



**VISIONIAS**  
INSPIRING INNOVATION  
**ABHYAAS MAINS**

**सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)**

निर्धारित समय: तीन घंटे  
Time Allowed: **Three Hours**

अधिकतम अंक: 250  
Maximum Marks: 250

**सामान्य अनुदेश**

इस प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका में 55+1 पृष्ठ हैं। प्रश्न-पत्र, क्यू.सी.ए. पुस्तिका के अंत में संलग्न है, जो अलग (वियोज्य) किया जा सकता है और उम्मीदवार परीक्षा के उपरांत अपने साथ ले जा सकते हैं।

रफ कार्य के लिए, इस पुस्तिका के अंत में खाली पृष्ठ दिया गया है।

पुस्तिका प्राप्त होने पर, कृपया यह जांच कर लें कि इस क्यू.सी.ए. पुस्तिका में कोई कमी न हो, फटा हुआ पृष्ठ न हो अथवा कोई पृष्ठ गायब न हो इत्यादि। यदि ऐसा हो, तो इसके बदले नई क्यू.सी.ए. पुस्तिका प्राप्त कर लें।

**General Instructions**

*This Question-Cum-Answer (QCA) Booklet contains 55+1 pages. Question Paper in detachable form is available at the end of the QCA Booklet which can be taken away by the candidate after examination.*

*For rough work, blank page has been provided at the end of this Booklet.*

*On receipt of the Booklet, please check that this QCA Booklet does not have any shortcomings, torn or missing pages etc. If, so, get it replaced with a fresh QCA Booklet.*

(उम्मीदवार द्वारा भरा जाएगा/To be filled by the Candidate)

पंजीकरण सं./Registration No. : 00998375

अभ्यर्थी का नाम/Name of Student : NITISHA THAKWANI

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

**ENGLISH**

तारीख  
Date

**25/08/24**

**सामान्य अध्ययन (प्रश्न पत्र-III)  
GENERAL STUDIES (Paper III)**

केंद्र  
Centre

**Bhai Joga Singh .  
Delhi**

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

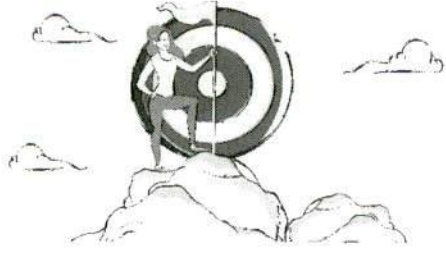
**Rajkumar**

	<p style="text-align: center;"><b>महत्वपूर्ण अनुदेश</b></p> <p>उम्मीदवारों को नीचे उल्लिखित निर्देश सावधानी से पढ़ लेने चाहिए। किसी भी निर्देश का उल्लंघन करने पर उम्मीदवारों को मिलने वाले अंकों में कटौती, उम्मीदवारी रद्द या आयोग के परवर्ती परीक्षाओं के लिए वर्जित करने इत्यादि के रूप में दण्डित किया जा सकता है।</p>	<p style="text-align: center;"><b>Important Instructions</b></p> <p>Candidates should read the undermentioned instructions carefully. Violation of any of the following instructions may entail penalty in the form of deduction of marks, cancellation of candidature, debarment from further Examination of the Commission etc.</p>
1	<p>(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें।</p> <p>(ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पंजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।</p>	<p>(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates.</p> <p>(b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet</p>
2	<p>अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।</p>	<p>Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.</p>
3	<p>परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।</p>	<p>Do not make any direct/indirect appeal/threat to the examiner.</p>
4	<p>उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।</p>	<p>Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.</p>
5	<p>उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।</p>	<p>Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.</p>
6	<p>प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।</p>	<p>Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.</p>
7	<p>प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।</p>	<p>Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.</p>
8	<p>यदि आप अपने किसी उत्तर को रद्द करना चाहते हैं तो उसे पेन से काट दें तथा उस पर "रद्द" लिख दें, अन्यथा उसका मूल्यांकन किया जा सकता है।</p>	<p>If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.</p>

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

**प्राप्तांक के विवरण (परीक्षक द्वारा भरा जाए)/ Marks Details (To be filled by the Examiner(s))**

प्रश्न सं. Q. No.	अंक Marks		प्रश्न सं. Q. No.	अंक Marks	
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		
उप-योग (A) Subtotal (A)			उप-योग (B) Subtotal (B)		
<b>सकल योग (A+B) / GRAND TOTAL (A+B)</b>					



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निर्धारित समय: तीन घंटे  
Time Allowed: **Three Hours**

अधिकतम अंक: 250  
Maximum Marks: 250

**प्रश्न-पत्र संबंधी विशेष अनुदेश**

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

*Please read each of the following instructions carefully before attempting questions.*

*There are TWENTY questions printed both in HINDI and in ENGLISH.*

*All questions are compulsory.*

*The number of marks carried by a question/part is indicated against it.*

*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. No marks will be given for answers written in a medium other than the authorized one.*

*Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.*

*Keep the word limit indicated in the questions in mind.*

*Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.*

## EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

**All the Best**

1. खाद्य प्रसंस्करण उद्योग का तीव्र विकास किस प्रकार भारत में खाद्य सुरक्षा संबंधी चुनौतियां उत्पन्न कर रहा है? (उत्तर 150 शब्दों में दीजिए)  
How is the rapid growth of the food processing industry leading to food safety challenges in India? (Answer in 150 words)

Food processing sector is considered to be a sunrise sector as it contributes to 11% jobs, 23% GVA, 39% manufacturing GVA.

However, it has food safety challenges

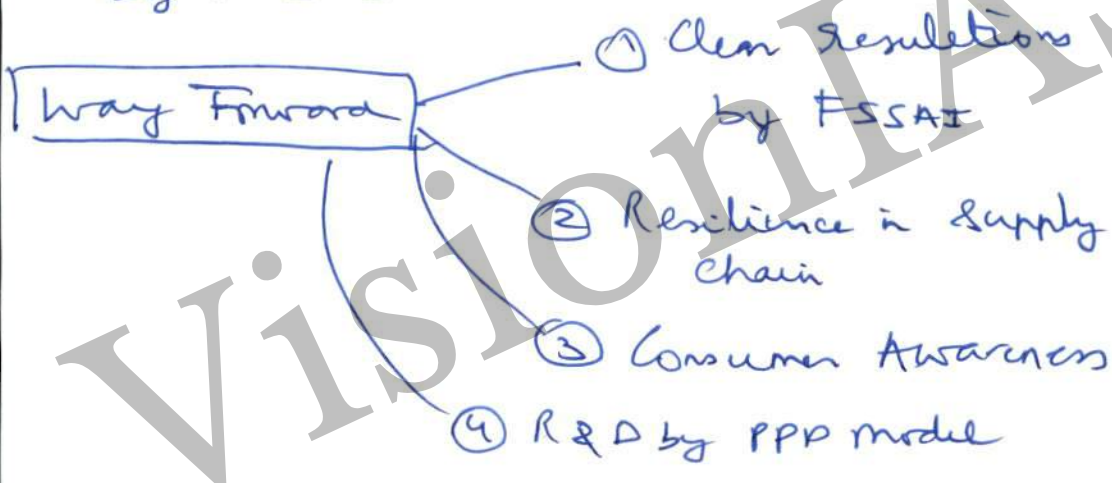
① Addition of preservatives to improve the shelf life of food products

② Trans fat - eg Oil addition, nitrogen flushes of chinese packet

③ Issue of shelf life - perishable items may get attacked by microorganism due to poor supply chain storage facilities

④ Expiry period of food products - Companies may extend expiry period to enhance consumption

- ⑤ Taste and preferences of food products not in ~~line~~ line with the demand
- ⑥ Issue of safe transportation - due to delay, storage, etc
- ⑦ High logistics cost may increase cost of food products
- ⑧ Lack of standardized regulation by FSSAI



As envisaged in Budget 2024-25 enhanced contribution for storage (₹5000 crore) and cold chains will help in addressing food safety issues to meet SAG 2 (No hunger)

2.

भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)  
Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

Public Distribution System (PDS) is a logistical marvel that has provided food security to 80 crore population through state managed Fair Price Shops (FPS)

FPS transformation - evolution taken place

- ① Point of Sale machine → electronized to reduce pilferage
- ② Use of CCTV to keep a check on input-output sales
- ③ Infrastructure enhancement (eg) Cold Storage, a clean storage place, mould control medicines, etc
- ④ Duration of running → Increased from 7 days to 14 days - for utilization of resources
- ⑤ Centralized database of all FPS for monitoring

## Issues still exist

① Poor supply chain - time taken to transport food grains is long - of results in perishable items

② Pilferage by shop owners

③ Charging higher than central issue Price (CP → ₹2 for rice and ₹3 for wheat)

④ Shut down of FPS due to lack of accountants

## Way Forward

① Sharda Prasad Committee

↳ RFID in FPS

② Convert FPS to Jan Poshan Kendriyas

③ PPP model in R&D

④ Awareness among citizens

PDS as the backbone of food security and welfare needs of the poor can be strengthened through Innovation and collective efforts by State & Center

3.

भारत में एग्रीटेक स्टार्ट-अप्स किसानों की कृषि उत्पादकता एवं बाजार पहुंच बढ़ाने में किस प्रकार मदद कर रहे हैं? (उत्तर 150 शब्दों में दीजिए)

How are agri-tech startups in India helping farmers in enhancing farm productivity and market access? (Answer in 150 words)

10

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
Candidates must not write on this margin

Agriculture employs 45% population, uses 83% of freshwater and utilizes 60% of land, making the role of agri-tech startups very vital to transform the way of doing business.

### Agri-tech-start ups

#### I Enhance Farm Productivity

##### ① Pre Agriculture solving

- Information dissemination

(eg) Chitkoot app on ~~crop~~ suitability of crop

- Soil testing and weather forecast

##### ② During sowing

- Efficient techniques of crop sowing

(eg) Fertilization of seeds information

- Availability of ~~tools~~ tools and machines (eg) Custom Kiosk Centers

### ③ Harvesting information

- ① Storage centers for farmers
- ② Information on timely harvesting

### II Market Access

- ① Application on information of nearest APMC
- ② Collection at Farm Gate from the farmers (e) FAMBO
- ③ Information on e-NAM Centers

### Issues

- ① low level of technology R&D
- ② limited public-private partnership
- ③ Lack of awareness among farmers

### Way Forward

- ① Digital literacy
- ② Awareness
- ③ Technological Infrastructure

Thus, technology delivery through agri-start ups can aid in doubling farm income (Dalewai Committee)

4.

भारत में भूमि सुधारों के प्रभावी कार्यान्वयन में भूमि अभिलेखों के डिजिटलीकरण की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Discuss the role of digitization of land records in the effective implementation of land reforms in India. (Answer in 150 words)

10

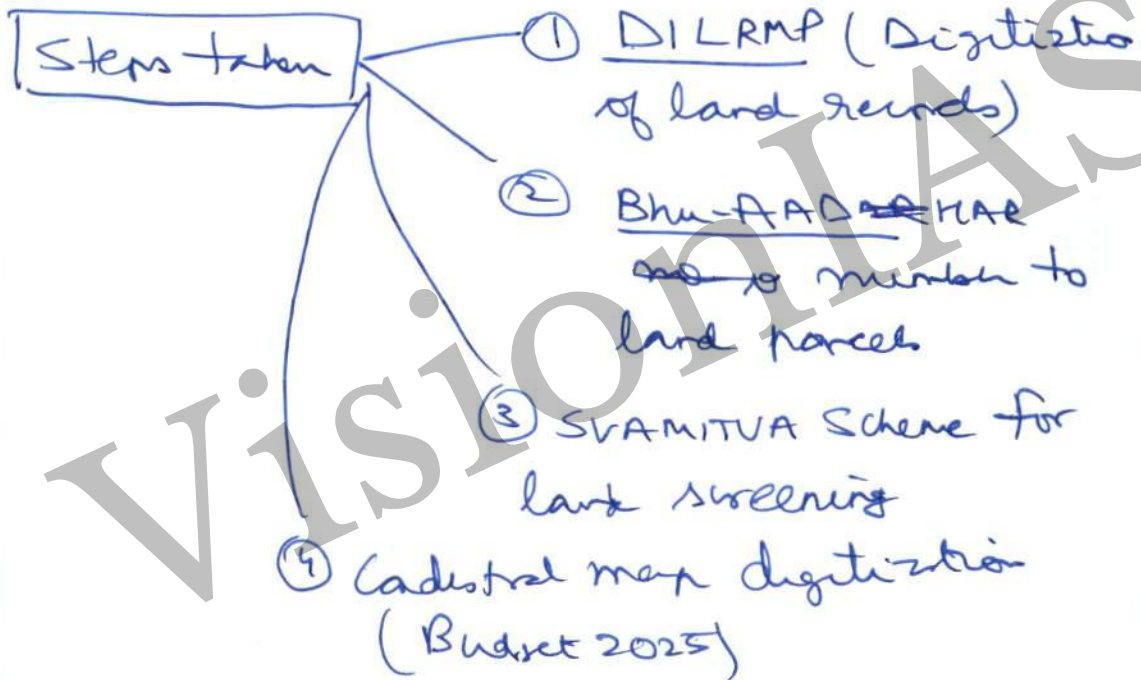
Budget 2024-25 called for digitization of land records and cadestral maps for effective utilization of land resources.

### Role of digitization of land records

- ① Effective land utilization due to clear ownership rights
- ② Reduce legal litigation in courts  
eg) Bibek Debroy Committee noted 66% of civil suits are land related
- ③ Promote economic development  
⇒ It may add 0.48% to GDP (Debroy Committee)
- ④ Land identification for private utilization and infrastrucure purpose  
eg) R Land for railways

⑤ Identification of farmer beneficiaries  
⇒ 60% land under agriculture  
so disbursement of funds like PM-KISAN  
easier

⑥ Land consolidation → Average ownership  
is 1.08Ha ⇒ enhance productivity  
due to consolidation of land



The unfinished business of  
Land Reforms as envisaged by JC Kumarappa  
committee can be fulfilled through  
present efforts of land digitization, which is  
an important factor of production.

5.

भारत को अपने जनसांख्यिकीय लाभांश का पूर्ण उपयोग करने और आर्थिक विकास में तेजी लाने के लिए एक विनिर्माण-केंद्रित विकास मॉडल को अपनाने की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

To fully exploit its demographic dividend and accelerate economic growth, India needs to adopt a manufacturing-led growth model. Discuss. (Answer in 150 words) 10

उम्मीदवारों को इस इलाक़े में नहीं लिखना चाहिए  
Candidates must not write on this margin

India has entered its demographic dividend phase in 2018, which is expected to peak by 2055 in 37 years, which is going to contribute to India becoming developed by 2047.

Need for manufacturing led growth model

① For demographic dividend

① Job creation

Currently, manufacturing sector employs 25% of workforce → shift to job led growth via manufacturing

② Rajiv Kumar Rajan Committee ⇒

Manufacturing is a flexible sector that can employ high population

③ Promote ancillary growth As per World Bank 1% increase in contribution by manufacturing to GDP increases 2-3% jobs

④ Reduce disguised employment in agricultural sector

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

## II Accelerate Economic Growth

① Experience from China led growth model ~~is~~ on manufacturing led growth

② Economic Survey 2024 → Export led growth through manufacturing via enhance manufacturing capacity

③ Bottom to top growth - Enhance demand in rural areas due to manufacturing - Demand led economic growth

### Way Forward

- ① Skill development  
eg) Budget 2024 → ITI development
- ② Industry Academic Linkage (Shanku Prasad Committee)
- ③ Infrastructure  
eg) ₹ 11.11 lac crore in Budget

Thus, manufacturing led growth will kickstart Indian economy, promote sustainable growth and aid in demographic dividend utilization

6.

जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words)

10

उम्मीदवारों को इस दृष्टि में नहीं लिखना चाहिए  
Candidates must not write on this margin

India has 7500 coastline, making it vulnerable to natural hazards due to climate change

Ways to enhance resilience

LEGAL

① Disaster Management Amendment Act 2005

- ↳ Include local level disaster team
- ↳ Funds for mitigation
- ↳ Training of local communities

Institutional methods

- ① UDREF (Urban development response Fund)
- ② Aapasa Mitra Scheme to train youth

## Other measures

- Structural measures to build  
Cyclone protection zones
- Non structural measures - adhere to  
NDMA guidelines

These steps can help to  
protect lives and livelihoods & SAGZ

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7.

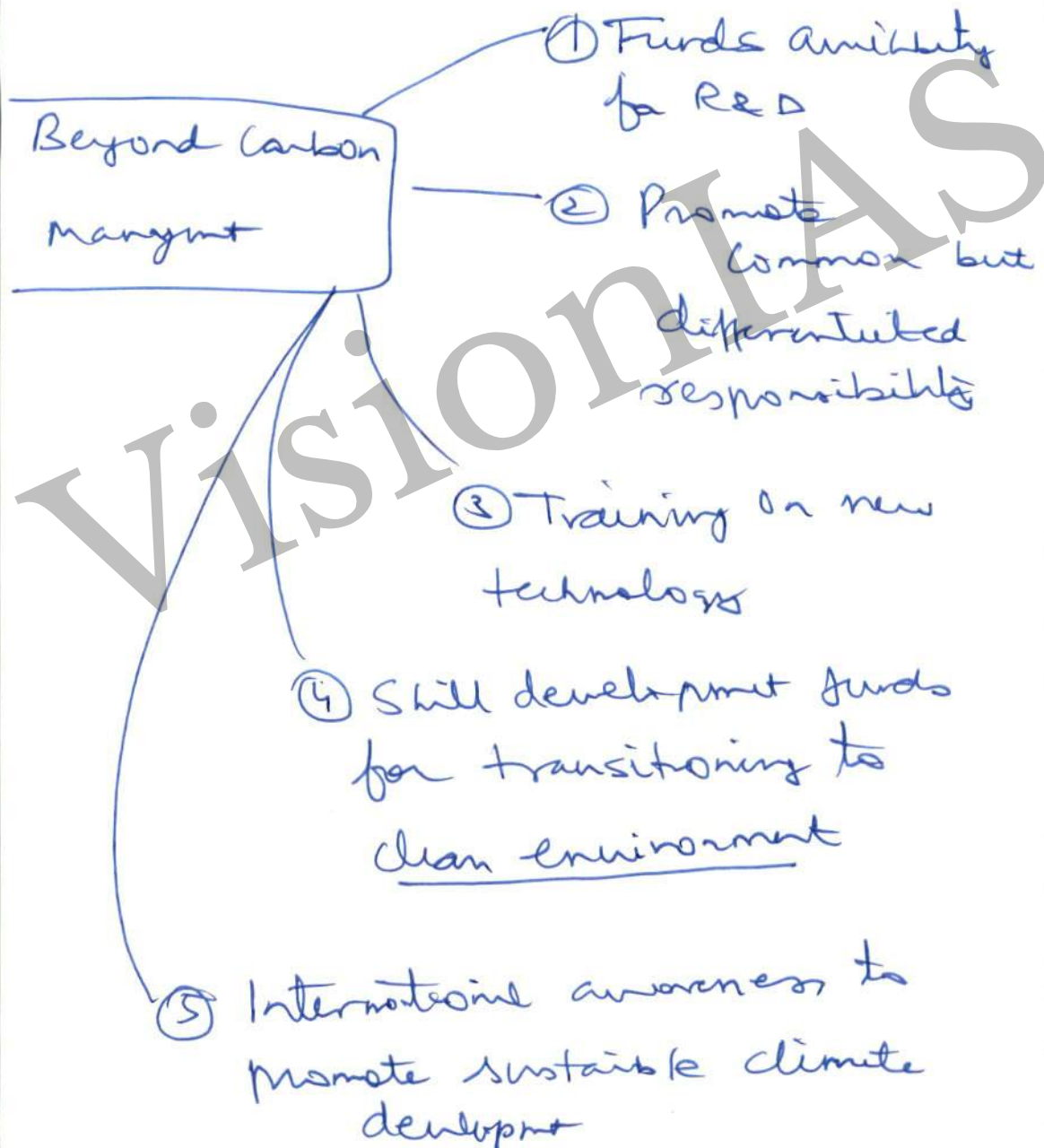
भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 शब्दों में दीजिए)

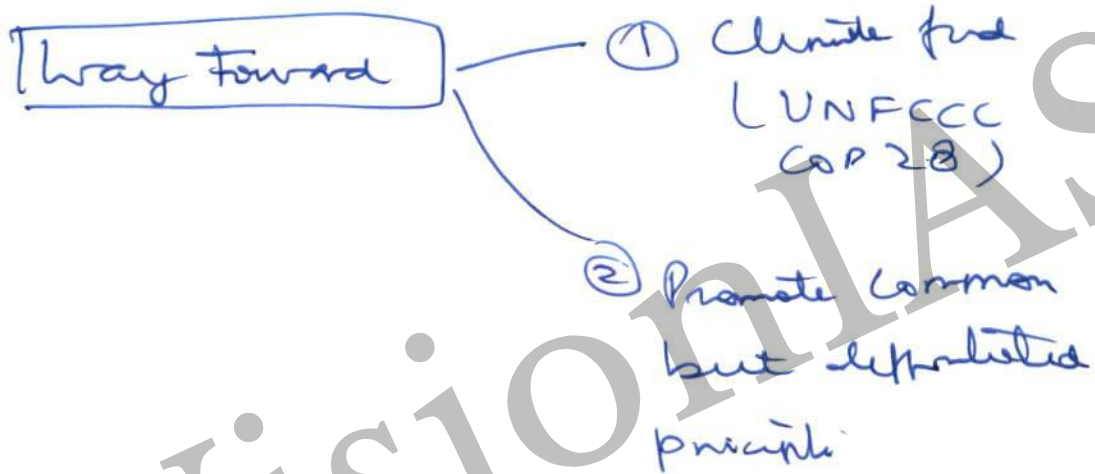
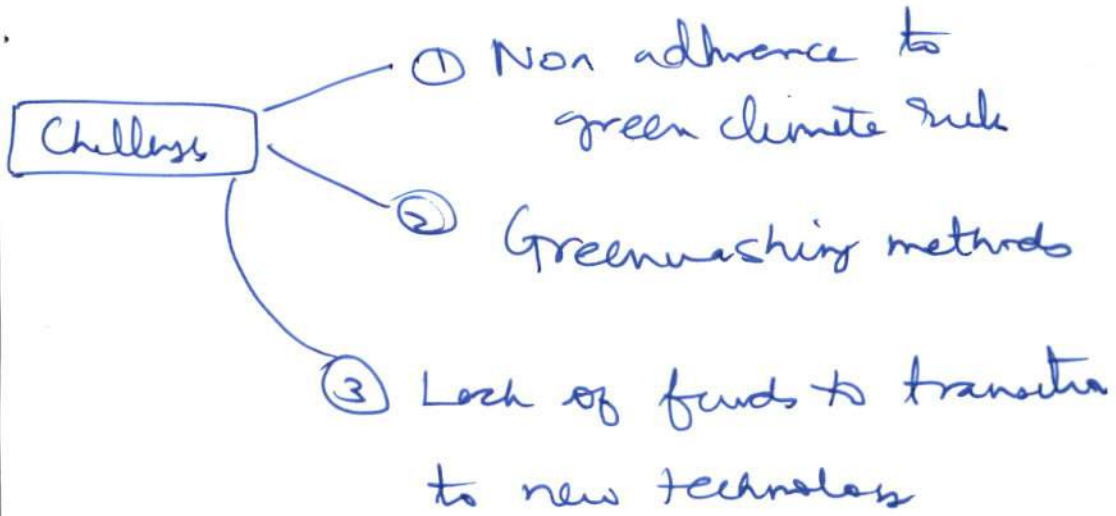
How does the Green Credit Programme extend beyond carbon management to promote a more sustainable environment in India? What are the various concerns about its implementation? (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

Green Credit Programme (GCP)  
aims to provide credit incentives to companies promote carbon management to address the issue of climate change





Thus, GCP can promote growth with responsibility, stability with sustainability and growth with green approach

8. जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)  
What is the need for NavIC when existing satellite navigation systems are already available? (Answer in 150 words) 10

(IRNSS)  
NAVIC is an indigenous navigation satellite system, to reduce dependency on Global Positioning System (GPS) of USA. (

### Need for NAVIC

① Security Issues → to utilize own data effectively in real time to secure border issues

② Reduce dependency on USA → may be used as instrument of arm twisting

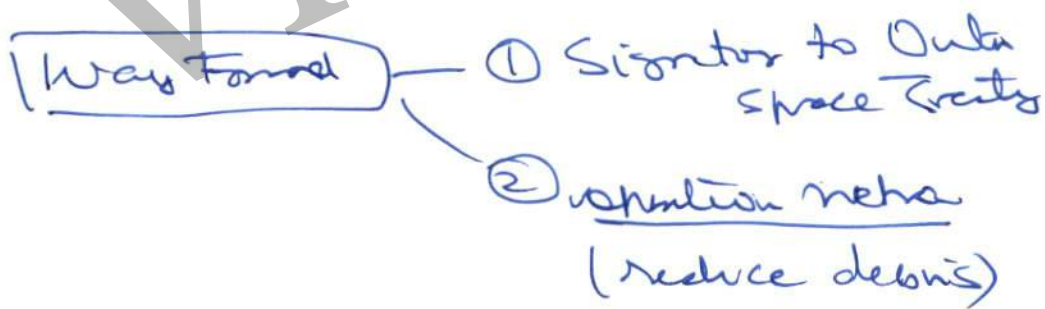
③ USA does not share all data which may be useful for India

④ Promote Atmanirbhar Bharat  
⇒ Self reliance

⑤ Utilize the development of India in Space sector - role model for other countries

⑥ Help Global south with data collected and security around border

⑦ Range of IRNSS IRNSS (NAVIC) is 1500 km to keep an eye on neighbours and quick security deployment



with India Space Policy 2023

India's development of NAVIC has made India a Vishwasguru on ground of self reliance led by technology

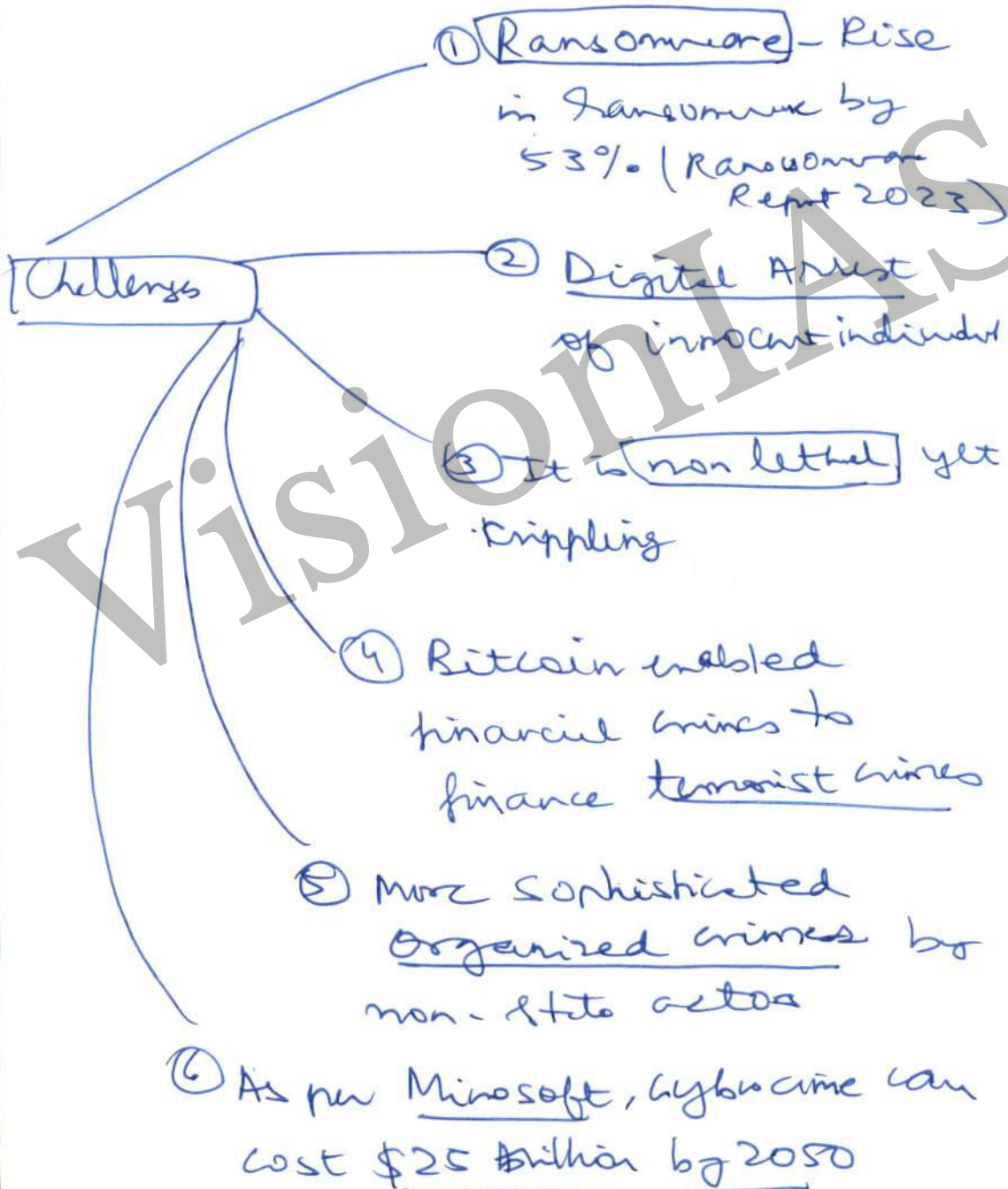
9.

साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words) 10

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए। Candidates must not write on this margin

Money laundering is the process of hiding the money earned illegally, is becoming a more sophisticated through Cyber enabled financial crime.



## Ways Government has addressed

### ① Legal Measures

Amendment of IT Act 2008 to define  
Cybercrime and penalties

New Bharatiya Nyaya Sanhita (2023)  
Penalizes cyber crimes

Inclusion of individuals, amendment to  
Prevention of Money Laundering Act (AMLA)  
Act

### ② Institutional Measures

① Cyber Swachhta Kendras (CSK)

② NATGRID to employ trained  
personnel to address cyber crime

③ Cyber Dome by Kerala to address  
Cyber crime

### ③ Other

① Helpline number

② Consumer Awareness, SMS, emails

Money laundering bleeds the economy  
which is accentuated by cyber crimes, need  
holistic laws and institution to address it.

10.

इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्रक में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. In light of this, explain why there is a need for technology absorption in the defence sector of India. What challenges can India face in this initiative? (Answer in 150 words)

10

As India entered the decade of TECHADE, technology is being utilized to upgrade the Indian Army through technology Absorption.

### Need for technology in Defence

① New zone of warfare → cyber threat which is not ~~total~~ lethal yet crippling

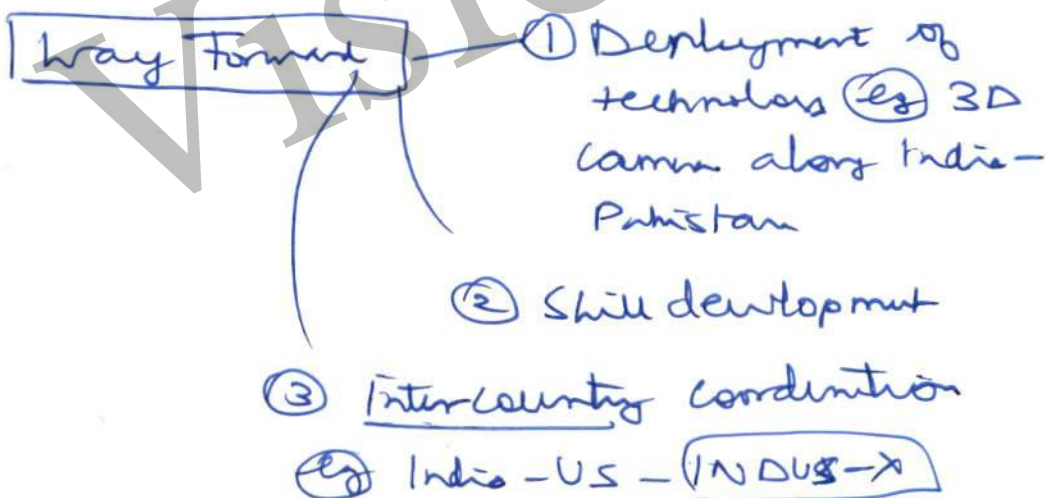
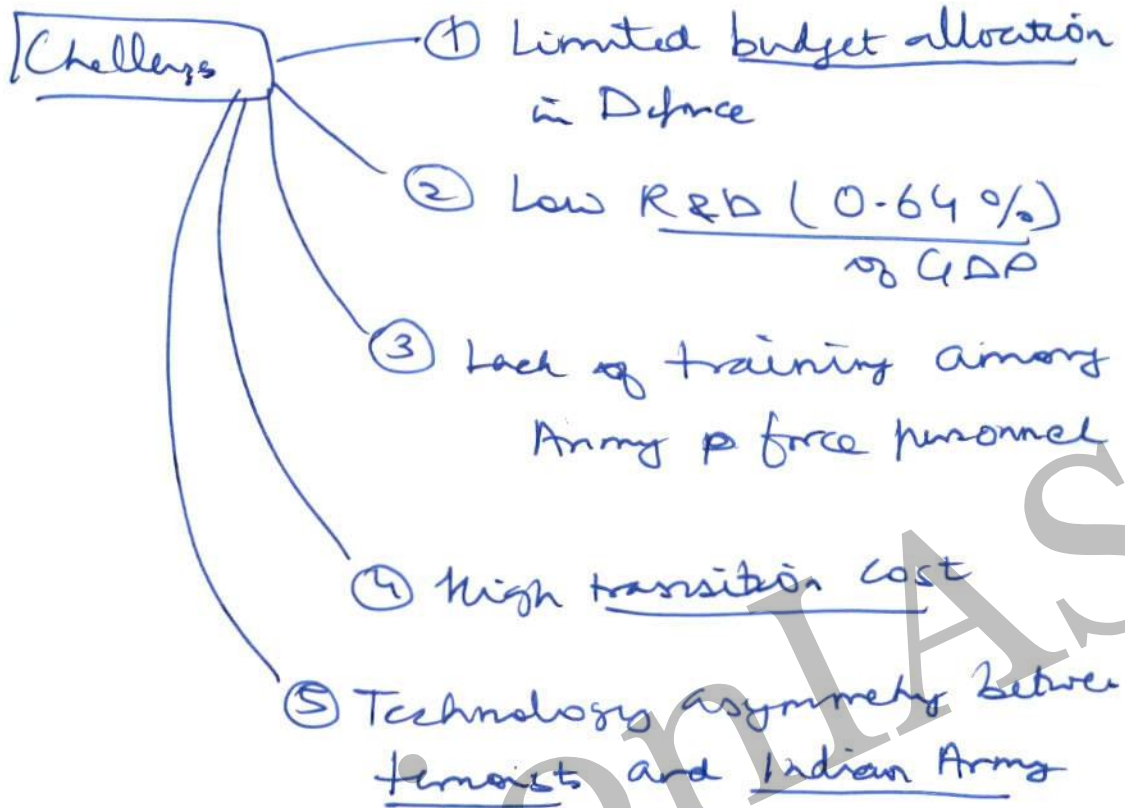
② New technology used by state and non state (eg) UAVs - Drones for bomb attacks

③ New methods of recruitment and radicalization (eg) Telegram channel to woo youth of border areas

④ Involvement of state actors (eg) Red Echo by China to attack power grid in Mumbai

## ⑤ Sophisticated means of attacks

eg) Organized crime and terrorism



Technology as a tool can subvert nefarious Acts of both state and non state actors to protect life and sovereignty of India

11.

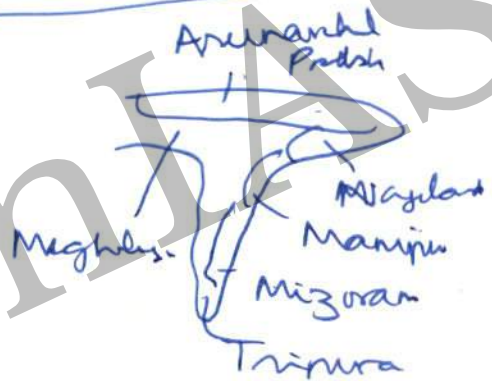
भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)  
What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of India? Comment on the measures that have been taken to tackle these issues. (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
Candidates must not write on this margin

15

As per 2nd ARC, North East Region is in the state of stable anarchy where law and order is subverted due to militant ideology by locals and collusive actions by people and institutions.

Issues faced by the development of trade and industries



① Infrastructure challenges

lack of ports, airports, roads

② Ethnic based clashes result in disruption of trade routes and industry (eg) Kuki-Meitei uprising led to shut down of TATA plant

- ③ Law and Order issue (As noted by 2nd ARC)
- ④ Border issue : 99% of NER shares borders with international countries
  - ⊕ Myanmar influx of Rohingyas ⊕
  - ethnic clashes ⇒ disruption of trade routes
- ⑤ Tribal identity and implementation of 5th and 6th schedule that delays process of eminent domain clearance
- ⑥ Laws like Forest Rights Act 2006 → delay commercialization of trade and industry
- ⑦ Low skill development in NER ⇒ limited pool of workers to function in base industries

### Way Forward

- ① Infrastructure ⊕ UDAN Airport, Road built (60,000km roads)

② Culture Integration - to promote migrants to relocate for industrial jobs

③ Trust and Reconciliation among different ethnic communities to enhance stability (eg) Bm- and Tripuri Reconciliation

④ Skill development } school building and local Universities

⑤ Intentional agreements on infrastructure (eg) Keladan multi modal port, Sattase port

Thus, confidence building measure (CBM), skill development and infrastructure will provide equitable development to trade and industry in NER, which is called the 'Heartbeat of India'

12.

जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

In the era of climate change and growing water scarcity, how can micro-irrigation systems contribute to sustainable agricultural practices in India? (Answer in 250 words) 15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

As per IPCC, world temperature has risen by  $1.2^{\circ}\text{C}$ , resulting in climate change

As per NITI Aayog, water availability

reduced has led to results in need for micro irrigation

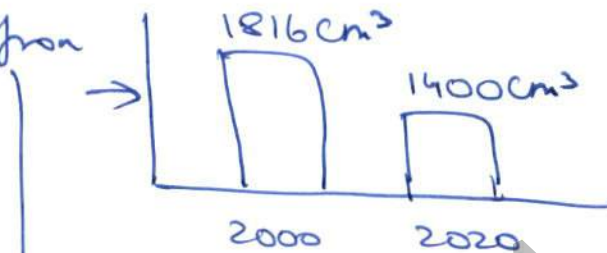


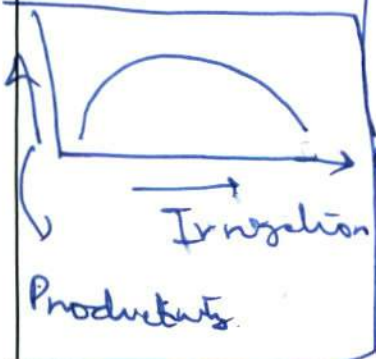
Fig water per capita per year availability

Why micro-irrigation?

① Agriculture consumes 83% fresh water

② Export of mineral water (through rice exports)

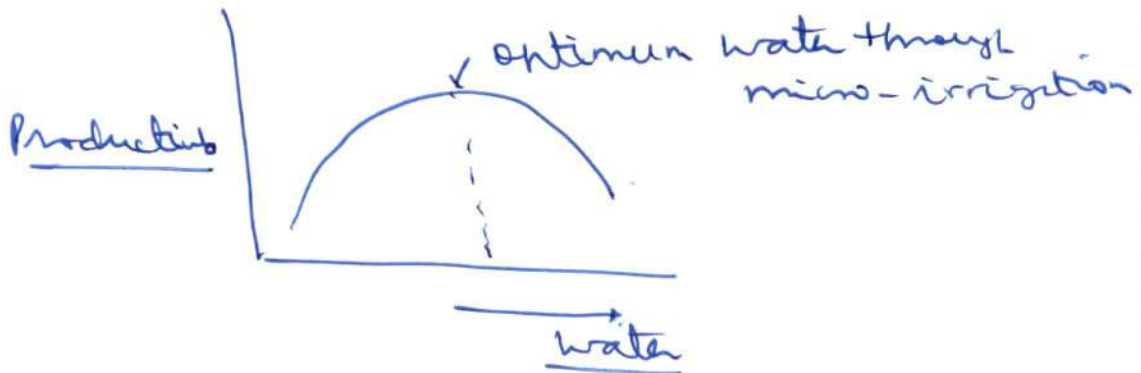
④ Productivity reduction



③ Cost of Domestic Resource Cost (DRC) (by Ashok Gulati)

## Micro-irrigation - contribute to Sustainable agriculture

### ① Productivity improvement



- ② Reduce input cost - water is a depleting resource, subsidy borne by the state
- ③ Effective water utilization on the roots  $\Rightarrow$  drip irrigation
- ④ Address depleting ground water reserves - 60% of groundwater used by farmers
- ⑤ Unscientific agriculture practices can be addressed  $\Rightarrow$  Replace direct seed method with nursery based implants to reduce inundation of fields

- ⑥ Effective seed utilization as mineral provides water at the roots.

### Challenges

- ① Cropping pattern: raddy and sugarcane dominated ~~crop~~ which are water guzzlers
- ② Subsidy by state  $\rightarrow$  promote reckless use of water
- ③ Limited awareness among farmers on microirrigation facilities

### Way Forward

- ① Agri-tech start ups to raise awareness
- ② Retooling of water subsidies
- ③ Local technology utilization on irrigation
- ④ Infrastructure to promote microirrigation

Thus, as per Dalhousie Committee microirrigation can promote sustainable agriculture through effective water utilization and uphold SDG 12 (responsible production & consumption)

13.

भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल हुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए  
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Indian railways is the biggest across world with over 6 lakh km routes transporting over 1 lac ~~population~~ tonnes freight everyday.

ways to increase freight transportation

- ① Infrastructure - Point to point Railway networks & Port to port connectivity in Indian mainland
- ② Multimodal connectivity - Rail-Ship-Road in freight
- ③ Freight corridors on the lines of Dedicated Industrial Corridors
- ④ Expansion of Kisan rails with cold storage facility
- ⑤ Provide last mile connectivity

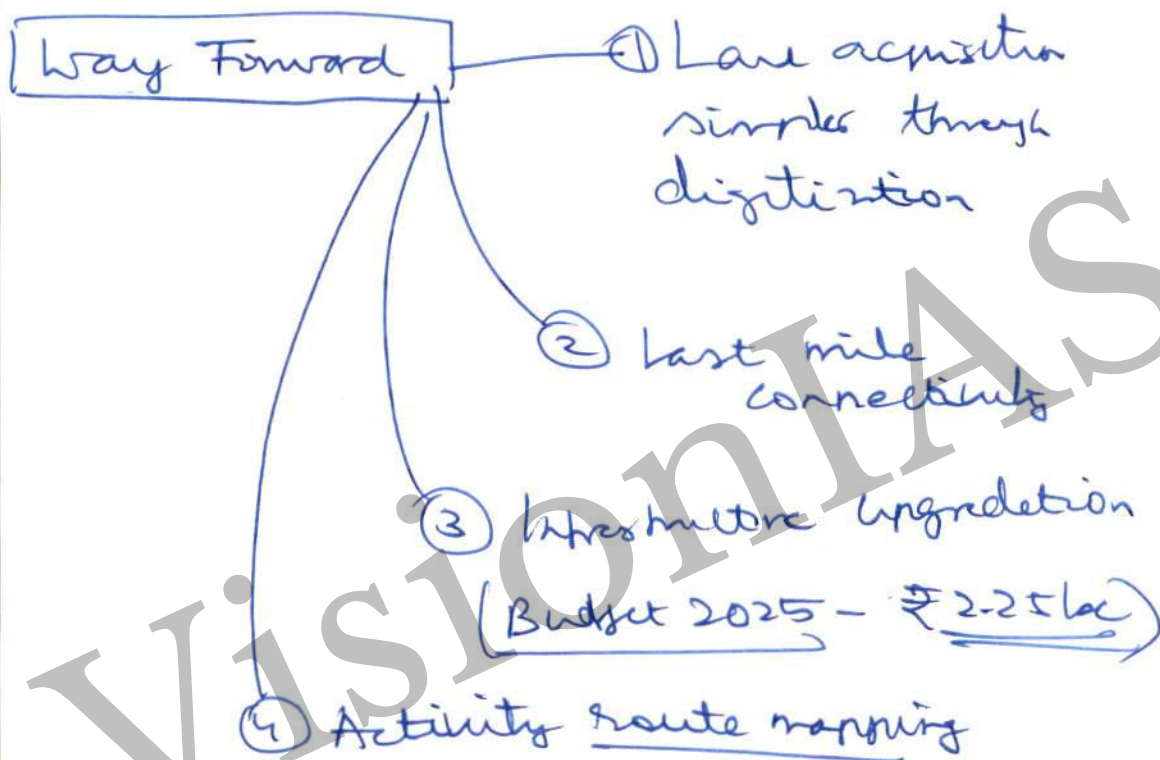
- ⑥ Route mapping to identify the busiest routes of freight transportation
- ⑦ PPP model in railways (Bibek Debroy Committee)
- ⑧ National monetization pipeline to unlock revenue of freight based railway
- ⑨ Insurance scheme ingrained with railway transportation to provide security to the owners
- ⑩ Technology ramp up eg RFID tag on freight to address issue of robbery, theft

### Challenge

- ① Poor last mile connectivity
- ② High cost of transportation to the railway station

③ Supply chain constraints (eg) Trucks can reach remote areas but not ~~to~~ railways

④ Land acquisition slow for network expansion



Railways expansion can reduce logistics cost (13% to OECD=9%)  
make Indian products more competitive  
and drive growth to make India  
developed by 2047.

14.

उन कारकों पर चर्चा कीजिए जिन्होंने नवीकरणीय ऊर्जा क्षेत्र में प्रभावशाली प्रगति करने और वैश्विक नवीकरणीय ऊर्जा परिवर्तन में अग्रणी के रूप में स्थापित होने में भारत की सहायता की है। (उत्तर 250 शब्दों में दीजिए)

Discuss the factors that have aided India in making impressive strides in the renewable energy sector and establishing itself as a frontrunner in the global renewable energy transition. (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
Candidates must not write on this margin

15

India is the 4<sup>th</sup> largest renewable energy country with 45% energy needs installed capacity from renewable sources

Factors aided in developing renewable energy

- ① Nature Resources - India being a sub-tropical region - sunlight for solar power
- ② Government Schemes (eg) PM-Suryodaya Yojna, PM-KUSUM (farmer solar pumps)
- ③ Involvement of community (eg) 300 units free electricity to those installing solar electricity
- ④ Securing supply chains (eg) PLI in solar modules

⑤ Digitalisation initiatives

eg) One Sun - One World - One Grid

(COP 26)

⑥ Role of regional players

eg) States like MP - led to REWA Mand - State led project

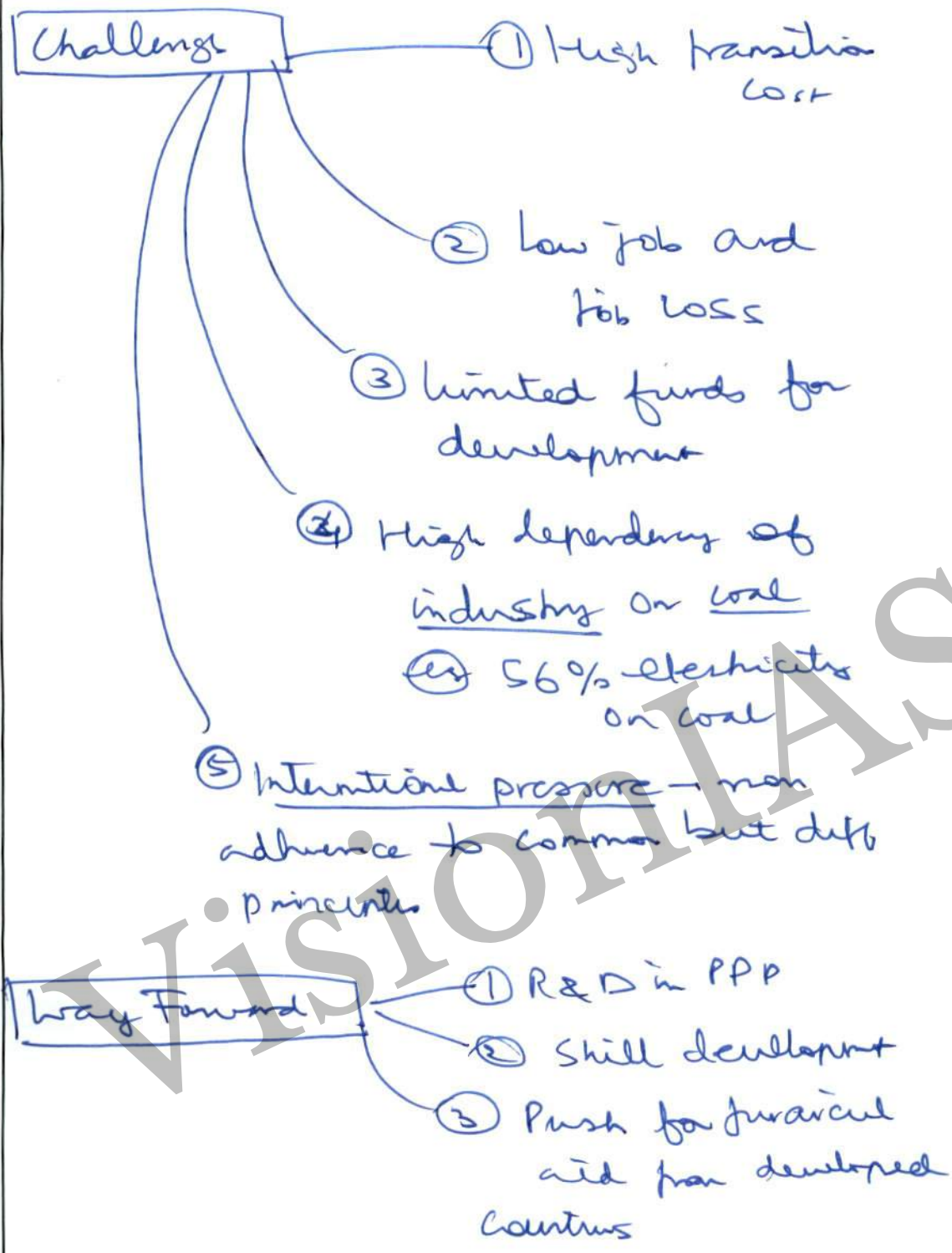
⑦ Improvement of the maximized through renewable policy

eg) PM-KUSUM for farms solar pumps

⑧ Focus on R&D in PPP mode to invite funds from private sector

⑨ Atmanirbharata in technology eg) Indigenous solar cells

⑩ Securing critical minerals for renewable energy eg) Argentina - India Initiative



As Economic Survey (2024) estimated rise of energy needs by 2.5X by 2030 and need for ~~\$3 billion~~ \$31 billion by 2030 PPP and innovation along with skill develop is needed to achieve SDG 7 (clean energy)

15.

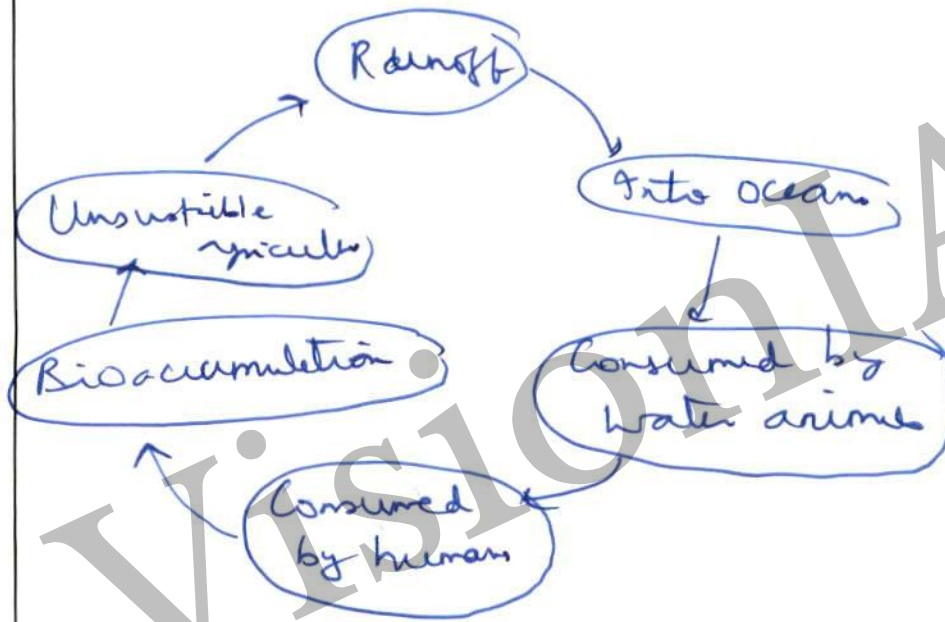
उर्वरकों और कीटनाशकों से युक्त कृषि अपवाह पर्यावरण प्रदूषण में किस प्रकार योगदान देता है? कृषि अपवाह के प्रभाव को कम करने के लिए क्या उपाय अपनाए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

How does agricultural runoff containing fertilizers and pesticides contribute to environmental pollution? What measures can be taken to mitigate the impact of agricultural runoff? (Answer in 250 words)

15

उम्मीदवारों को इस हशिप में नही लिखना चाहिए  
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Agriculture runoff, containing fertilizers and pesticides flow into the ocean bodies, entering the food chain, affecting the entire ecosystem



Contribution to environmental pollution

- ① Ocean life affected due to consumption by marine animals
- ② Air pollution due to evaporation of water dissolved with fertilizers and pesticides

③ Water pollution → As precipitation with pesticides - result in acid rain

④ wind pollution - due to ~~st~~ transport of pesticides under the influence of wind

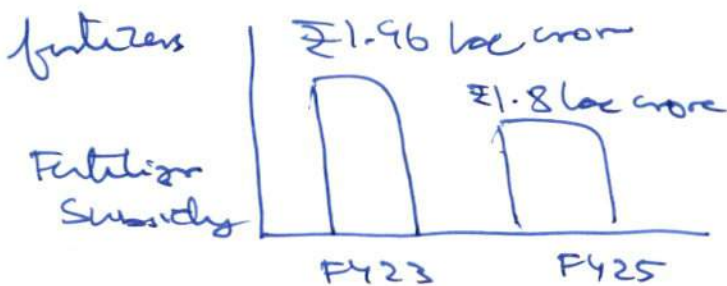
⑤ Entering the food chain → due to bioaccumulation and non dissolution in water elements

### Ways to mitigate

① Budget 2024-25 → ₹1000 crore farms in the natural farms

② Innovation (e.g.) Biofertilizers and new pesticides to reduce runoff (by IFFCO)

③ Reduced subsidy on agriculture



- ④ Awareness among farmers  
↳ to reduce fertilizers and use  
natural manure
- ⑤ Community projects (eg) GOBARDHAN  
to promote manure usage
- ⑥ Zero Budget Natural Farming  
↳ Phansa  
↳ Manure  
↳ Mulching  
↳ Fertilized seeds
- ⑦ Role of agricultural startups to  
provide support for new methods  
(eg) Fertilization of seeds by PAMBO

Budget 2024-25 emphasis of  
climate smart agriculture aims to reduce  
fertilizers and pesticides for both  
well being of farmers and environment.

16.

हिमालयी राज्यों में पर्यटकों की बढ़ती संख्या ने उनके पारिस्थितिकीय समावेशन क्षमता को पार कर लिया है, जिसके कारण बड़े पैमाने पर मानव-जनित आपदाएं उत्पन्न हुई हैं। संधारणीय पर्यटन को बढ़ावा देते हुए ऐसी आपदाओं को रोकने के लिए क्या उपाय किए जा सकते हैं? प्रासंगिक उदाहरणों के साथ चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

The growing influx of tourists in Himalayan states has breached their ecological carrying capacity, leading to significant man-made disasters. What measures can be implemented to prevent such disasters while promoting sustainable tourism? Discuss with relevant examples. (Answer in 250 words)

उम्मीदवारों को इस शक्ति में नहीं लिखना चाहिए  
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The recent disasters like Joshimath land subsidence, landslide in Nemarchel Pradesh, landslide in Uttarakhand reflect the breaching of ecological carrying capacity

Growing influx of tourists



Unsustainable activities

(eg) Deforestation for hotels,

tourist activities like river rafting



Breach of ecological carrying capacity



Man made disasters

Loss of lives

Impact on biodiversity

Loss of livelihoods

Destruction of Himalayan ecosystem

## Measures to prevent disasters

### ① Sustainable tourist practices

(eg) Amarnath Yatra pilgrims ~~incentivized~~  
incentivized to recycle plastic bottles  
using QR code refund

### ② Land mapping and Zonation

Mapping areas more susceptible to  
disasters and keep it for non-communal  
usage

### ③ Short Environment Impact Assessment (EIA) in hilly areas

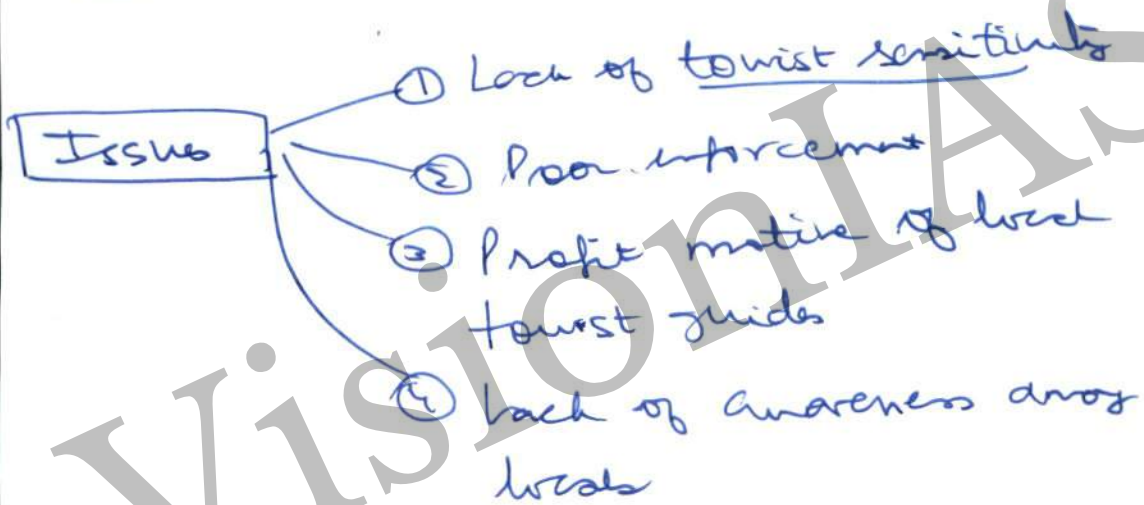
### ④ Licence renewal required for all tourist hotels and stays

### ⑤ Warning dissemination to the tourists in case of impending danger

### ⑥ Community led development activities to make development more sustainable

④ Intentional best practices (eg) In Japan, Mt Fukuyiso tourist spot shut down in summer due to visible habitat destruction of ~~fauna~~ local animals

⑤ Proper infrastructure (eg) Roads leads to Kullu from Manali made of geo textile more sustainable



The government's decision to expand National Mission of Himalayan Ecosystem (NAMSHE) under NAPCC along with role of state and locals can preserve Himalayan Ecosystem

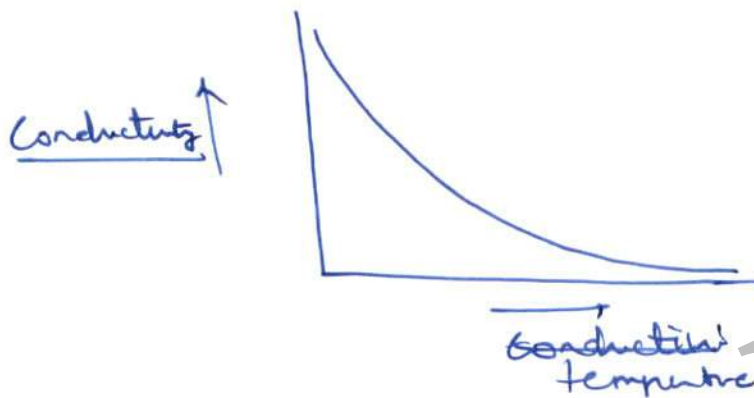
17.

सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

Superconductors are materials that have 0 resistance at a particular temperature



It results in infinite conductivity where electrons flow at infinite speed at all temperatures.

Role of Superconductor in fields of Science and Technology

① In nanotechnology

→ use of nano-fibers to conduct electricity without resistance

→ nano cathode tubes - in TVs to provide quick image capturing real time

## ② In semiconductors

- ① Chip fabrication unit - quick fabrication with precise outcome

## ③ In robotics

- ① Robotic surgery through superconductors
- ② Robotic drug delivery - with precise, real time mapping

## ④ In transportation

- ① Vacuum tubes - for faster transportation of freight and passengers

## ⑤ In space technology

- ① Powering of spacecrafts in space - especially in crew mission
- ② Support space stations with round the clock electricity

## ⑥ In clean energy

- ① Clean fusion reaction - not

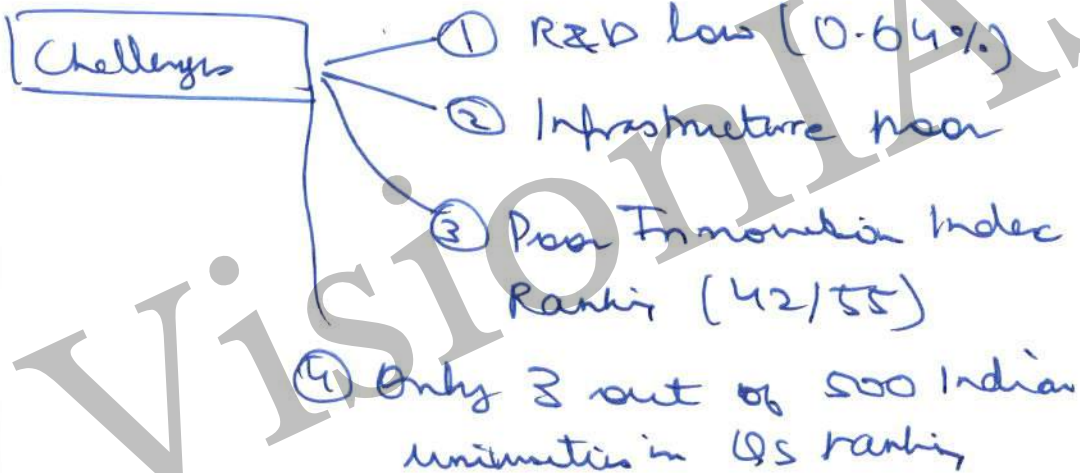
yet operationalized

② Generation of high temperature plasma to sustain fusion reaction

⑦ In Quantum Computing

① To obtain material at subatomic level

② Utilization of superposition and entanglement using superconductor



Thus, with compact between public and private sector (Economic Survey 2024) superconductivity technology can be developed with which can drive innovation in the spirit of JAI ANUSANDHAN

18.

यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तार वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)  
While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

15

Intellectual property Rights aim at  
protecting and preventing misuse  
of creative innovative intangible human  
assets.



IPR in India  
① As per Berne and Paris Convention -  
to promote R & D in all intellectual  
property and aid in monetisation  
of intellectual innovation of human  
minds

## Enforcement Issues

- ① Vacancy in body enforcing IPRs in India results in violations
- ② Pendency in court due to appeal by private players (eg) Johnson and Johnson appealed against ban of Bedaquille medicine
- ③ Ambiguity in definition of certain terms results in weak enforcement

## Regulators

### Administrative Challenges

- ① IPR sections like 3(d) prevent Greenwashing - difficult to categorise what is greenwashing
- ② Section 56 + Compulsory Licensing deter market players to enter India
- ③ Adverse Court adjudication  
(eg) High court rejected repatent of Potatoes by Pepsico
- ④ Ambiguity (eg) Rash gulla GI tag between Udisha & W. Bengal

## Administrative challenges

- ① Limited training among employees
- ② Manual clearance of patents result in Rent seeking
- ③ Lack of awareness of procedure among private players

## Way Forward

- ① DPIIT + Single window clearance for patent approval
- ② FAQ document for Players
- ③ Rule clarity and R&D support infrastructure to innovation
- ④ Fast track courts to expedite issues

As India is the 6<sup>th</sup> largest patent holder country, support through clear rules, R&D and innovation will help India move forward towards

VIKSI+ Bharat coupled with scientific temper.

19.

एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों में दीजिए)

Keeping in view the challenges in creating integrated theatre commands, examine how the theaterisation of commands can lead to greater integration and rationalisation of manpower and resources among the three services. (Answer in 250 words)

15

BP Reddy committee's called for integration of theatre command for greater integration and rationalisation of manpower and efficient resource utilization.

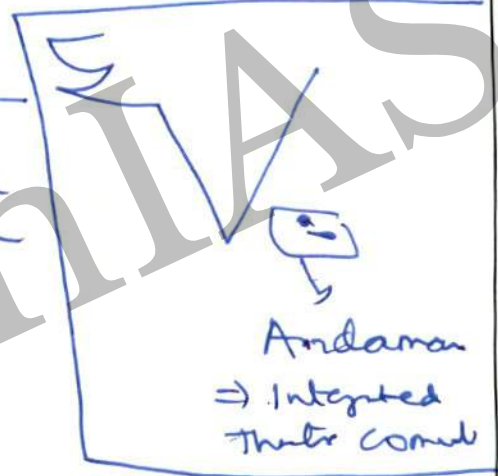
Challenges in creating integrated theatre command

① Different structure of the 3 military arms

② 3 different heads of each military arm - result in power tussle

③ separate financial resources for each military organization - difficult to pool in resources

④ Territorial differences - ⑤ Navy is



Responsible for effective water ways management.

⑤ Dilution of security challenges (eg) Border dispute with China needs Army deployment

⑥ New emerging challenges may not be effectively addressed

(eg) Jammu & Kashmir rising due to low Army deployment post India-China

Galwan valley clashes (2020)

Still it helps in following way

① Integration of manpower

① Effective utilization of manpower whenever required due to one single Command structure

② Collective efforts whenever the need be

③ Holistic tackling of issue as the battle ground of war is dynamic.

④ Reduced time to reach to the desired area

⑤ Inter-service training → effectively helps in tackling the adversaries

## II) Efficient resource utilization

① Financial resources - pooled for collective utilization

② Defence equipment + interoperable

③ Training bases common utilization

④ Data resource - sharing among the tri-services - more streamlined and effective

Steps like common trains, integration through hierarchical reforms can help in integration of theatre command for meeting the evolving security challenges.

सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

Treating border villages as first villages not just geographically but also in terms of facilities can be a key strategy for enhancing border security. Discuss. Also, highlight the measures being taken by the government in this regard. (Answer in 250 words) 15

The Prime Minister in 2023 called to ~~be~~ rename border villages not as the LAST VILLAGES but the first villages to focus on community led security.

### Facilities needed at borders - Why?

① People should act as eyes and ears of the security forces

② Complement the security forces

eg) Tashim village in Jammu →  
villagers caught a terrorist and handed over to police

③ New methods of security breaches

eg) Cybersecurity issues, radicalization of youth via media

④ Limited reach of police forces in border areas

⑤ Development deficit in border areas  
resulting in alienation among villagers

⑥ New methods like Magnesium lumps,  
sleeping cells difficult to be subdued  
by the border security forces.

⑦ Lack of ground level understanding  
of situation by border forces - need support  
of locals to unearth secret routes

### Issues in border security

① Lack of infrastructure → alienation  
among people

② Limited jobs for youth → take up  
terrorist supporting activities

③ technology → (eg) Telegram channels  
to brainwash youth in border areas

④ Organized crime supported by  
villagers.

## STEPS by Government

- ① Border road development (es) 60% of China-India road built in 2011-2023
- ② Exemption of Environment Impact Assessment (EIA) around borders
- ③ Village defence Committee and Guards to train villagers to help in security measures
- ④ Role of technology to enhance awareness among villagers
- ⑤ Communication channels like hotline between police and villagers

People should be treated as local to security forces along village borders to enhance security and uphold territorial integrity of India.

SPACE FOR ROUGH WORK

VisionIAS