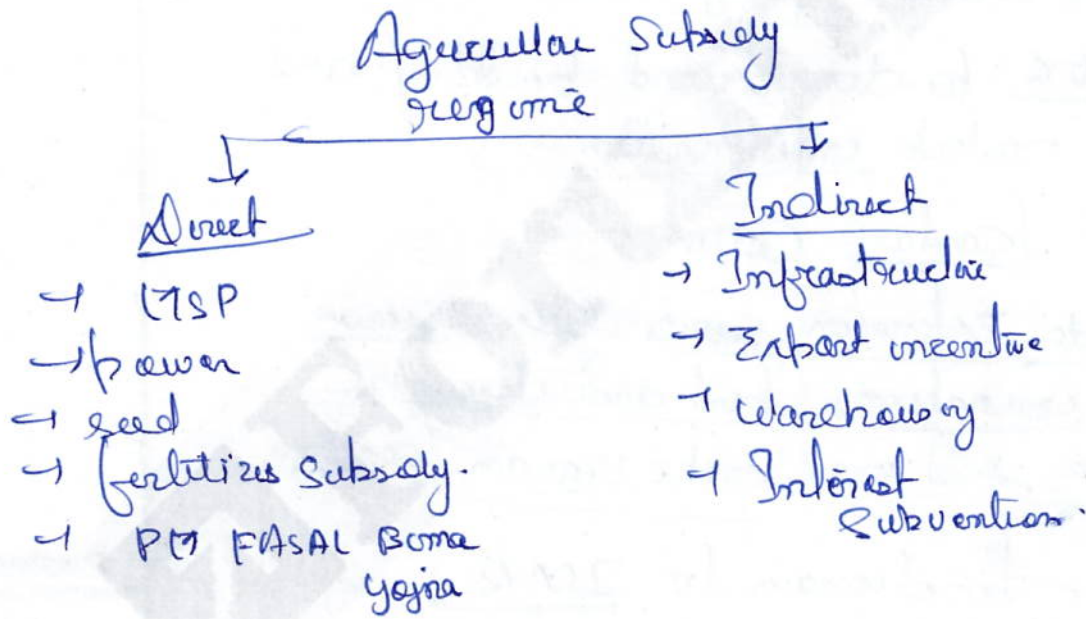
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Q.14) "The agricultural subsidy regime in the country needs reforms to address the distortions it causes." Comment. (15 marks, 250 words)

देश में कृषि सब्सिडी व्यवस्था में सुधार की आवश्यकता है ताकि इससे होने वाली विकृतियों को दूर किया जा सके। टिप्पणी करें। (15 अंक, 250 शब्द)

Agricultural Subsidy has been a contentious issue on trade negotiation at WTO, Concern from Environmental lens, over utilisation, import dependence, so needs to address this distortion.



Distortions Caused due to Subsidy regime are

1. Political: Demand for huge subsidies, for vote bank politics

2. Economic: huge subsidy burden
: Non-capital, non-productive Expenditure
: fiscal deficit
3. Social: large farmers benefited
: Corruption in fertilizer distribution
: black marketing of urea
4. Environmental: overuse of urea affects soil fertility
: leading to alkalinization
5. Health: Lack of protected gear
: not applying in correct methods leads to death

Reforms that can be undertaken to address the distortions caused by subsidy regime

1. Promote Natural, organic farming
① Learn from Sikkim
2. Promote Crop diversification

- (C) Rainfed crops require less fertilizer
3. Implement nutrient based subsidy regime based on Soil health cards
 4. Promote techniques like fertigation, Spreader irrigation to curb overuse
 5. Seek Cooperation to focus on Effective ~~sub~~-fertilizer usage (C) Collaboration with Israel
 6. Curb black marketing via Linking Land data with Soil data
 - (C) Land Reclamation program
 7. Use AI, drones, IoT, to inform farmers about Correct application of fertilizer.

Thus to achieve Sustainable development goal, achieve food security, and uplift farmers, need is to effectively transform Subsidy regime of fertilizer by holistic approach.

Feedback

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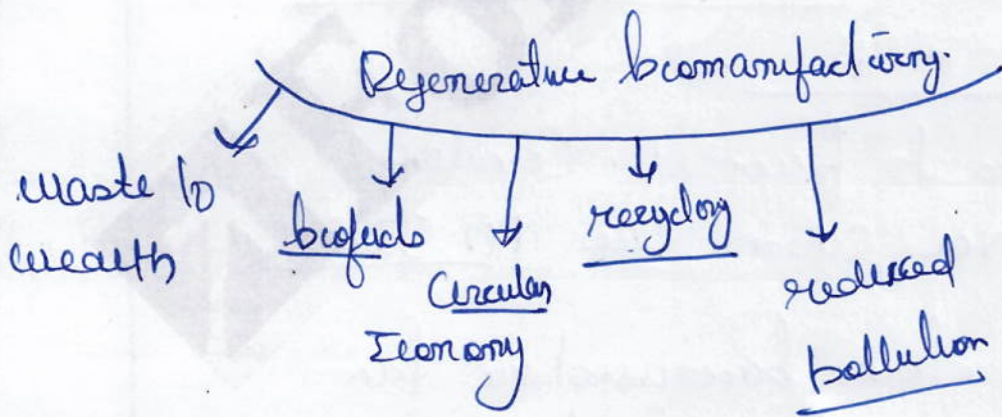
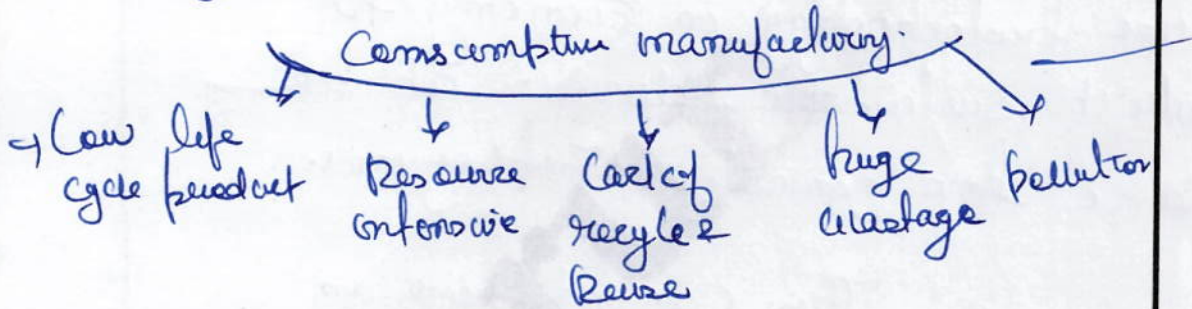
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Q.15) How can biomanufacturing transform today's consumptive manufacturing paradigm to the one based on regenerative principles? Also discuss how BioE3 Policy (Biotechnology for Economy, Environment, and Employment) aims to foster biomanufacturing in the country. (15 marks, 250 words)

बायोमैनुफैक्चरिंग आज के उपभोगात्मक विनिर्माण प्रतिमान को पुनर्योजी सिद्धांतों पर आधारित प्रतिमान में कैसे बदल सकता है? यह भी चर्चा करें कि बायोई3 (BioE3) नीति (अर्थव्यवस्था, पर्यावरण और रोजगार के लिए जैव प्रौद्योगिकी) का उद्देश्य देश में बायोमैनुफैक्चरिंग को बढ़ावा देना है। (15 अंक, 250 शब्द)

Biomanufacturing that is using biological feedstocks, organic materials to transform linear value chain into Circular Economy can transform today's Consumptive manufacturing



Thus, it can promote responsible and minimalist consumption

based on regenerative principles, rather than wasteful and deliberate Consumptive manufacturing.

By 2050, 12% of global GDP will come from bio-Economy.

Bio E3 policy launched by government aims to use biotechnology in Economy to make it sustainable, durable at the same time generating Employment.

This can be done in following ways.

- ①. It aims to promote Circular Economy via schemes like PM JIVAN.
- ②. It incentivises businesses via tax breaks to invest in biotechnology.
- ③. It promotes Start-ups in

Biotechnology -

④ BioRISE Scheme.

④ Strengthen waste to wealth generation

⑤ To promote R&D on biotechnology

⑥ Promote environmental friendly fuel like Biofuel ④ 20% mixing of ethanol in Petrol achieved.

⑦ To promote Reduce, Reuse, Recycle

⑧ Develop trained personnel

⑨ Foster Global Collaboration

④ ⑤ Global biofuel alliance

⑩ Generate Green jobs

④ ⑤ Solar Cuisines.

Thus, it can lead to self-sustaining, regenerative and circular economy, that maximizes resource efficiency to achieve Panchamula targets

Feedback

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Q.16) The future of digital innovation depends on self-reliant, domain-specific AI capabilities. In this context, bring out the key considerations in developing indigenous AI models and tools. Suggest measures to build an enabling ecosystem for AI innovation in India. What initiatives have been taken by the government in this regard? (15 marks, 250 words)

डिजिटल नवाचार का भविष्य आत्मनिर्भर, डोमेन-विशिष्ट AI क्षमताओं पर निर्भर करता है। इस संदर्भ में, स्वदेशी AI मॉडल और उपकरण विकसित करने में प्रमुख विचारों को स्पष्ट करें। भारत में AI नवाचार के लिए एक सक्षम पारितंत्र बनाने के उपाय सुझाएँ। इस संबंध में सरकार द्वारा क्या पहल की गई है? (15 अंक, 250 शब्द)

AI is the machines mimicking functionality of human brain. For digital and technological sovereignty we need self-reliant and domain specific AI Capabilities.

Key Consideration in developing indigenous AI models & tools are →

1. Inclusivity → It must be Equitable, non-discriminatory to women, vulnerable, women.
⊕ AI treatly minors as criminals
2. Sustainability → It require huge computer, electricity demands
3. Data privacy → Indigenous data centres are required.
4. Data safety → Strengthen Cyber security to curb breaches and

Cyber-Resilience

5. Open-transparent development to generate trust and reliability
6. Develop indigenous hardware, software Logic, Language models
7. Collaborate with private sector to tap resources and innovation

Policy to build Enabling Ecosystem for AI innovation in India.

1. Promote AI start-ups
2. Implement digital data protection act
3. Train personnel on AI.
4. Establish National AI regulator
5. Ensure inclusiveness; transparent data
6. develop renewable Energy source for AI data Centres.
7. AI Centre of Excellence in IITs.

Initiatives taken by government on this regard are

1. Established AI data trust for data to train AI model and tools
2. Niti Aayog - Kamrajoti Panel on AI, identified sectors like Agriculture, transport for AI
3. RAISE: for Ethical and inclusive AI for all
4. CBSE introduced AI Education in Schools
5. Implemented digital data protection Act
6. Hosted AI Summit
7. Part of Bletchley declaration on AI for risk based approach.
8. Using AI tools on Governance

Thus, there is momentum for AI, need is to collaborate with private sector, provide regulatory ease for becoming an AI Enabled Efficient Economy

Feedback

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Q.17) Marine oil spills are a form of environmental disaster, with far-reaching consequences for biodiversity and coastal livelihoods; however, India's preparedness to prevent such incidents and mitigate their impact has significant gaps. Analyze. (15 marks, 250 words)

समुद्री तेल रिसाव एक प्रकार की पर्यावरणीय आपदा है, जिसके जैव विविधता और तटीय आजीविका पर दूरगामी परिणाम होते हैं; हालाँकि, ऐसी घटनाओं को रोकने और उनके प्रभाव को कम करने के लिए भारत की तैयारियों में महत्वपूर्ण अंतराल हैं। विश्लेषण करें। (15 अंक, 250 शब्द)

Rising sea based trade and booming shipping sector has led to marine oil spills becoming concern impacting biodiversity and livelihood of people.

① Kochi oil spill

Impact of Marine oil spill on biodiversity

1. It releases concentrated pollutants in water
 2. Leads to death, destruction of marine life
- ② Chennai oil spill
- ③ It impacts marine food chain
 - ④ Chemical oil spill
 - ⑤ Leads to destruction of corals.
 - ⑥ Leads to stoppage sunlight
 - ⑦ forms dead zone by reducing

Oxygen supply.

⑦ Can lead to DNA changes

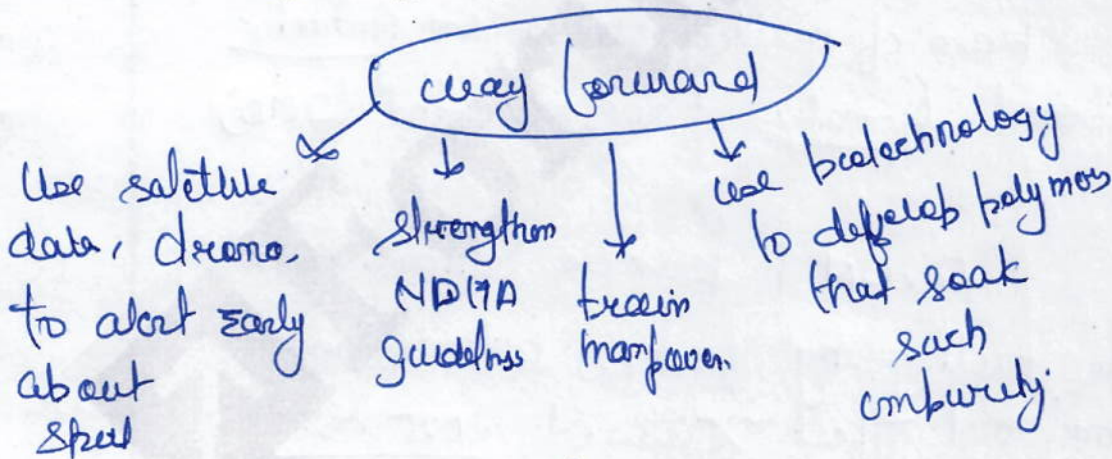
Consequences on Coastal livelihoods

1. Death of fishes can impact livelihood of fishermen
2. It impacts food security of Coastal areas
3. Leads to decreased tourism.
4. Bio-accumulation can lead to decrease in exports.
5. It can impact aquaculture trade and food processing sector

India has signed Marpol Convention and is part of UN high seas treaty, but there are significant gaps to mitigate impact of such incidents →

① Lack of marine pollution cleaning tools, mostly are imported

2. Lack of standard procedure to tackle such issue
3. Lack of awareness among people to respond to such incidents
4. Ineffective response to curb such incident.
5. Not effective on checking quality of vessels
6. Ports are under-prepared for such mishaps
7. Charge found to Municipalities of Coastal area to tackle such issue.



Thus, for effective blue Economy and save biodiversity India need to plug gaps in marine oil spill disaster mitigation and recovery

Feedback
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Q.18) 'The United Nations has declared 2025 as the International Year of Glacier Preservation.' Bring out the ecological and socio-economic significance of glaciers. What are the key challenges in preserving them? What measures have been taken at national and international levels towards preservation of glaciers? (15 marks, 250 words)

'संयुक्त राष्ट्र ने वर्ष 2025 को अंतर्राष्ट्रीय ग्लेशियर संरक्षण वर्ष घोषित किया है।' ग्लेशियरों के पारिस्थितिक और सामाजिक-आर्थिक महत्व को उजागर करें। उन्हें संरक्षित करने में मुख्य चुनौतियाँ क्या हैं? ग्लेशियरों के संरक्षण के लिए राष्ट्रीय और अंतर्राष्ट्रीय स्तर पर क्या उपाय किए गए हैं? (15 अंक, 250 शब्द)

Glaciers are permanently frozen and Ice Covered surface of Earth.

Challenging to → Antarctica losing 30 million ton ice per hour
Glaciers → If all glaciers melt sea volume will increase by 60m (UN)
↓
Venezuela lost all its glaciers.
Rate of melting glaciers in Antarctica and Himalayas have increased (IPCC)

So, UN to preserve glaciers and halt its melting by fostering national and international effort declared 2025 as International year of Glacier preservation

Key Challenges in preserving them

① Rising Green house Gas Emission

- ② Decision of north and south on climate talks
- ③ Coal phase out - phase down
- ④ COP 29 Balco set target of \$300bn finance, but requirement is more than \$1 trillion by 2030 to ~~at~~ halt global warming
- ⑤ Cost of technology transfer for Carbon-capture and storage
- ⑥ Development vs Environment debate due to Climate denials

Conservation of Glaciers is important because they have huge significance.

I. Ecological → regulate and reflect incoming solar radiation
 ↓ sustain biodiversity
 ↓ melting and release pollutants
 ↓ Regulate heat budget of earth

II Socio-Economic significance

1. provides livelihood to coastal population.

2. Storehouse of fresh water
3. Sustains Atlantic meridional oceanic circulation; help to sustain human life
4. promotes tourism. (9) Hickey on Amalgams
6. Source of swims, irrigation projects.

National Effects → updated IMOC, adopted net zero goal by 2050
 → Treaty for protection of Antarctic Ecosystems
 → Antarctic Treaty
 → RES : Humboldt, Nature research stations

International Effort → Antarctic Treaty : restricts human activity
 → freezing and restoring ice in glaciers
 → Kyoto - Montreal Protocol to protect 30% of sea.
 → promoting E-vehicles, Curbing Emission
 → developing Carbon-Capture and storage technologies.

Needs to hurry up, option is for us, Collective action on collective Sustainable.

Feedback

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Q.19) What are the determinants of insurgency in the north-eastern region of India? What strategy should the Government of India, civil administration and security forces adopt to counter the threat in the affected areas? (15 marks, 250 words)

भारत के उत्तर-पूर्वी क्षेत्र में उग्रवाद के निर्धारक तत्व क्या हैं? प्रभावित क्षेत्रों में खतरे का मुकाबला करने के लिए भारत सरकार, नागरिक प्रशासन और सुरक्षा बलों को क्या रणनीति अपनानी चाहिए? (15 अंक, 250 शब्द)

Insurgency is armed resistance, violent activity to overthrow democratically elected government.

Determinants of Insurgency in North-Eastern region of India are

1. Geographical factors: Rivers, mountains, complex topography give hideout to insurgents
2. Complex border: is used as escape from security forces.
↳ NSCA/TICOM Myanmar
3. Lack of development → issue to unemployment, social services inefficient like health, education creates discontent
4. Border smuggling → of arms, gun, drugs fuel insurgency

5. Migrants: due to porous borders and Cross-border free trade insecurity, violence to preserve Culture.
6. International: to non-state actors to support destabilize India

India aims to end insurgency by 2026.

To achieve this following strategy is needed:

- Security forces: Increase surveillance on
 - borderlines
 - : timely intelligence gathering
 - : using drones, GPS to track naval movement
 - : Community engagement via programs like ROSHNI to 'Jaan Trust'
 - : Combine surveillance and vigilance so as to not violate Human Rights
 - ↳ Jeevan Ready Commission

II Civil administration:

- : Skilled development by Skill India Mission
- : promote gender employment
- : Strengthen Connectivity
- : promote tourism.
- : Efficient, Corruption free administration

III Government of India

- : peace negotiation with insurgent groups
 - (eg) Assam Bodo accord
- : Border fencing, patrolling, demarcation
- : Cooperation with neighbours to curb militant trans-boundary scope
 - (eg) operation ~~adroit~~, Sunrise
- : Advanced creation to security forces
- : Implement SARA RHA Strategy.
- : Curb Smuggling, migration.

Thus, by multifaceted and whole of government approach insurgency has declined. Can be completely eradicated from Indian soil

Feedback

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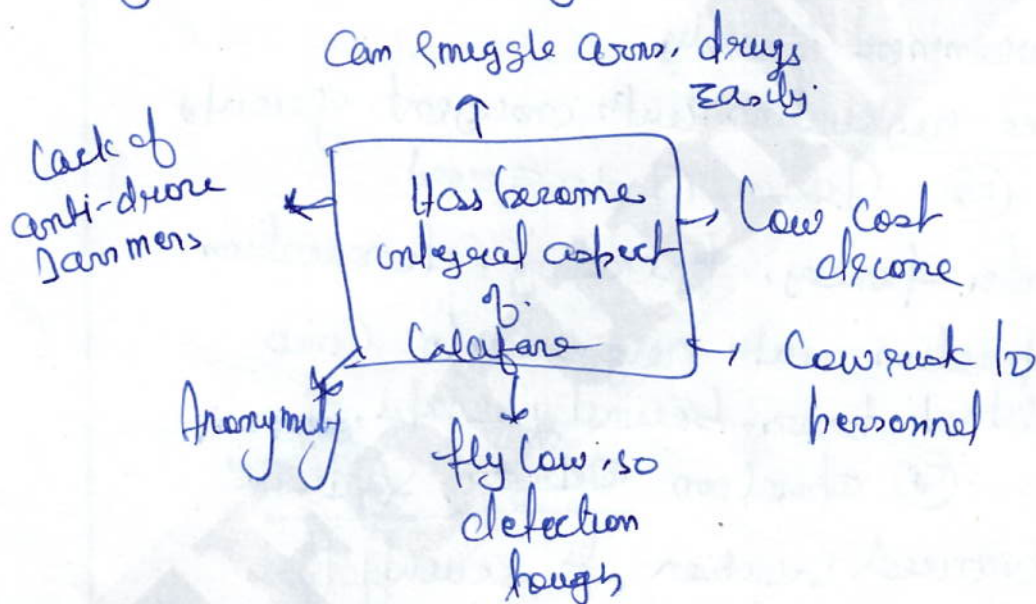
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TOTAL MARKS			



Q.20) Unmanned Aerial Vehicles (UAVs) have become an integral aspect of modern conflict and warfare, employed by both state and non-state actors. Discuss its implications for India's security architecture and state the measures being taken to address them. Also suggest other steps to tackle the threats emanating from UAVs. (15 marks, 250 words)

मानव रहित हवाई वाहन (UAVs) आधुनिक संघर्ष और युद्ध का अभिन्न अंग बन गए हैं, जिनका उपयोग राज्य और गैर-राज्य दोनों ही प्रकार के अभिकर्ता करते हैं। भारत की सुरक्षा संरचना के लिए इसके निहितार्थों पर चर्चा करें और उन्हें संबोधित करने के लिए किए जा रहे उपायों का वर्णन करें। UAVs से उत्पन्न होने वाले खतरों से निपटने के लिए अन्य कदम भी सुझाएँ। (15 अंक, 250 शब्द)

Unmanned Aerial vehicle (UAV) are remotely operated without pilot air system, having multiple utility and dual usage.

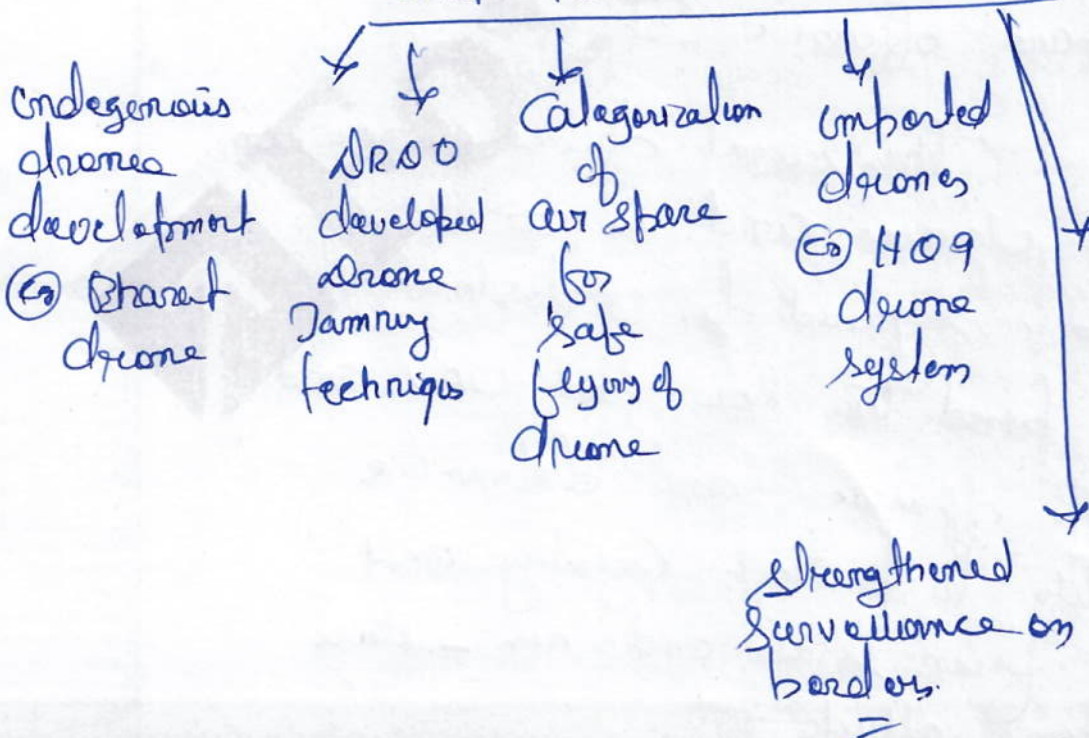


Implications of India's Security architecture

- ① Can conduct strike on military base
 - Ⓐ drone attack on Jammu airbase
- ② Can smuggle arms
 - Ⓒ permeability emergency on western border

- ③ Needs effective surveillance of borders
- ④ Chances of greyzone warfare, conventional defence fails
- ⑤ Long-range missile system difficult to take down drones
- ⑥ Drug smuggling can destroy social structure ⑦ youth radicalization by using narrow terrorism
- ⑦ destabilizing Economy by sending counterfeit currency notes via drones

Steps taken to address them



Steps to tackle threat from UAVs

1. dedicated battalion with effective training to operate drone
2. develop technology to counter low flying object.
3. training of border state police in drone warfare
4. promote start-up in defence
5. strengthen defence R&D, finance
 - ⊕ Ugyan dhara Scheme
6. prepare offensive Capabilities.

The recent drone usage in Russia-Ukraine and in attack by Pakistan, required to understand the threat posed via low-cost UAV and develop offensive and defensive Capabilities to protect Country and people from state and non-state actors attack.

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
20 Marker	7.75 - 10	6 - 7.5	< 6
	Key / Relevant Point		
	Vague / Irrelevant		

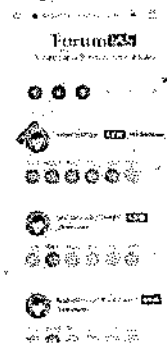
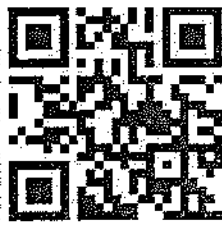
* Subject to change without prior notice.

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