



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. : 01003945

अभ्यर्थी का नाम/Name of Student : Shilpa Chauhan

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

25th Aug. 2024

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

केंद्र
Centre

011 - Sehradun
(Children's Academy)

निरीक्षक के हस्ताक्षर
Invigilator's Signature

Prigya Verma

| <p style="text-align: center;">महत्वपूर्ण अनुदेश</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;">Important Instructions</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> |
|---|--|
| <p>1 (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> |
| <p>2 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> |
| <p>3 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> |
| <p>4 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> |
| <p>5 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> |
| <p>6 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> |
| <p>7 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> |
| <p>8 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 |
| परीक्षक के हस्ताक्षर Signature of Examiner(s) | |

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) | | |
| सकल योग (A+B) / GRAND TOTAL (A+B) | | | | | |



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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)

10

Food processing industry play an important role in transforming raw material into high quality end products.



However, the rapid growth, has several associated challenges -

i) Rapid growth of FMCG

⊙ huge pollution (plastic)

↓
Impact marine animals

↓
e.g. Impact on fisherfolk

ii) The quality issues -

⊙ Labels with wrong information

⊙ high saturated fats

e.g. ⊙ Banning of maggi by FSSAI

iii) Affordability issue -

- ⊙ costly manufacturing
- ⊙ huge competition to MNCs
eg. 24x7, Fresh Farm etc

iv) Increasing burden of NCDs

- ⊙ highest burden in India
- ⊙ increasing cases of malnutrition

v) Associated environmental challenges

- ⊙ promotes mono cropping
↓
Demand in market ↑

- ⊙ Water guzzling crops

⊙ It has led to intra-generational inequity among haves and have-nots.

Solution

Strict adherence to FSSAI, 2006 provisions

formation of FPOs to transform products

Active women participation
eg. SHGs in food processing

Indian food processing sector, has huge potential to tap into the global market and subsequently targeting SDG - No HUNGER

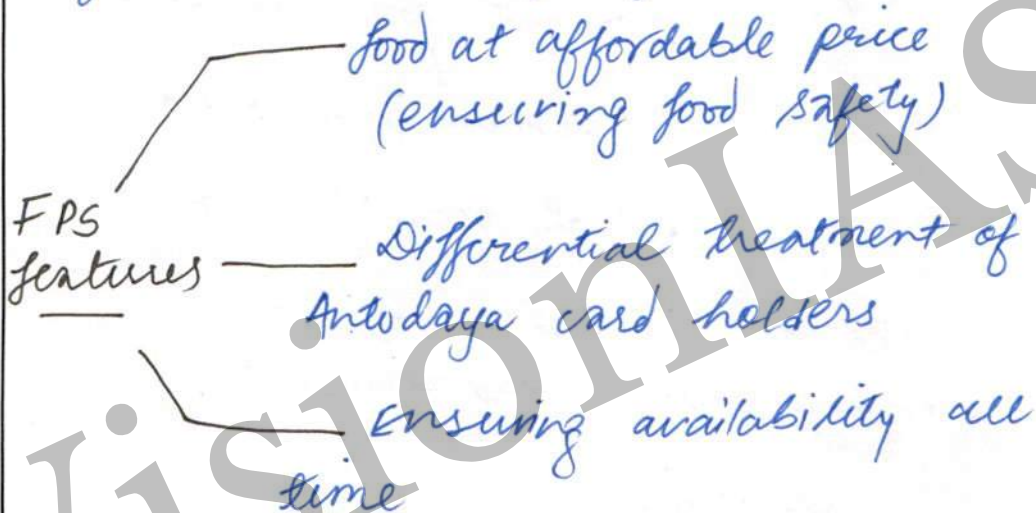
2. भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)
Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

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

The NFS Act of 2013, acts as the umbrella framework to ensure food safety in India.

- ① Fair price shop (FPS) are the points of selling food under the act, that guarantees, it legally.



However, FPS, needs further evolution -

- 1) Tackling the issue of food leakage by corruption of dealers
- 2) Low quality food dispersal

- 3) Timely food availability
eg. Instances of long queues
- 4) As these are generally managed by the local people, 'social problems' like casteism loom large
- 5) Embracing tech-based solutions
- 6) Enlarging the umbrella of legislation to bring in new cereals
eg. millet
- 7) Transforming from 'food safety' to 'nutrition safety'

The 80 crore population dependence on FPS, highlights the need of rationalization of the legal framework, to ensure the goals of a welfare state.

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 कक्ष में नहीं लिखना चाहिए
Candidates must not write on this margin

The climate change induced vagaries require innovative solutions to arrest the negative impact on 'agri-safety'.

The agri-tech startups can play an important role

- 1) Investment in climate-resilient seeds
eg. Mahco and Ricetech
- 2) Reducing flood irrigation → shifting to 'per drop more crop'
eg. Innovation for Zero tillage
- 3) Innovation for plant residue to arrest problem of stubble burning
eg. ICAR's initiative with startups

4) Building efficient market access through on-farm deals
eg. Adani farm (Himachal apples)

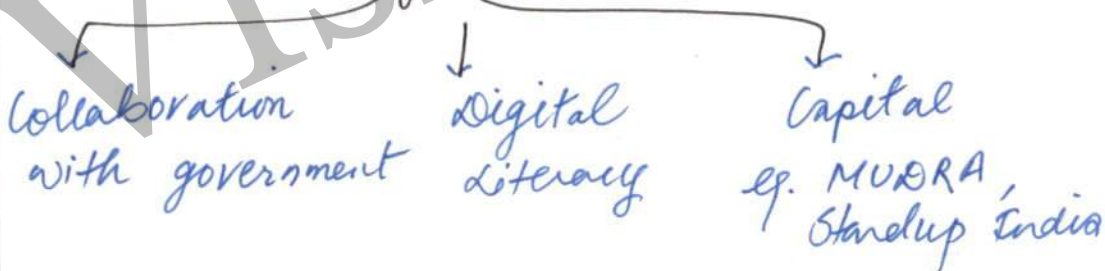
5) R and D in high productivity hybrids

6) The innovation in E. market

7) Steps to reduce labour-cost and effort
eg. Shark tank initiative on easy fertigation

8) Augmenting 'processing' to fetch higher prices for products

way ahead



Agristartups have the potential to unleash farm productivity to usher new era of 'Technological agri-revolution'

4.

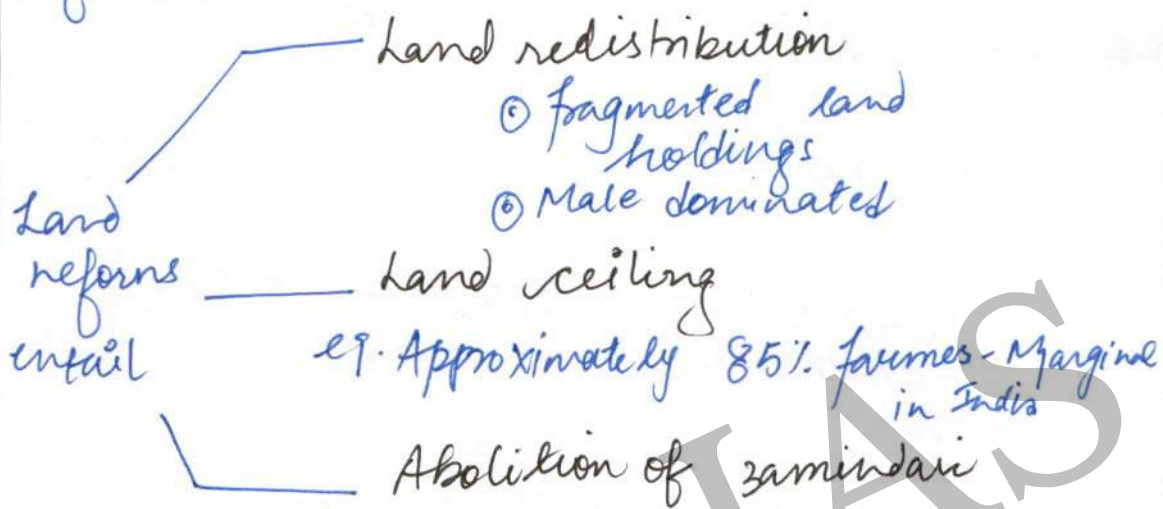
भारत में भूमि सुधारों के प्रभावी कार्यान्वयन में भूमि अभिलेखों के डिजिटलीकरण की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

10

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

Digitization of land records can help India fulfill its 2nd generation land reforms.



Digitization of land - A panacea

- 1) 'Real time' data repository
- 2) fast tracking 'land dispute' especially on agriland → Efficiency ↑
- 3) Augment scientific data pool to help 'R and D' in soil productivity
eg. Soil Ph health card

4) Better targeting of beneficiaries in PM KISAN

5) Innovative solutions according to Land parcel size and quality

6) Enhancing land productivity through land-holding
eg. Per acre subsidy

7) Ensuring the welfare principle (Article 38)

8) Consolidation of small-farms to enhance productivity through innovative initiatives

eg. Zero valley - Rice and fish cultivation

challenges

↓
Court started cases of ownership

↓
Issues of digital connectivity

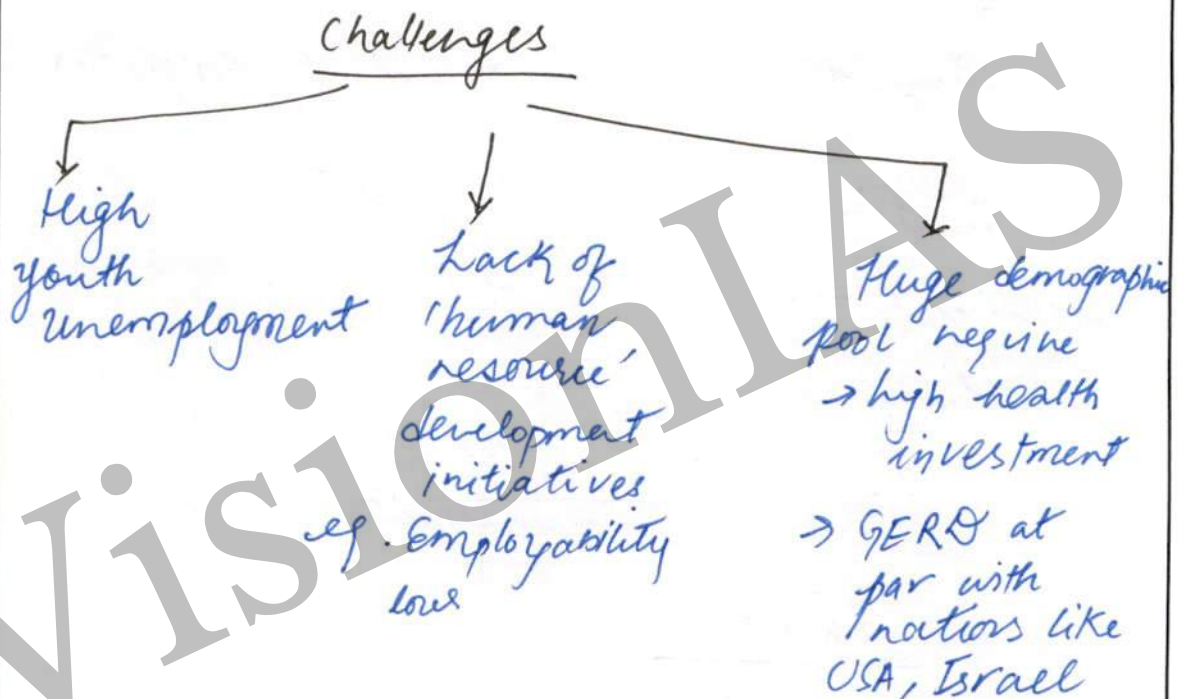
↓
Digital illiteracy.
eg. Complex terms in soil health card.

To arrest the stagnation of agri-sector (GVA - 2-3% stagnant), land reforms are the need of hour.

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)

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

'Demographic dividend' is the benefit accruing from a young population, that is skilled, healthy and motivated in nation building.



Manufacturing - Potential to reap demographic dividend

- 1) huge capacity to employ people
eg. MSME employs ~ 11 crore
(~ 40% contribution to Indian exports)

2) Manufacturing → potential to create innovative jobs

eg. Startups to require new set of skills

3) potential to soak the huge population out of 'agri-sector'
eg. Agri GVA stagnant (2-3%)

4) China + 1 strategy has huge potential for India
eg. Recent shifting of apple manufacturing in India

5) helping lower the 'EXIM' gap
eg. Bangladesh's huge employment through textile manufacturing

* The mobile exports in India almost doubled in FY 24 (1st quarter) ⇒ PLI in mobile sector

Way ahead

skilling up -
skilling

college -
factory/market
collaboration

'HRD'
through Rand
⊙

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 इच्छा में नहीं लिखना चाहिए
Candidates must not write on this margin

Coastal communities, face greater susceptibility in regards with climate change

eg. IPCC AR6, categorises Indian coasts as most vulnerable to climate change

⊛ As underlined in 'people for planet' idea, local communities are the first frontier to tackle these vagaries-

i) Early warning systems in vernacular language
eg.

| | | |
|--------|-----------------------|--------------------------------|
| Orissa | Super cyclone 1999 | Cyclone Amphan 2023 |
| | | → huge reduction in casualties |

ii) Building resilient infrastructure
eg. Retention walls

iii) Nature based solutions - MISHTI scheme by government of India

iv) Training through mock drills in advance
eg. Orissa

v) Investing in alternative livelihood and 'climate smart initiatives'

vi) Effective implementation of coastal regulation zonation

* Climate change has led to shifting 'low pressure' system into southern 'Arabian sea'
Wayanad calamity



vii) Engaging people in climate education and community led initiatives to tackle the issue

way ahead

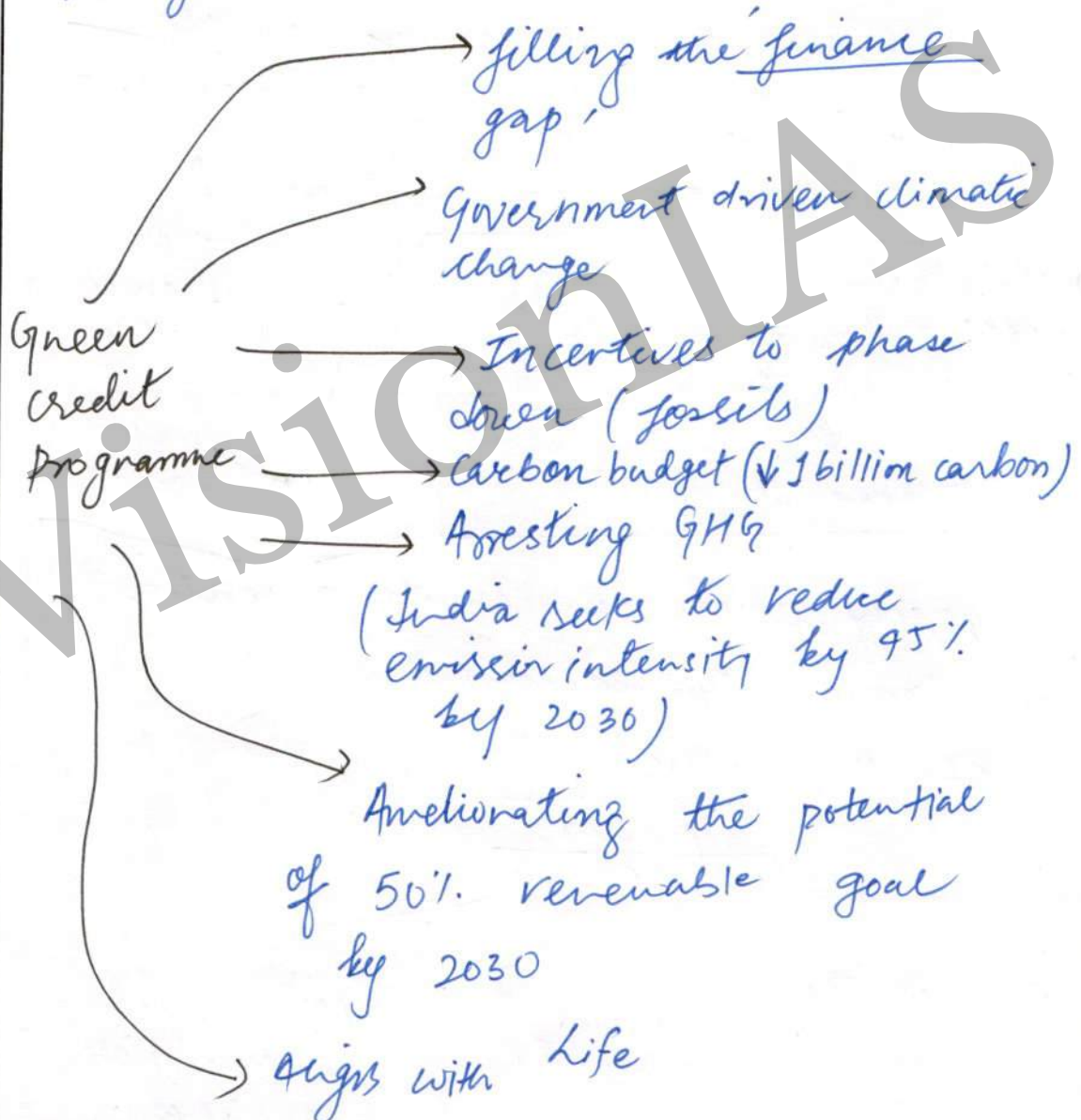


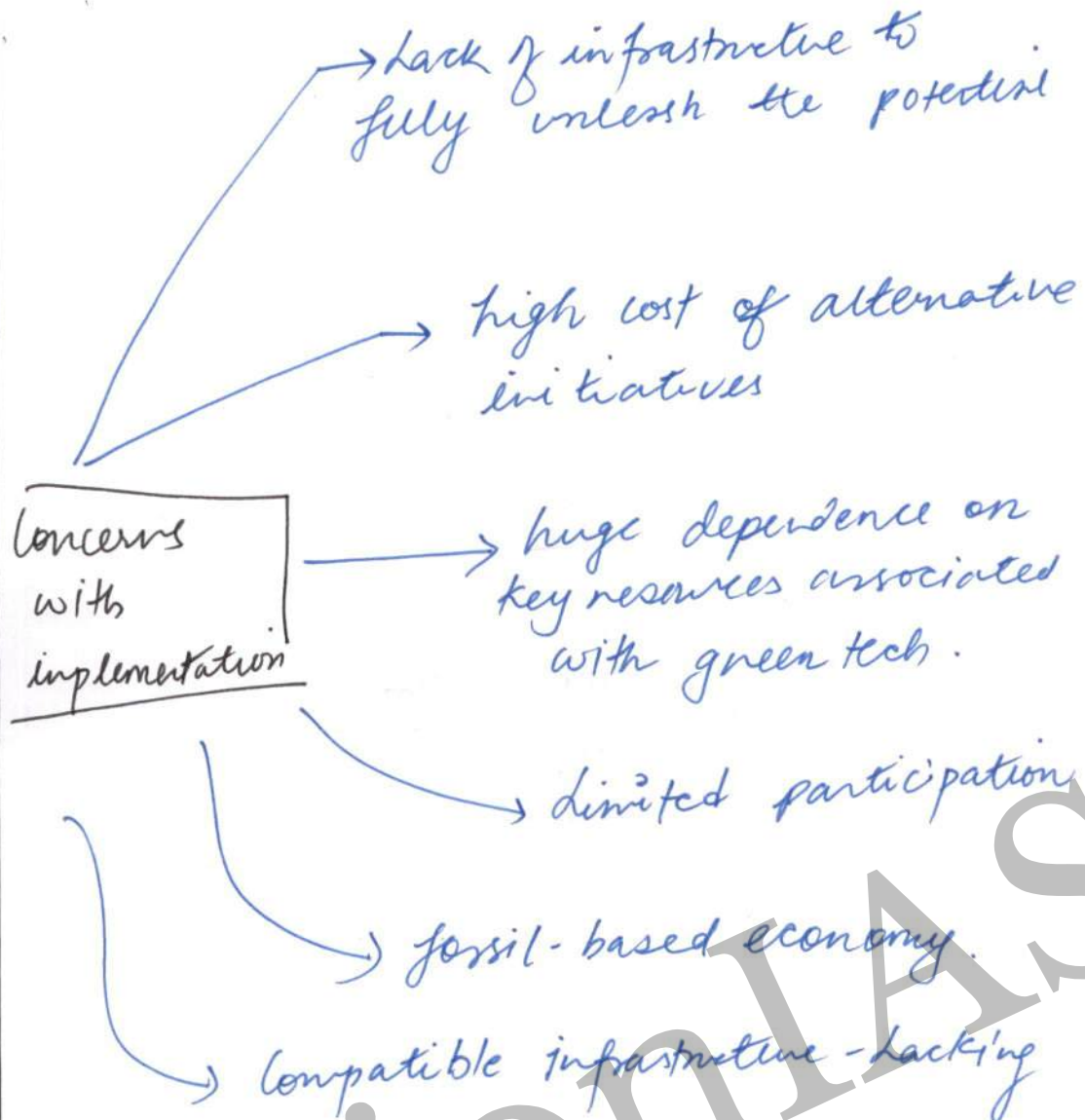
उम्मीदवारों को इस दृष्टिकोण में नहीं लिखना चाहिए
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7. भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 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)

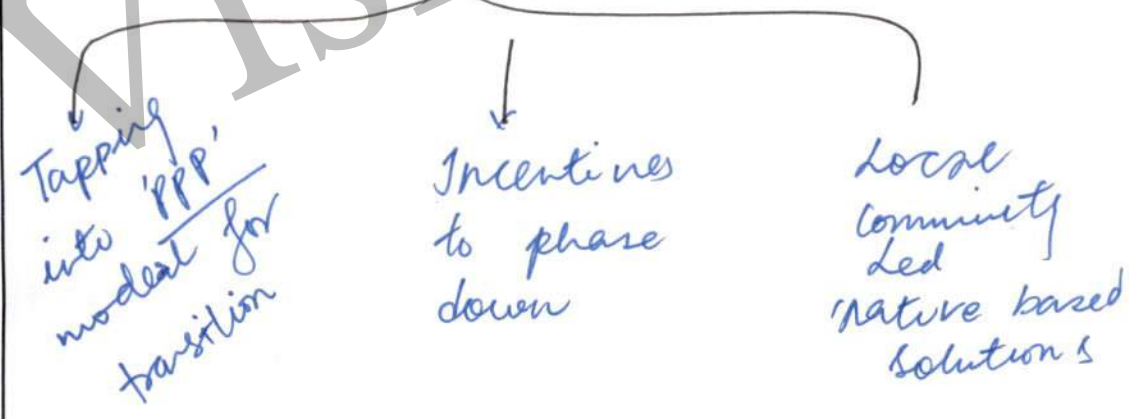
The 'Panchamrit' goals intend to align Indian growth story with climatic reality.

- Green credit programme - aims at the transformation to 'green economy'





Way ahead

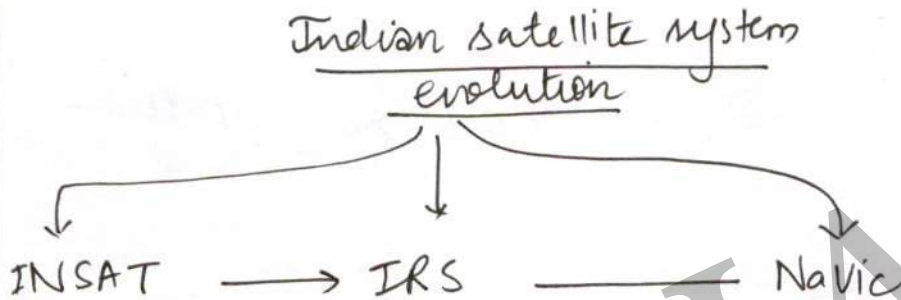


8. जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)
What is the need for NavIC when existing satellite navigation systems are already available?
(Answer in 150 words)

10

उम्मीदवारों को इस इच्छा में नहीं लिखना चाहिए
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Navigation with Indian constellation, india's alternative to GPS, taps into the potential of 'real time' data in myriad fields.



Need for Navic

- i) promotes strategic autonomy in warfare
ep. Refusal of USA in Kargil war
- ii) Promotes economic development
ep. Navic compatible devices
- iii) Real time monitoring for internal security issues

iv) Tapping into global market
eg. GPS of USA, has hegemony

v) Using as a tool of 'soft diplomacy'
eg. Providing data to 'friendly'
nations like Bhutan

Flowener challenges — GPS power in market
— GPS in built compatibility with devices
— accuracy issues

Way ahead

Tapping first into Indian market

eg. Making Indian mobiles like Lava, Nave compatible

Increasing efficiency

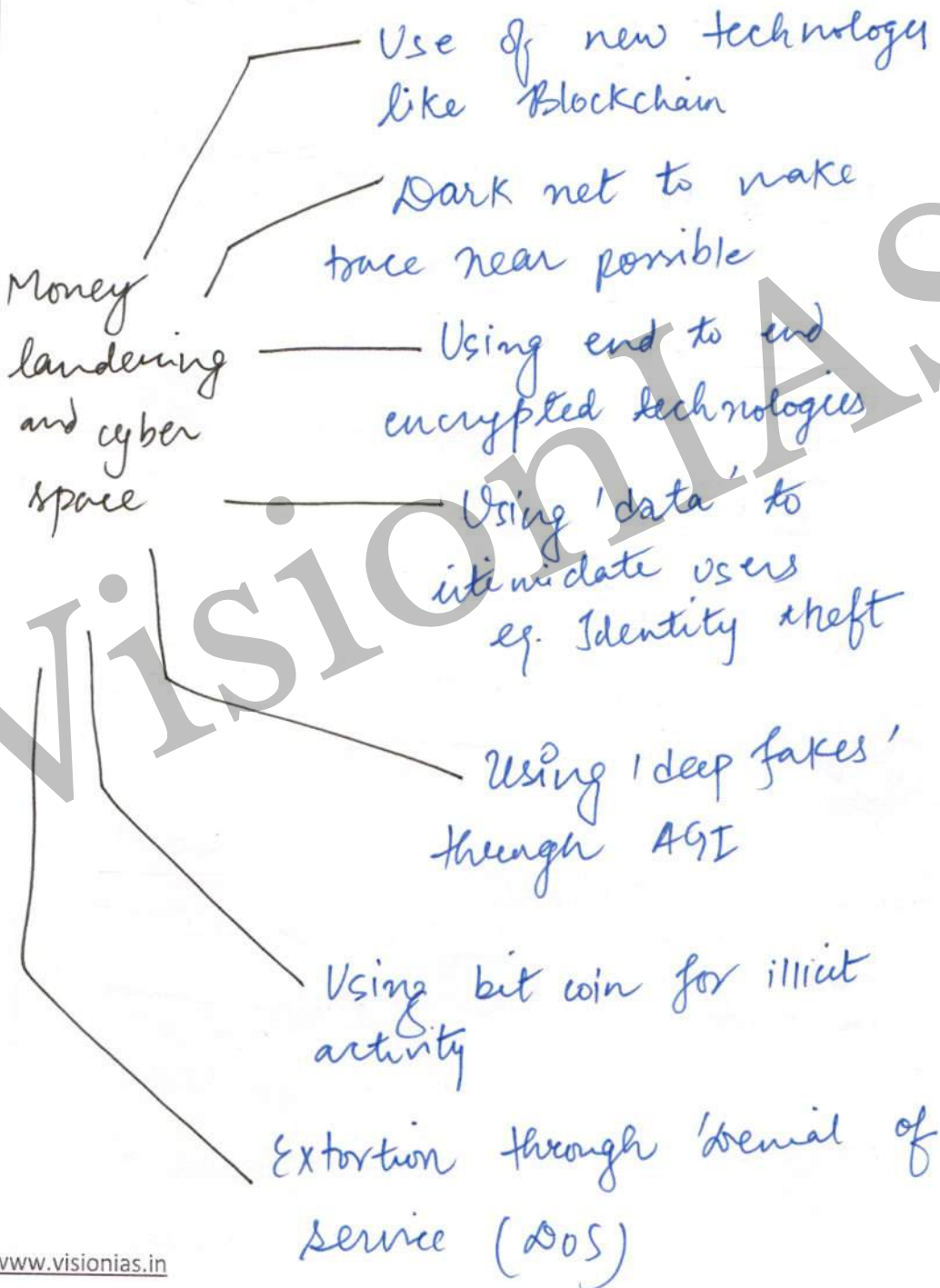
Enhancing usage among 'friendly nations'

eg. Incorporation in technology transfer

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)

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

The I4C (Indian cyber crime coordinator centre) data show a remarkable increase in cyber-enabled financial crimes.



Government can take following steps -

i) Enhancing digital literacy through innovative ideas
eg. RBI Kehta hai

ii) Ensuring data safety through strict legal provisions

iii) Rooting in separate 'framework' for cyber frauds

iv) Building safer digital space

eg. Recent case of cyber-trafficked Indians in golden triangle

v) Regulating the user on web
eg. Kids

vi) Enabling 'secure measures' for financial sector
eg. Roping in tech-advanced people

Way ahead - Technology is ^{Value} neutral
per se, its usage makes it bane or boom.
- Mohd. Yunus

Thereby to harness best potential
'Digital literacy' is a panacea.

10.

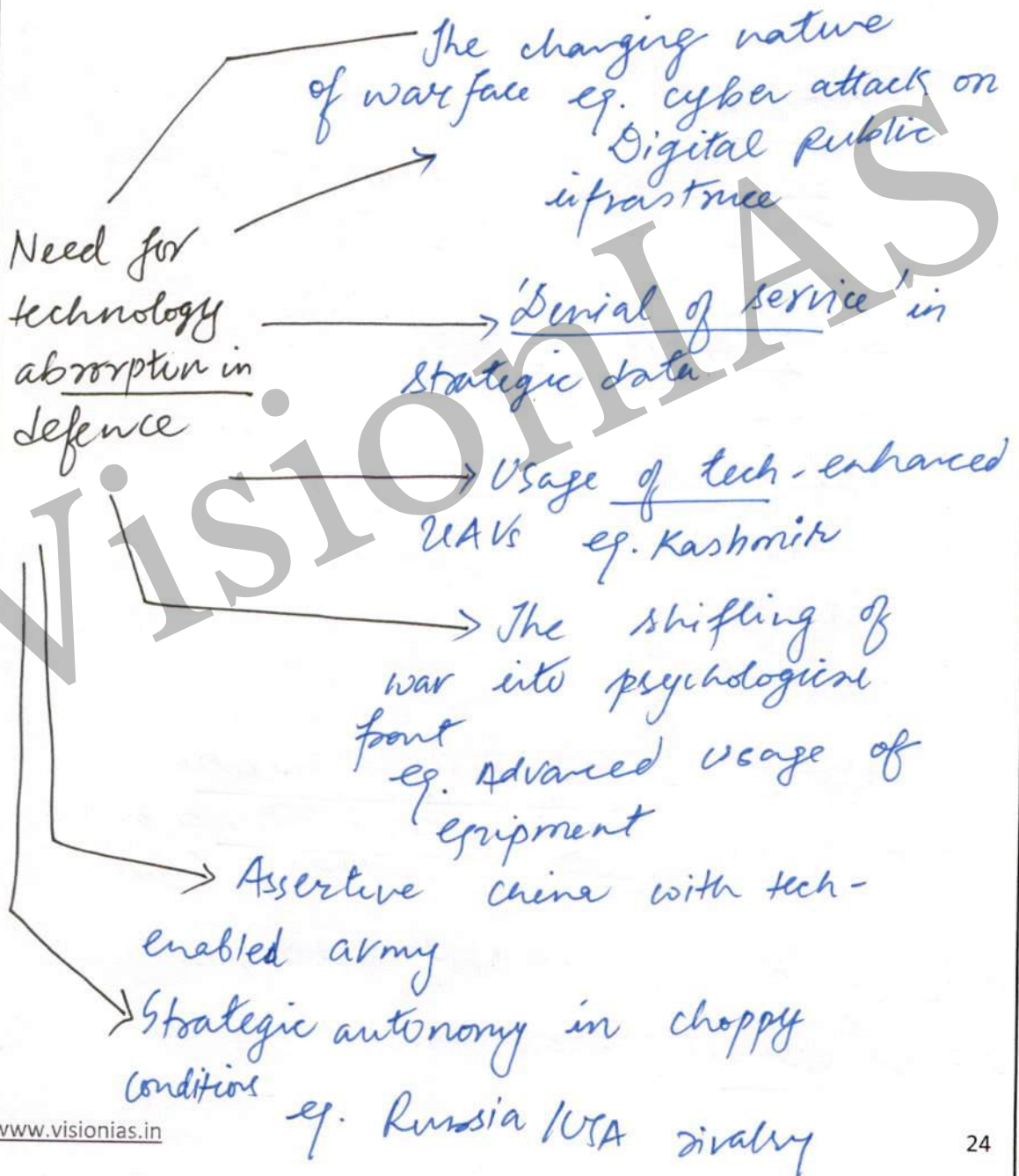
इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्रक में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

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)

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

10

The 'changing warfare' of 21st century require innovative solution for reconnaissance, surveillance and monitoring.



high dependence on imports
from Israel, Russia

Axis of enemies

eg. Pakistan / China

⊙ Recent transfer of high tech
aerial warfare to Pakistan
by USA (Impact Indian
interest)

Challenges -

→ The imperative of
welfare state

⊙ huge subsidy
burden

⊙ China has huge
investment

Lack of
'self-reliance'
due to lack of
innovation in defence

→ marginal cost of investment high
eg. when compared with defence GERD
is very low

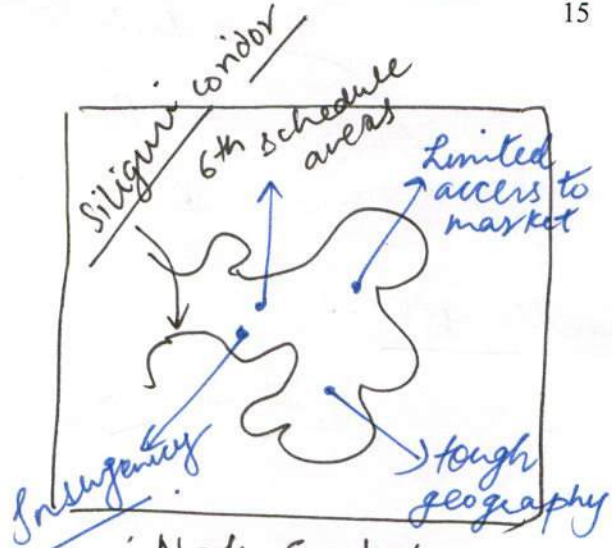
* The recent initiatives of 'self-reliance'
in defence through India-made
weapons, active collaboration with
like minded nations like France,
USA are steps in right direction.

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

The 'north-eastern region', require new tech. based solution for its rapid development.



'North East' (one constituent of key areas)

Issues faced

i) The Limitation of 'geography'

eg. Road connectivity limited
 further the topography makes it tougher to enhance into-region connectivity

ii) The imperative of market

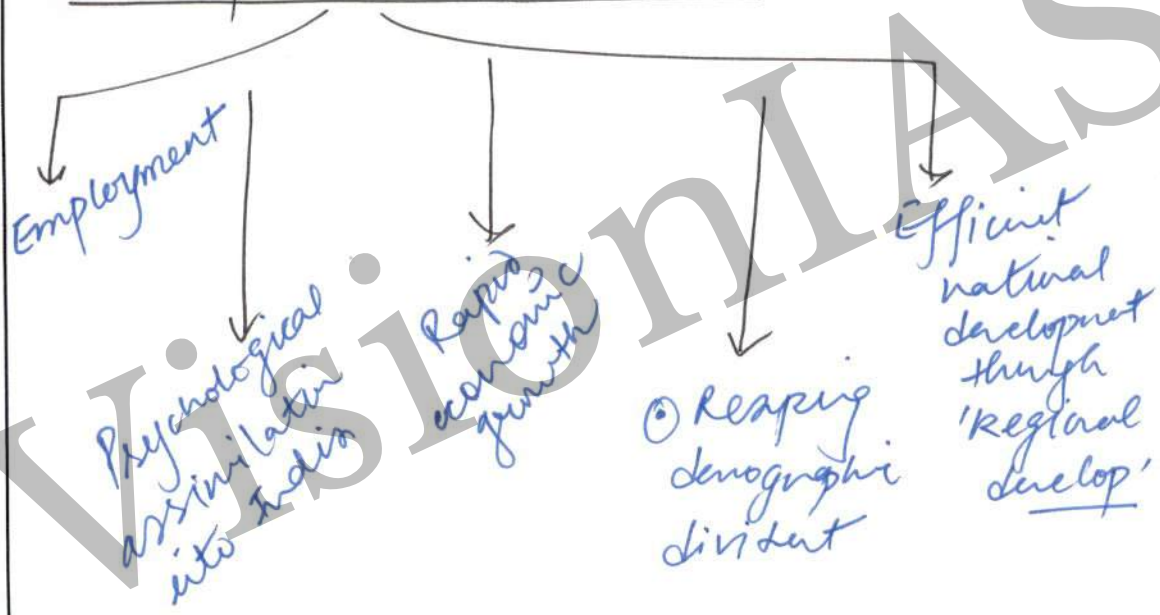
- As outlined by Weber in his 'low cost model', the conglomeration impact is missing

iii) further the govern are provisions of 6th/5th schedule, hinders the development in specific areas to protect tribal identity
eg. ILP

iv) Land locked nature limits access to key nodes of transport

v) Environmental vagaries
eg. Annual Assam inundation

Development will ensure



* The government of India has focused on development of north-east through →

- * Active engagement
- * Active delivery
- * Robust development

i) Active collaboration with states to day inlets on these issues.
eg. MOU with several states

ii) Connectivity issues have been addressed through -
⊙ Collaboration with Bangladesh and Myanmar
⊙ Kaladan multimodal transit point

iii) Ensuring GI tagging and promoting welfare through tourism

iv) opening up new educational institutions to enhance youth employability
eg. Recent ~~opening~~ ~~state~~ announcement of 2nd IIT in North east

v) The active channels for communication through announcement of special packages

eg. ~~₹ 5000~~ ^{₹ 1000} for special package for Nagland

vi) Reducing insurgency to foster environment of 'security' to attract foreign investments.

12.

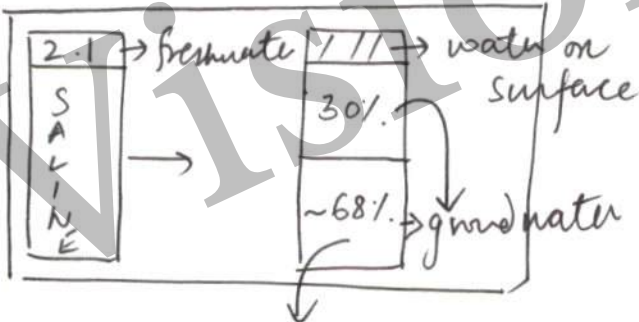
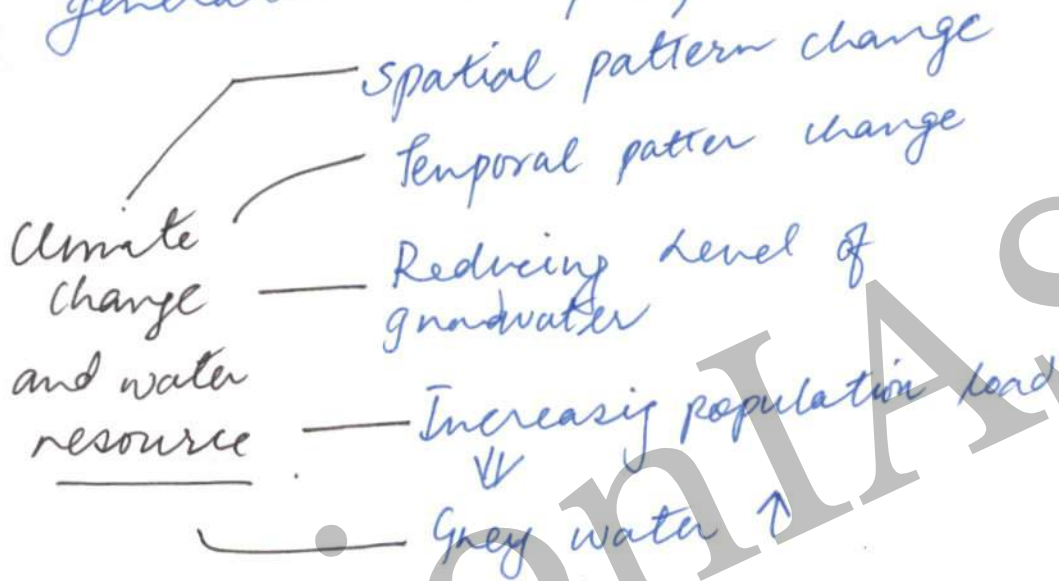
जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

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

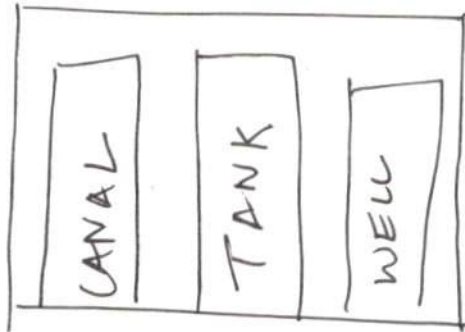
उम्मीदवारों को इस शीट पर नहीं लिखना चाहिए
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NITI ayog stipulates water demand to double in India by 2030. Water scarcity directly intensify intra-generational inequity.



Ice-cap

Distribution of water



current irrigation model

Micro-Irrigation -

1) Reducing the water usage in agri sector

eg. majority of freshwater resource
(4% of world) in India goes into
irrigation

2) Safeguarding power

- Micro-irrigation will lead
to decreased usage of water
hence reducing power subsidy
burden

3) efficient usage of water per
unit area
eg. per drop more crop

4) Reducing soil alkalinization

eg. Efficient usage of water
↓
capillary action of
water ↓

5) Efficient fertigation

eg. Current ratio

8:3:1
N P K

→ Excess usage
of nitrogen
based

6) Shifting to organic farming based on 'desired model' of water usage
eg. Sprinkler

7) Using innovative solutions to enhance productivity
eg. Drip irrigation with crops

8) Drip irrigation can help in 'facking' mono cropping as well
eg. shifting away from water guzzling crops (Paddy)

* Challenges -



Way ahead - The initiative like RiceTera zero tillage and seedling method, can augment well to reduce water consumption of agri sector.

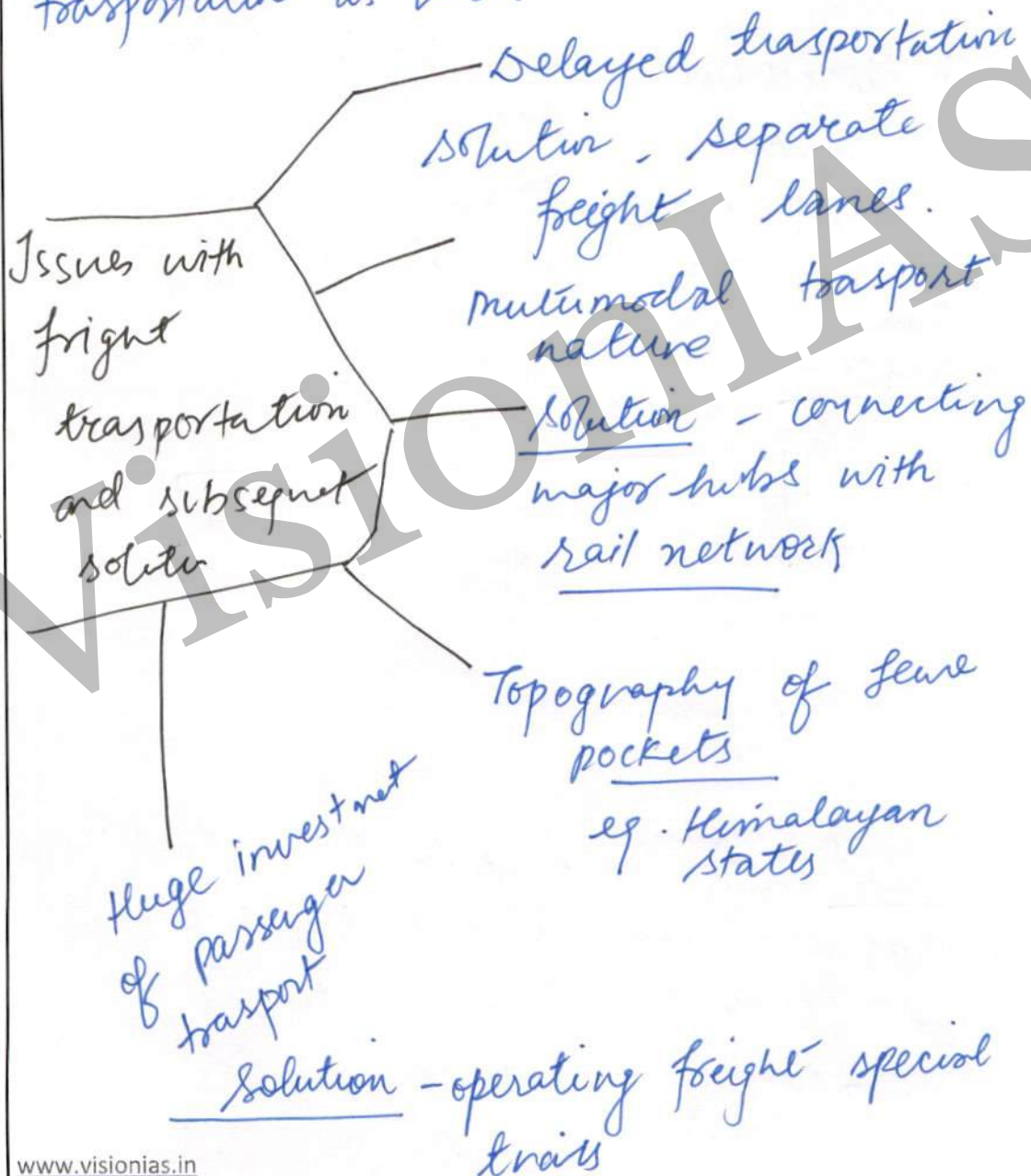
13.

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

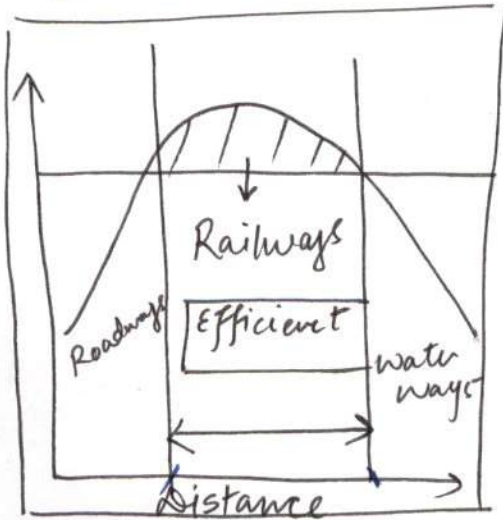
What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

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

Indian railways account for largest people transportation medium in the world. As an efficient means of transport, it plays an efficient role in freight transportation as well.



* further the railways face a major challenge of 'mounting debts', that hinders the development of specific initiative for 'freight specific initiatives'



'Hoover model'

* Uniform width of rail tracks
eg. ⊙ metre gauge

* Multimodal transit - Need of the hour -

* Efficient connectivity of Rail, road and water ways

* Limiting the losses through weight losing material
eg. Coal dust

⇓
Impacts on health
as well

* Mulling a specific strategy for 'Economy through railways'

* Undertaking a specialist task to understand the issues and remedies required
eg. High powered committee

* Stakeholder based solution

* Learning from international best practices

eg. Trans Canadian rail route connecting major industrial zones.

* Introducing new trains

Way ahead - With rapid urbanization, the transportation through railways has to be made cost effective, line-band like Japan.

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)

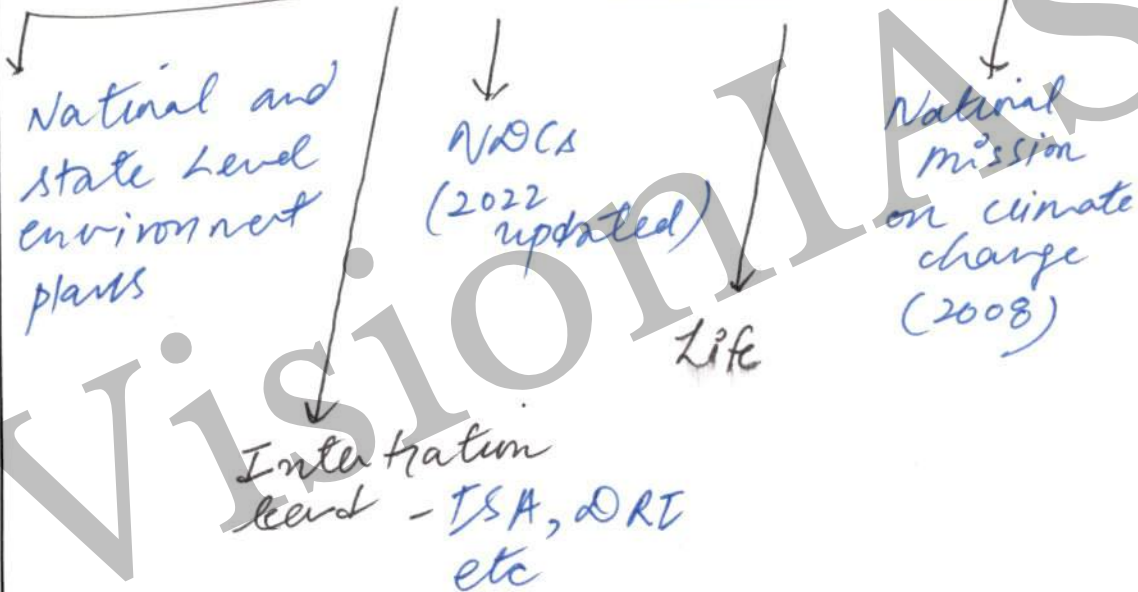
Discuss the factors that have aided India in making impressive strides in the renewable energy sector and establishing itself as a frontrunner in the global renewable energy transition. (Answer in 250 words)

15

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

India through its national mission on climate change and recently updated NDC, has established itself as the frontrunner in environmental transition.

India's environment strategy



factors aiding India's strides

- 1) Tapping the geography's potential
eg. Solar grids in high sun areas
- 2) National mission on solar energy.

① Promotion to active participation of people

① eg. Rooftop solar

① green hydrogen (National hydrogen mission)

① Expanding into all areas

① Agri sector

① PM KUSUM

① floating solar power plant

① National determined targets through innovation

① E20 through 4-G / 5-G ethanol

① Switching towards EV/hybrid on sub-national level

eg. Recent initiative by UP government to subsidise hybrid vehicles

① Infrastructural boost to transition

eg. Battery charging stations

PLI for green industry

① Footrunner in global initiative

① ISA with France

① 'one earth one grid'

① Investment hubs on green tech

① Smart buildings through 'environmental measures'

eg. Central vista

① Incorporating alternative measures

① efficient subsidy

① FAME 2.0

① However - few issues remain

175 GW
of renewable
energy
(goal - 500 GW
by 2030)

expanding dependence
demography on fossil
fuel

higher costs
of green
transition

burden on
non-renewables.

To achieve the Panchamrit goal,

45% emission
intensity ↓

1 billion
carbon sink

Life

50% from
non-renewable

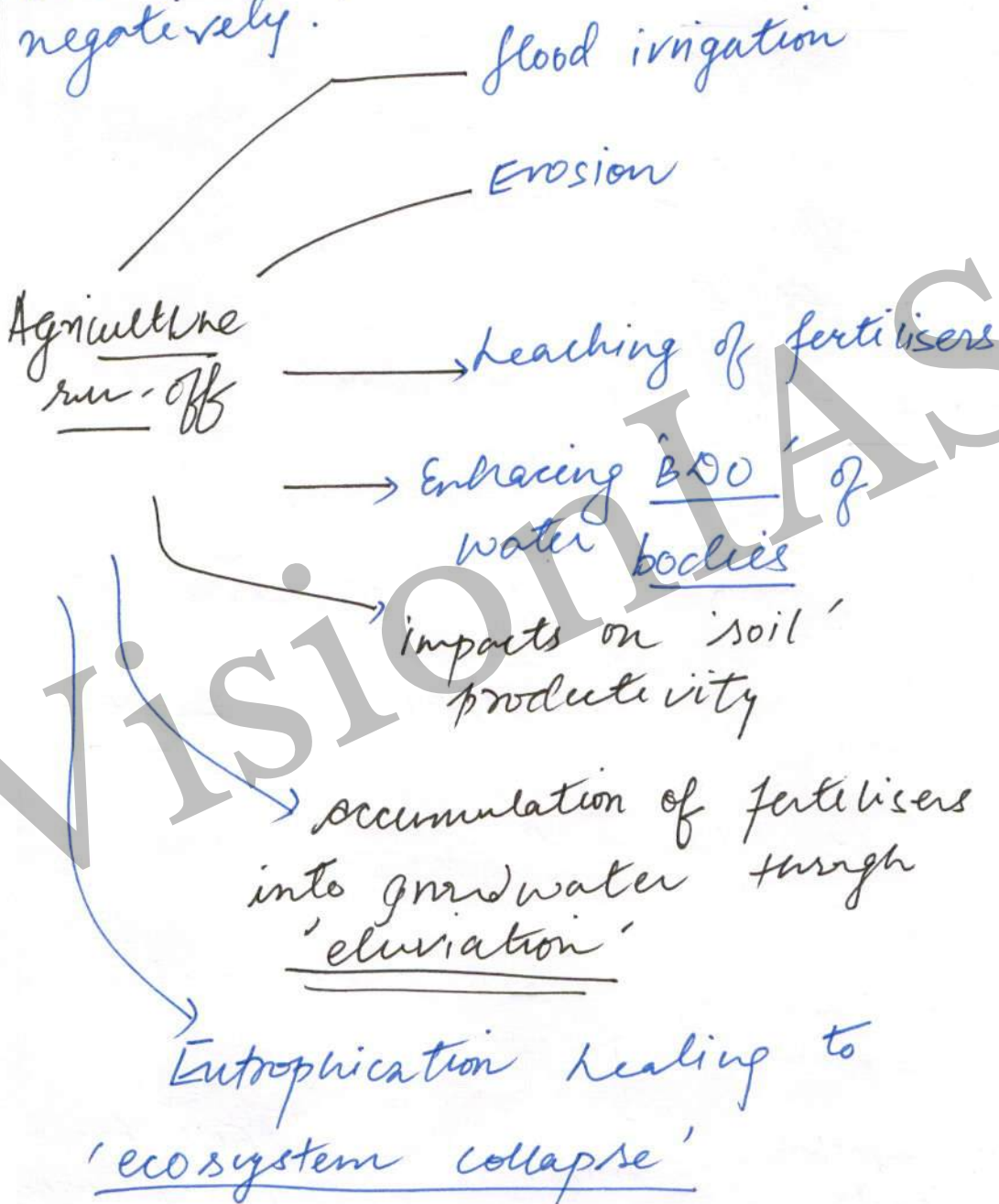
the transition has to be accessible
for all.

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)

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

15

Agriculture sector through various activities impact the environment negatively.



- ④ Bio-accumulation in animals
- ⑤ Bio-magnification across food webs
eg. Vultures death with ibuprofen
- ⑥ Enhancing soil acidity through repetitive fertigation
eg. 8:3:1, ratio of NPK in India
- ⑦ Similarly, it impacts the food crop productivity and impact the whole ecosystem in collapsed 'eutrophication zone'

Measures

- 1) moving the idea of 'one-health one planet' inclusive of all ecosystems
- 2) The right fertigation, through right application of water
eg. Nutrient based subsidy

3) Scientific interventions
eg. Soil pH health card to
maintain productivity

4) Micro-irrigation

eg. Per crop more drop
• drip irrigation

5) maintaining right ploughing
in topography

eg. Run-off high in
mountainous areas.

6) Subsidy on fertilisers should be
naturalised

7) Organic farming or natural
farming.
eg. SIKKIM

Agriculture system should be
aligned with new innovation of
organic fertilisers to tap
into best results.

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) 15

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

The Himalayas, as new young fold mountains of recent orogeny have face several challenges.



Measures


- i) hazard zonation of Himalayas
- ii) Implementation of 'no-go zones'

iii) Regulating tourist inflow as
black soot from vehicles

⇓
Rapid melting of '3rd pole'

iv) Avoiding construction of various
lanes
eg. Blasting causes creep flows

v) further enhancing pollution
is leading to impacts on
vulnerable species of mountains.

 Joshimath (2023)
• Land subsidence
• Aquifer puncturing
• Mishra committee, 1976
suggestions overlooked.

⇓
Requires effective
solutions,
tracking the
movements of
FMCG items with
tourists.

vi) Media campaigns to draw attention to
the issues of Himalays.

vii) geological mapping of all

areas with effective scientific measures.

viii) Assessing the key hotspots
eg. susceptibility of towns like
Masuri, Shimla, bear the
brunt of influx

ix) preparing master plans for
himalayan cities

x) Implementing strict tourist regime
like in 'protected areas' with
vigil on prohibitive activities

Way ahead

→ signing 'tourism' with
ecosensitivity

→ Local active participation

→ Regulating the population
growth in vulnerable
cities of Himalayas

'Natural mission or sustainable
himalayan ecosystem (2008) should
be implemented in its spirit'

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)

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

15

Superconductors, the backbone of new age critical technology development, play a pivotal role in scientific advances.

Special features of conductivity
Superconductors — huge application in new age appliances
Critical for green-transition

* Superconductors with their special conductivity has wide ranging application in Sci/Tech. field.

⊛ Equip's equipment with different capacity to deliver on specific needs

* huge potential for emerging technologies like generative AI and LLMs.

* Superconductors, as opposed to conventional conductors, have selective conductivity to perform unique tasks in hardware of computer systems.

* They equip the computers with efficient speed, without subsequent adversarial heating of the system.

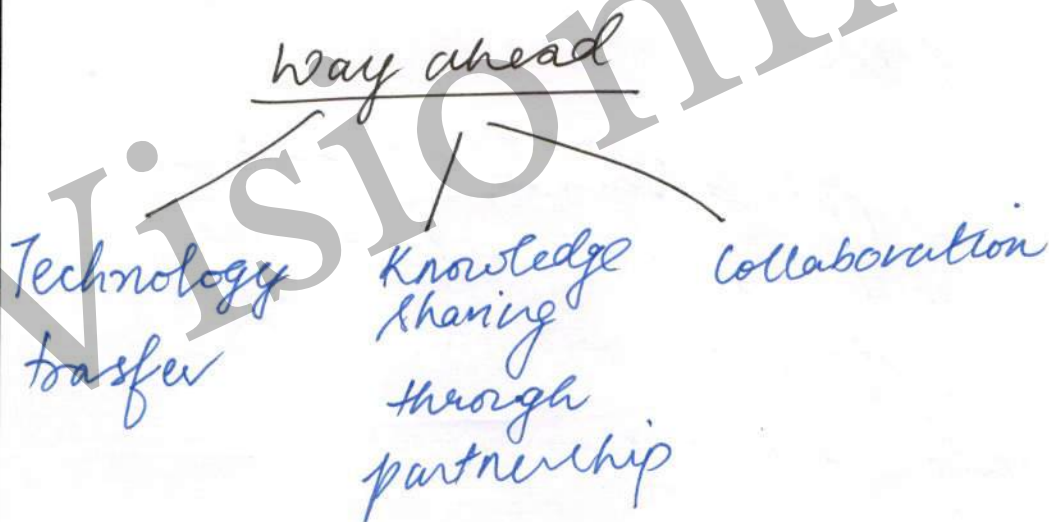
* huge application in electronically charged vehicles, that are the future of innovation in climate transition

* from medicine to nanotech, super computers have huge potential to augment

the capacity of current systems.

⊛ However, the localised nature of key critical resources like Lithium, cobalt etc in few pockets, have issues related to ubiquitous availability across nations.

⊛ few advantageous nations, rest for example global south lingering behind.



In such a scenario, India's ICET initiative with USA, is a step in right direction.

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)

15

India, has an umbrella framework of legislation along with signatory party to WTO TRIPS.

Challenges -

i) Low GERD

ii) Lack of atmosphere of innovation in Indian HEIs.

iii) Regulatory framework - stringent, time taking

iv) The IPRs filed in India, does not often turn into tangible products.

(*) Blocker to innovation
eg. market regulation
market monopolies of big companies.

v) No effective framework to share the 'knowledge pool'

vi) No provision of 'incubation labs' to promote IPR regime

vii) Most of the times, IPR of individual are violated through piracy.

viii) generally the friction of idea through regulatory process acts as hindering process

→ BRAIN DRAIN

Challenges

→ Higher number of paper published in China / USA

→ No specific mission to augment IPR benefits

① The recent initiative by GOI to establish 'NRF' (2023 budget) is a step in right direction to augur commercialization of IPR to tap into

↳ Tangible gains of IPR

↳ Aligning with international best practices

↳ Enhancing 'published papers'

↳ Incubating 'Best minds' to nurture R and D milieu.

The roadmap of scientific glory led by pioneers by CV Raman, Vikram Sarabhai, will lead its zenith with new spirit of innovation.

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

'Theaterisation of commands' is a brainchild of Indian armed forces to enhance synergy between the 3 forces.

(R) It refers to the augmentation of capacity of united defence through collaborative synergy of 3 forces.

Challenges

→ The difference of training and expertise of forces.

→ The challenge of 'synergy for this idea'

→ 'It would require huge changes to current system'

Benefits

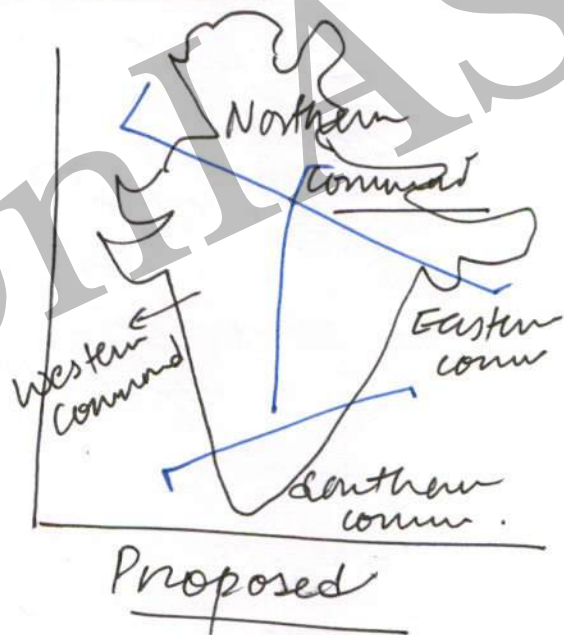
- ① Launching a united front in face of adversity
- ② focusing on key areas
- ③ Boost to 'theatre' specific preparedness
 - eg. USA theatre specific forces
- ④ Identification of dissimilarities of challenges from different fronts
 - eg. Indian ocean realm require different solutions, then Chinese attacks on north
- ⑤ Will equip defence with new age solution
 - eg. J/K UAVs attack.
 - Requires special expertise to deal with newer challenges
- ⑥ Roping in new talent
 - cyber warfare

⑥ Enhancing personnel to personnel synergy for wartime

⑥ Rationalising the number of personnels according to the demand of theatre

⑥ Integnation of resources of the 3 forces will aygment well for 'collective defence'

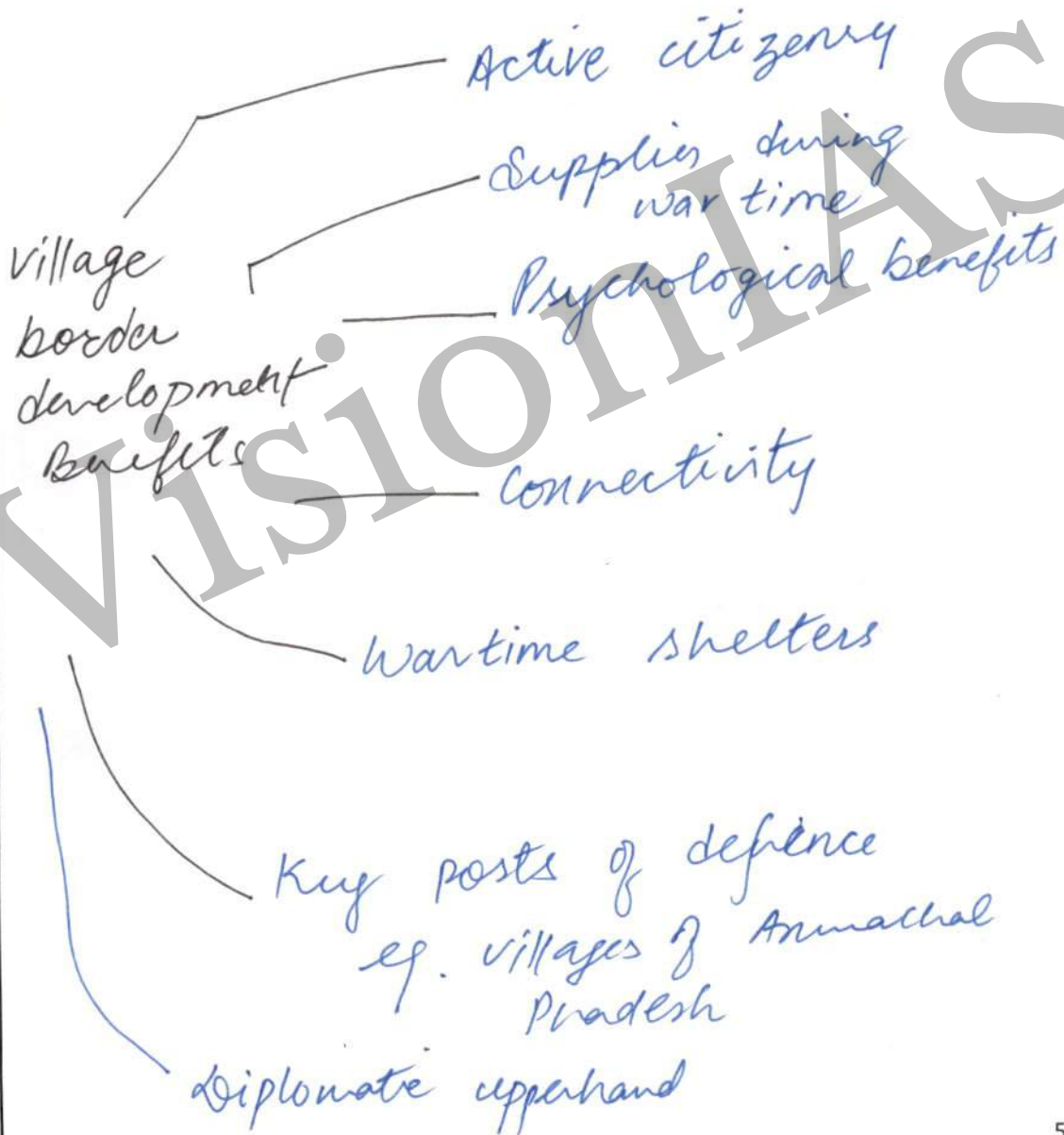
⑥ A peccinise approach to 'complete the goal' based on stakeholder collaboration is the key.



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)

The 'vibrant border villages' can act as key frontier, as first sentinel of defence for internal and external security.



↳ International confidence
eg. Chinese efforts to rename
places in Arunachal to garner
international interest

Government measures -

- i) Increasing last mile connectivity
eg. BRO (1966)
Mana village in
Uttarakhand
- ii) Confidence building measures through
infrastructure development
eg. Network connectivity
- iii) special schemes for border
villages
eg. 'SABHAUNA' mission in
J/K
- iv) Laying special emphasis on
last mile connectivity through
tourism

↳) Giving special impetus on diplomatic
gains through regular high level
visits

eg. Honorable pm's visit to
Tawang in Arunachal
Pradesh

connectivity through
all weather roads
eg. Kinnaur villages

Challenges

development
through economic
means

eg. ⊙ out migration issue

⊙ Several villages in
Uttarakhand face
out migration issues

Efforts of
external
state/non-
state actors
eg. IIC.

Way ahead - the internal security
framework through 'Last villages'
urgently need for 'security of
all'

'Last villages are 1st frontiers'

SPACE FOR ROUGH WORK

EAL

VisionIAS