



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. : 01157317

अभ्यर्थी का नाम/Name of Student : NIKHIL SHARMA

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

25/08/2024

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

केंद्र
Centre

C P TOWER - I

Ravi

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	<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>
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
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

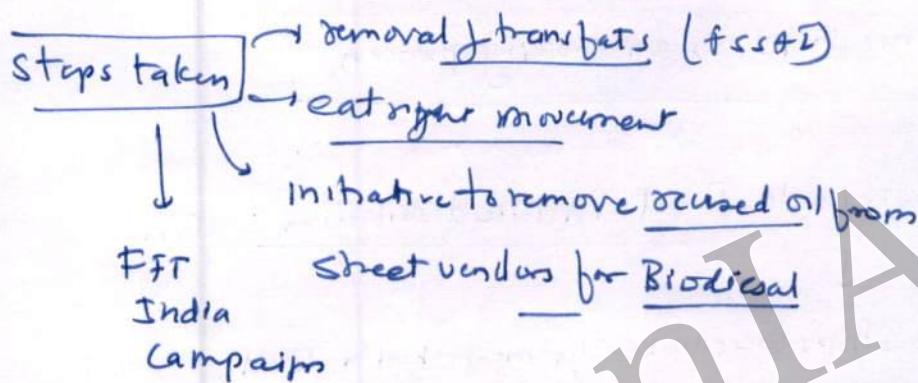
With Annual average growth rate of 7.76%, food processing industry is one of the sunrise sectors in India. This has also, however increased the role of food safety agencies of India.

Rapid growth of food processing industry: food safety challenges

- ① Rise in fats, sugars ^{in ultra processed foods} leading to ^{non} communicable disease burden
- ② Tackling of ~~infiltrate~~ adulteration: risky instances at local level
- ③ Incidences of rising infections in meat processing industries: As Indian animals in India are not ~~has~~ bred for food
- ④ lack of administrative capacity with FSSAI to ensure tackling of threats at local level.

⑤ False advertising of the products on the internet and televisions

⑥ Shrinkflation → reducing the amount of material provided in the same price



Way forward

① Awareness generation through FSSAI advertisements.

② ~~strengthening~~ strengthening the Administrative Structure of FSSAI → filling vacancies

③ Surprise inspections at local level.

④ Aligning the food safety standards to the international standards

To ensure that FPIs in India remain healthy for population collaboration with Industry to ensure safe safety is protection.

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

Public distribution system in India provides food grains to the ~~target~~ targeted population at low prices to ensure food security.

Fair price shops as an evolving process

① started with Targeted public distribution system

↓
Shops were usually merged with local shopkeepers

② with involvement of National food security Act

→ special Ration shop created

↓
at local levels

③ Rise in use of technology is now present

④ One Nation one ration card scheme

↓
and using of adhar in the scheme.

④ onus on the states to set up the Fair

price shops

Issues that are still present

- ① false positives and negatives : leading to exclusion from the process of low priced food grains
- ② Non implementation of one nation one ration card :
lack of political will.
- ③ Leakages from the fair price shops : siphoning of funds as ration
- ④ urban bias in the shops : lack of presence in rural regions
- ⑤ lack of electricity in rural areas

Way forward

Including civil society in implementation: to tackle corruption.

↓ ↓
GPS tracking of food supplies

DRT coupons
~~food coupons~~

can be implemented to tackle the leakage
(used in Bihar)

To further ensure the efficiency implementation of Shanta Karmar Committee can go a long way in efficient functioning of fair price shops.

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

With low productivity of Indian agriculture (only 15% to 40% of India) and high dependence on youth (45% employment), the intervention of startup ecosystem in farming ecosystem can go a long way.

Agri-tech startups in Farming sector : Farm productivity and market Access

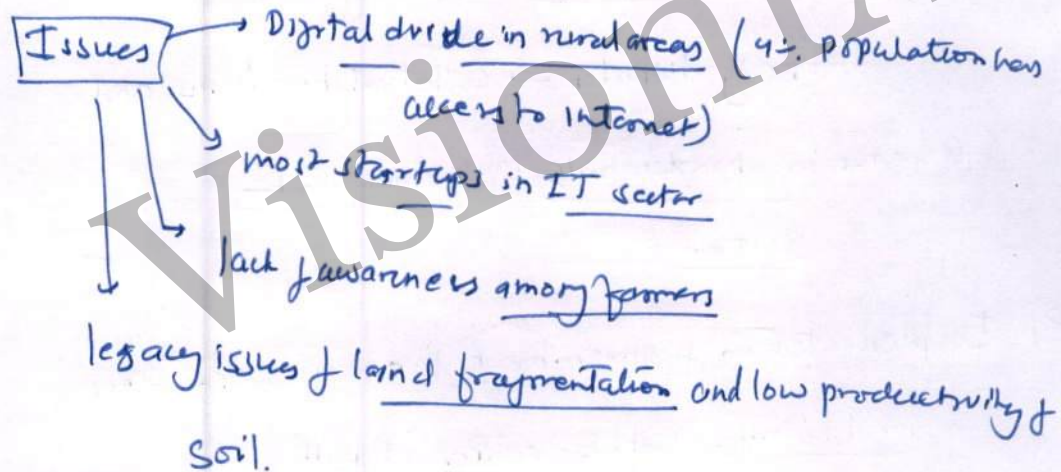
- ① Increasing the funding to farmers
 - ① P2P India by Neha Jumeja to ensure funding.
- ② enhancing the market information
 - ① e-Saavy by IIT Hyderabad for ensuring information is present.
- ③ Conserving practices are in sync with increasing productivity
 - ① use of drones by startups to spray fertilizers.
- ④ & Increasing formation of farmer producer organizations
 - ① Startup by Amal Saver

⑤ To ensure that connectivity of farmers remains to market eg IFFCO uses various provisions in this matter.

⑥ New crops and fertilizers to the farmers

~~eg~~ startups in the biotechnology

⑦ Startups are forming an interface between the government and farmers ensuring implementation of schemes.



Gov MS Swaminathan observed that while technology can increase yield, income increase of farmers can only come with synergy in public policy and technology.

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

With $\frac{2}{3}$ rd of Judicial cases about the land disputes, land reforms surrounding the digitization can significantly increase the free and clean land titles in India.

Role of digitization of land records in implementing land reforms

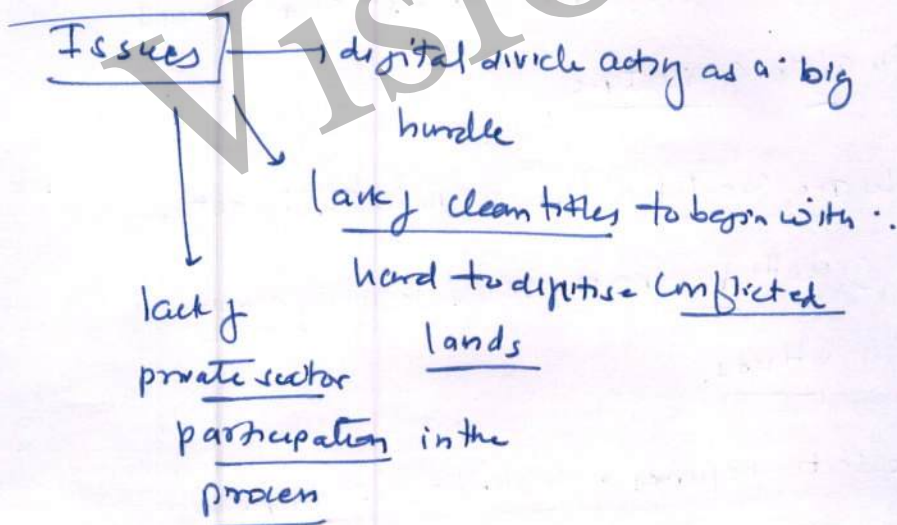
- ① ensure conclusive title: reduce the property disputes → collateral for loans and increase in productivity of farming sector
- ② Implementation of government programs regarding land to tiller will be easier at full implementation.
- ③ Inclusion of private sector in the land reform process due to digital maps
- ④ cadastal maps on internet will enhance infrastructure

In infrastructure development at rural areas → through
land pooling of clean lands

⑤ lack of transparency of land records (e) Karnataka has
used blockchain in the process

⑥ Increasingly movement towards co-operative farming
and contract farming with digital land titles

⑦ Reduction in corruptions at local level regarding holding
of land



In this regard the scheme such as SWAMITVA and
digital land record modernisation program can go a
long way if properly implemented.

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

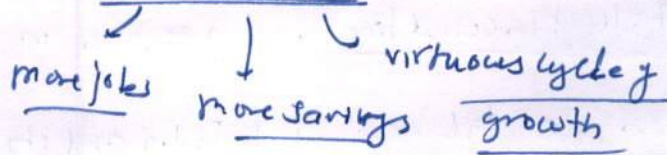
With India experiencing demographic dividend from 2016 to 2051 (37 years), the contribution of Industrial sector (12% to GDP) is far too low to ensure employment to the dividend and its utilization.

Need of manufacturing led growth model: to exploit demographic dividend and economic growth

- ① Employment in Intensive sector
 - ① Textile sector and largest employment provider after agriculture
- ② Good jobs are created within the industrial sector as
- growth prospects, social security among others.
- ③ Service sector requires high skills, not available with Indian youth
(5% skilled population, 52% mus)

④ Infrastructure development for Industry expansion

will create ~~more~~ multiplier effect

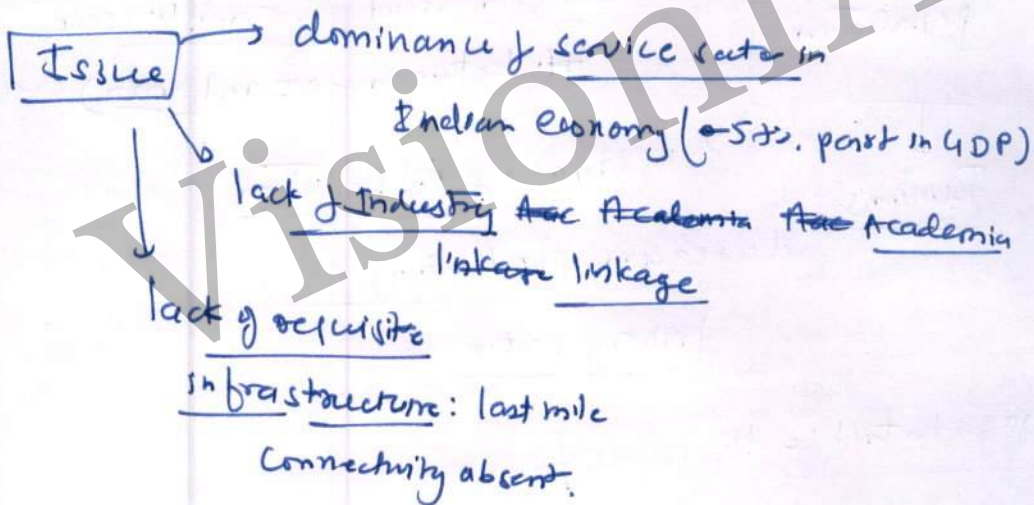


⑤ To make export sector sector competitive

(e) MSME contributing to 42% of exports.

⑥ Overdependency of Agriculture sector will be removed

→ issue of underemployment



Moving ahead skilling of population through Pradhan Mantri Kaushal

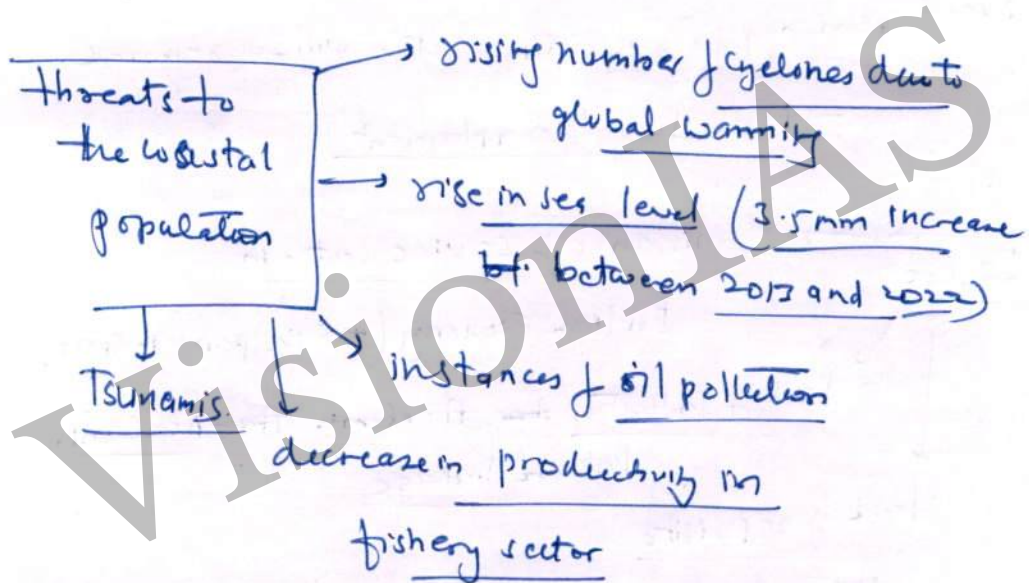
Yojana, and implementation of make in India

and production linked incentives can go a long way.

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

With 7516 km coastline and presence in tropical region, coastal regions of India and its population several threats exacerbated by the impact of climate change.



Ways to tackle the issues

① Diversifying the employment portfolio

→ moving away from fishery dependency
↓
→ to viable manufacturing sector employments
↓
reducing the population in the area

② Capacity building among the population : regarding

Cyclones and Tsunamis/Terram Tsunamis

③ Early warning framework to ensure that threats
are identified

④ Hazard zoning to ensure infrastructure is not
created in vulnerable areas

⑤ Implementation of disaster management plan at
local level with civil society

⑥ Cyclone shelters to ensure protection from
Cyclones

⑦ Awareness among the population regarding the threats
identified

⑧ Removal/Replacement of poor quality material
houses with concrete houses

Except Implementation of these measures can push

India towards achieving the Sandai framework goal of
reducing ^{numerous} people affected from disasters.

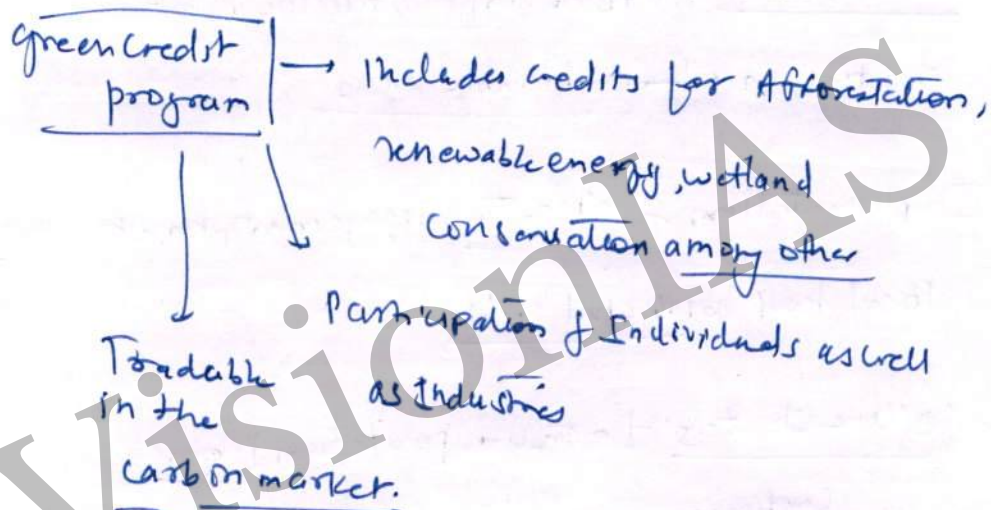
7.

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)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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10

Green credit program works on the approach of providing credits for implementation of environmentally sustainable activities, which are freely tradable.



Impact of green credit program beyond Carbon management: Sustainable environment

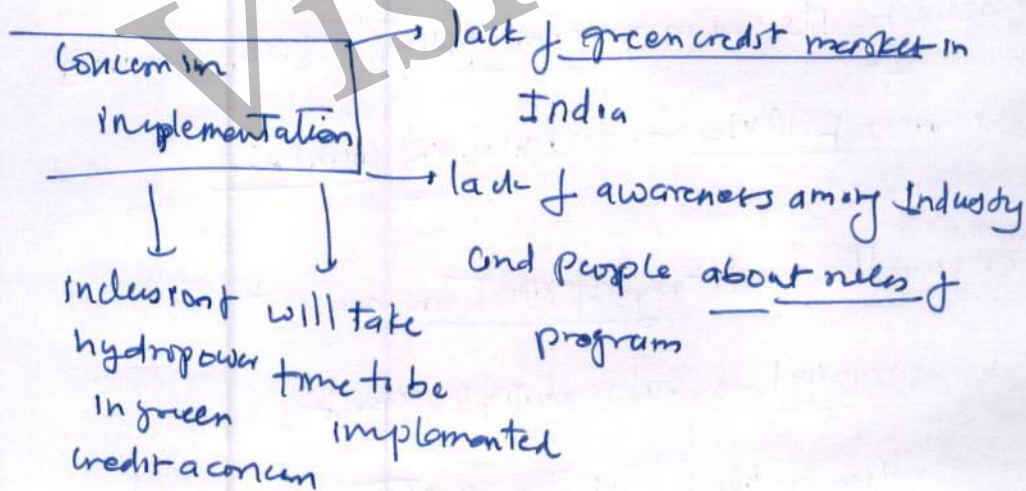
- ① Increase the incentive towards transition ~~towards~~ towards renewable energy
- ② Inclusion of Individuals → promoting the concept of Life LIFE

③ Reduce green house emissions: decrease
the global warming

④ Afforestation like Activities likely to create
positive impact on intergenerational equity

⑤ Companies can now ensure tradable permits are
present to tackle the renewable energy challenge
and ensure gradual transition

⑥ In sync with global best initiatives such as
carbon border adjustment mechanism



To deal with the challenge stakeholder consultation
along with syncing the activities with global standards
is need of the hour.

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

NavIC provides for indep. indigenous satellite navigation program to ensure tracking & location and ensuring the use of global location for various sector of Indian economy.

Need for NAVIC while other systems are available

- ① Compatible with Indian landscape : as specially designed for India
- ② ensuring its use in foreign policy : India provides services of NAVIC to neighbouring countries
- ③ Ensure the military applications are not compromised → vulnerability in case of other nation's navigation system.
- ④ Tackle the disaster management : risky instances of disaster in light of climate change

need a navigation system.

5) Reducing the dependency of Indian startups to an foreign navigation system.

6) Reduce the cost to the innovators through use of indigenous system.

7) Nuanced implementation in Indian Agriculture to enhance productivity

Ensuring Synergy of NAVIC with Indian ecosystem along with collaboration with private sector is the need of the hour.

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

With the rise in penetration of Internet (739 million users in India) the threats of cyber are accelerated impacting the critical infrastructure to facilitate money laundering.

Cyber financial crime → money laundering's new frontier

① Rise in sophistication of attacks : (e)

Ransom worm wannacoy in 2015

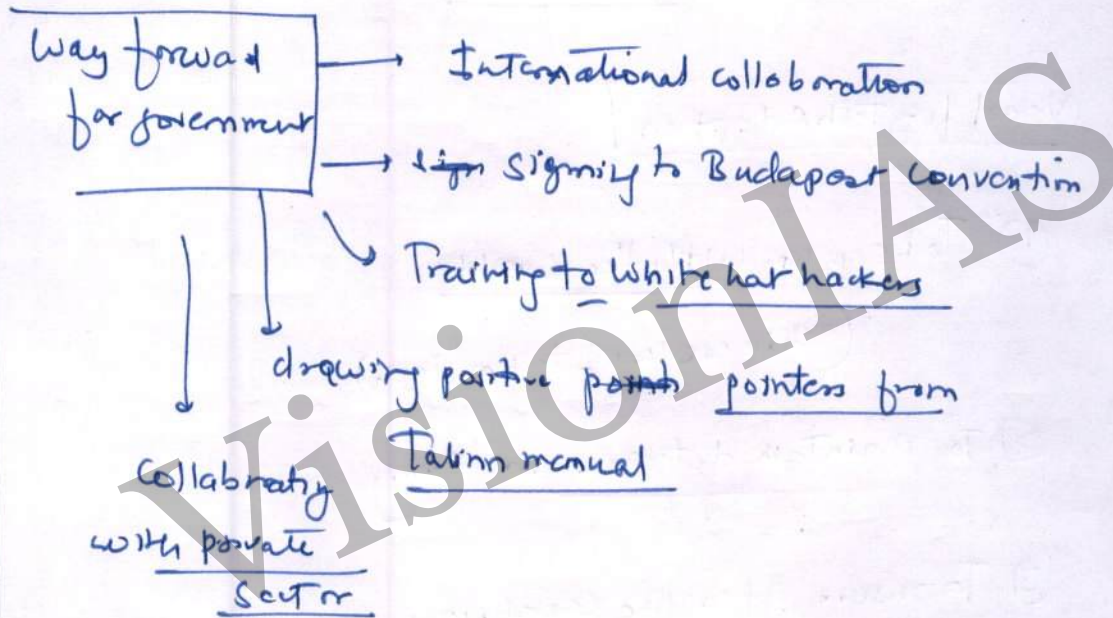
② Penetration of internet leading to vulnerability of critical system

(e) ^{cyber} Attack on AIEMs

③ Inclusion of Blockchain technology : virtual removal of law enforcement agencies from the supply chain

4) Lack of deterrence : ~~pro~~ use of proxy and virtual private network make it difficult to tackle the issue

5) Fast innovation → security agencies playing catching up



In the recent time India along with ~~ET~~ CERT IN and National cyber crime ~~and~~ co-ordination centre have ensure protection of infrastructure

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 क्षेत्र 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

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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Technology plays a key role in defence sector pushing the military ahead of other nations and providing an edge in combat operations.

Need for tech adoption

① To keep up with the world
(Chinese use of tech in logistics)

② To maintain detrence in Army

③ To ensure offensive capabilities are maintained

Challenges

① low Budgetary responses

② lack of private sector participation

③ lack of defence industry

Way forward → ensure private sector participation
→ increase budgetary spending
→ innovation through startups

this would put India ahead of other nations in
moving towards AMBITKAL of 2047.

VisionIAS

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 शीट में नही लिखना चाहिए
 Candidates must not write on this margin

15

North east India contributes 2% to the GDP, 4% of the total population of India and 8% of the land. Their natural resources and strategic position call for rapid development of Industries in the region.

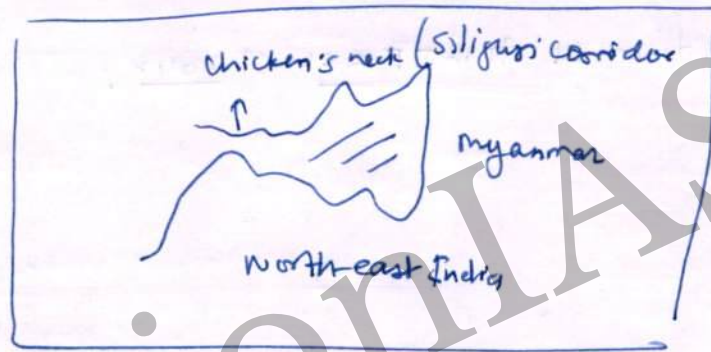


Fig - North east India

Four Issues faced in development of trade and Industries in the region

- ① Lack of connectivity → lack of development of roads, railways, airports etc. have hindered communication.
- ② Lack of skill and education among the youth and gap between Industry and Academics

- ② Difficult terrain leading to lack of development of large de-stored Industries
- ④ Connection to strategic area → vulnerability to the golden triangle → dry trade issue
- ⑤ Relative instability witnessed in North-east region
- ⑥ Neglect of the region by mainstream India have also contributed to it.

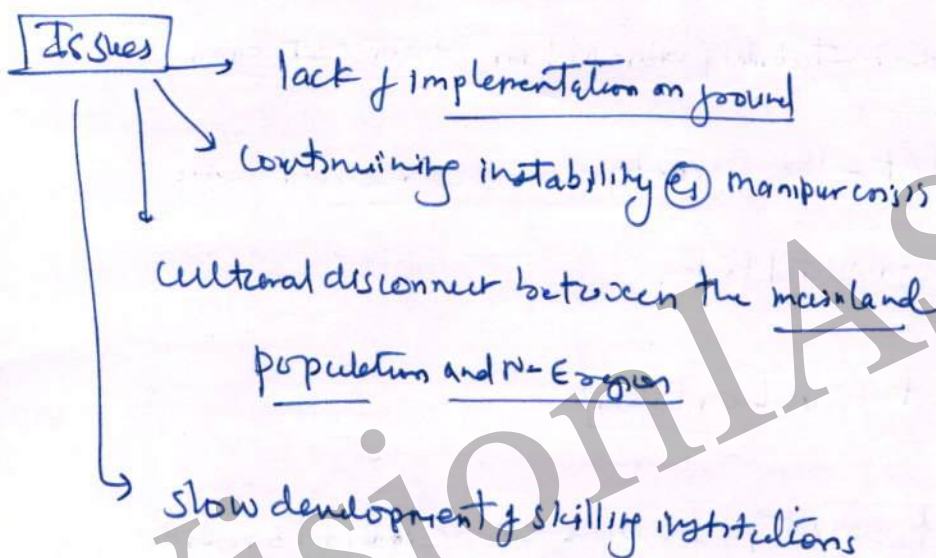
Steps that have been taken

- ① Special ministry for North-east region → to provide Special Assistance to regions
- ② Development of airports under UDAN to ensure connectivity
- ③ oil palm mission having special mission orientation towards North eastern region
- ④ expansion of gram Sadak Yojana towards the North eastern States
- ⑤ Strategic measure along with Indian neighbours.

5.1 Akhaura-Agartala railway link.

5.2 Kaladan multimodal project with Myanmar
to ease transportation

5.3 crucial part of Look and act east policy of India



To move forward there is a need to utilise N-E region
as crucial part of act east policy along with dedicated
efforts to Build infrastructure in the ambit of National
Infrastructure pipeline.

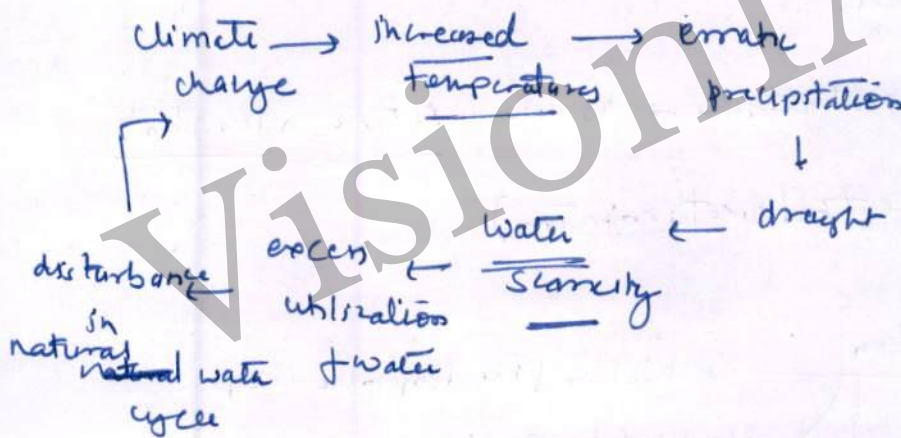
12.

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

India consists of 18% of world's population but only 4% of water resources, contributing to water scarcity. This is further accelerated by the impact of ~~the~~ rising temperatures around the world.

Climate change and growing water scarcity



Contributions that micro-irrigation systems can provide to sustainable agricultural practices

① Less wastage of water ② drip irrigation infiltrating down at the roots.

③ Suitable to all kinds of terrain ④ sprinkler irrigation

② No issue of salinity as water logging is avoided

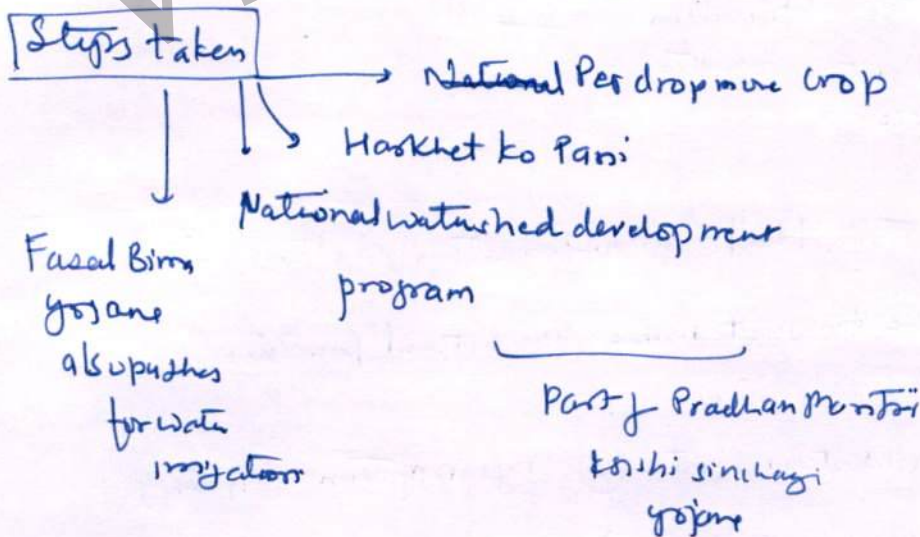
① Do not get disturbed due to impact winds

④ sub-surface irrigation

⑤ less energy requirement as compared to flood irrigation

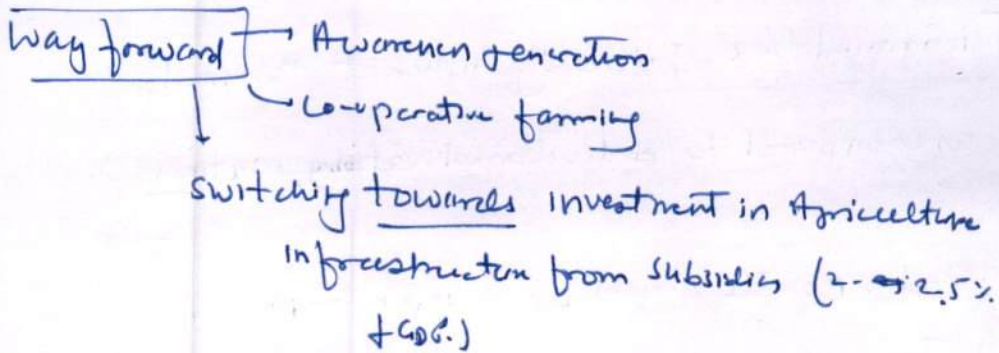
⑥ Increased productivity : ④ Fertigation (directly dropping fertilizers at root) practices can ^{have} increased yield.

⑦ lower pest attacks → as low moisture on the plants
(④ central pivot irrigation)



Issues that are present

- ① expensive to install as compared to conventional methods
- ② skills needed to operate : technical issue require expertise
- ③ low capital in the hands of farmer to install such systems
- ④ lack of incentive → Free electricity is being provided.
- ⑤ low Penetration of technology (45% mechanization in India (57% in China)) relatively slow in rural areas



whole of society approach is needed by government to
make the transformation to efficient and remunerative
agriculture

13.

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

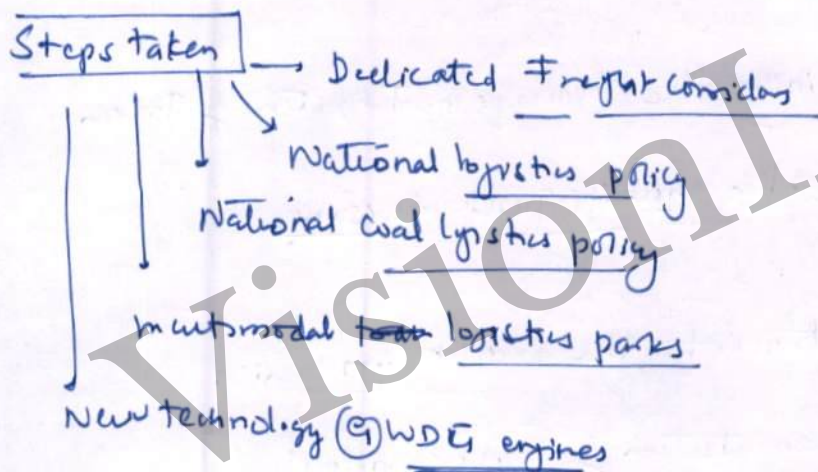
What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

Indian freight transportation consist of 4th largest freight carrier in the world, contributing 33% to the total modal mix in transportation (target 39.45%)

Issues that are present in freight transportation

- ① Cross-subsidization → charging more from freight transport as compared to customers
↳ decreasing the competitiveness in a market.
- ② slow speed of trains (23.6 km/h average speed) as developed compared to developing nations (50 kmph in US)
- ③ Turnaround time significantly higher at terminals as compared to developed Nations.
- ④ Lack of separate tracks for freight trains → leading to overcrowding
(90% of rail route → more than 100% crowded)

- ⑤ frequent number of accidents : decrease in safety & freight carriage carriers
- ⑥ Dominance of Road transport (60%) with high kilometrage
- ⑦ ^{slow} Technological Adoption and management issues
(17 zones in railways) ⇒ delayed decision making



Steps / strategies needed

- ① Spec Private sector participation in the ^{freight} terminals
(Biswak Debroy committee)
- ② Pushing towards last mile connectivity to implementation of Sargo Sagarmala Program to increase freight transport.

- उम्मीदवादी व इस हिसाब में नहीं लिखना चाहिए।
Candidate must not write on this margin.
- ② Competitive pricing of the freight → reducing the cross subsidization
 - ④ Reducing the logistics cost (10% of GDP (decreased from 14% of GDP))
 - ⑤ Private sector participation in development of highways and roads.
 - ⑥ Streamlining the management system of Indian railways → for ensuring quick decisions
 - ⑦ Separate tracks for the freight lines carriers
→ Implementation of freight corridors

Along with this implementation of Kakodkar committee and Biswak Debroy committee recommendations can further enhance the freight transportation in India.

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 हार्फ में नहीं लिखना चाहिए
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With target of carbon ~~net~~ neutrality of 2070, India has achieved 45.5% share in renewable energy and continuously pushing towards reducing CO₂ emissions and decreasing the impact of global warming through efficient energy systems.

Factors that have aided in making impressive strides

① Political will: continuous push from government.

1.1 - FAME scheme for electricity vehicles

1.2 - PLI (Production linked Incentive) to manufacturing of solar panels

1.3 - state level policies → UP govt government providing subsidies for hybrid vehicles

② Global energy transition/climate - shift of energy

can be seen across the world, pushing India

to do the same.

③ Alternative that have been utilised (e) Biofuel
energy push owing to large agricultural waste
(₹ 92000 crore more every year)

④ Industry Academia linkage to provide technological
support.

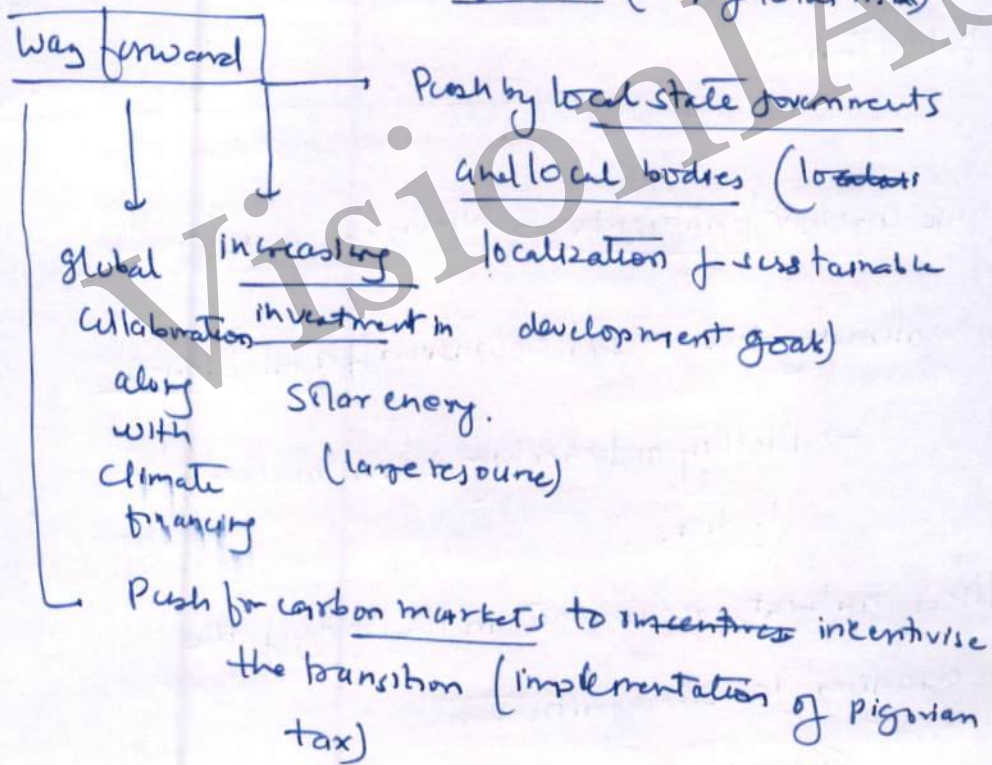
⑤ Large skilled population to be employed
(50.3% of population employable acc. to
India skills report)

⑥ Startup ecosystem in the area (e) (a) electric
vehicles) (3rd largest startup ecosystem
(more than 90000 startups)).

⑦ collaboration with the world (e) International solar alliance
Issues that are still present

① Rising cost associated with renewable
transition → subsidies are required adding
to FISCAL Burden

- ② Lack of penetration of renewable energy at rural areas (48% still use wooden stoves)
- ③ global argument against nuclear energy, providing 1.6% to Indian energy mix
- ④ Skilled population still lower as compared to rest of developed nations (97% in Korea) (5% in India)
- ⑤ Significant contribution of coal (50% of total mix)



Transition to renewable energy in India can help India achieve the sustainable development ^{goal} of clean or 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

With ~~pest~~ pesticide utilization of 0.1% of agricultural most of agricultural runoff contributes to environmental pollution in terms of bioaccumulation and algal blooms.

Agricultural runoff contribute to A environmental pollution

① Large amount of nutrients → Nitrogen, phosphorus allowing the rapid expansion of algal blooms

→ blocky and chocky of river and water bodies.

② These nutrients accumulate in the body of the organism ie Biomagnification

(a) Thinning of shells of Birds due to D.D.T

③ change in environment ^{of water bodies} leads to ↑ in invasive species

(b) Lantana camara

- (4) Death zones are created due to low oxygen presence
- (5) Further the water from these bodies consist of algal toxins contributing to health hazards to animals and humans
- (6) Speedy drying up of lake due to eutrophication
→ succession hastened leading to water scarcity

Measures that be taken

- (1) Reducing the use of pesticides and fertilizers
 - (a) use of ZBNF (Zero Budget Natural Farming) to reduce the pesticide use
 - (b) Treatment of agricultural runoff before contaminating water bodies : i.e. waste management and treatment plants
 - (c) Use of ~~strong~~ Biological methods to control the

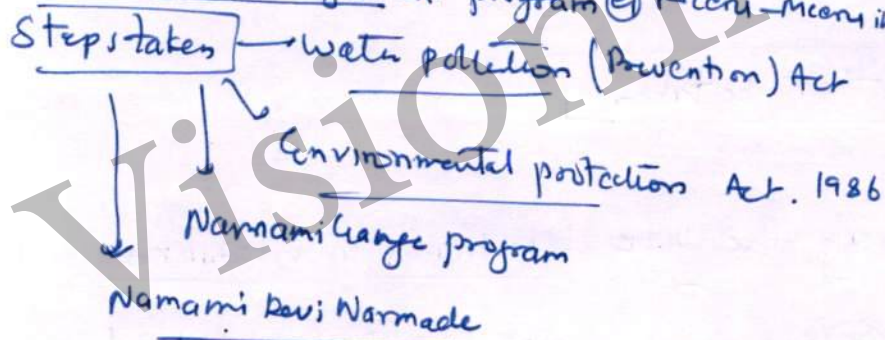
pests (e) Trap crops and biocontrol agents to reduce the pesticide use and increase yield.

(4) Reducing the subsidy on the fertilizers \Rightarrow reducing the availability of fertilizers to move towards natural solutions.

(5) Frequent cleaning of water bodies to reduce the invasive flora and improve oxygen content.

(6) Watershed management program (e) Narasimam - Mcon in Rajasthan

Steps taken



Along with the topdown approach, civil-government collaboration is needed to ensure that ownership generation happens at grassroot levels.

6. 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

Carrying capacity of an ecosystem essentially implies maximum number of biodiversity and human encroachment it can sustain. Ductorsing in infrastructure development Himalayan carrying capacity have been on Bank line.

growing influx of tourists : rising man-made disasters

① Rising infrastructure projects impacting the mountains (a) Setunnel tunnelling through the mountains

② Rising waste in the Himalayan area - impact of biodiversity

③ Unsustainable tourism : Hotels and town growth are haphazard (a) Uttarakhand
tragedy in 2013 due to haphazardous planning

④ Rising number of vehicles : CO₂ emissions →
leading to melting of the glaciers → rising number of
landslides

⑤ Man made dams to sustain water supply for
tourists → impact of earthquakes

Measures that can be taken to balance rising tourism with
prevention of disasters

① Implementing limit on number of tourists :

④ Being done in Venice to reduce impact through
taxes and ticket prices

② Environmental impact Assessment and involvement of
Public before commence of projects.

③ Hazard mapping of the areas to avoid construction
on the vulnerable areas.

④ Early warning system to reduce the disasters in

the last stages.

- ⑤ Earthquake resistant engineering to reduce the risk (Himalays included in zone II related to earthquakes)
- ⑥ Participation and society to assess the impact of rising tourism to ensure grassroot communication.
- ⑦ Switching to renewable energy in long term to ensure reducing impact on glaciers (2070 Carbon neutrality)
- ⑧ Initiatives of sustainable tourism is respecting the culture of hill population along with environmental sustainability.

To implement these measures will of political leaders along with collaboration with private sector is the need of the hour.

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)

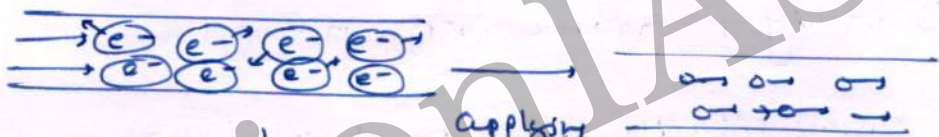
How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

Superconductors allow the transfer of electricity with negligible resistance while cooled at super low temperature.

This ensures practical applications in varying space of ~~sumat~~ scientific development.

Superconductor



↓
Critical temperature

Applying

electricity

at very low

temperature ↑

Super conductivity

drastic reduction in the resistance offered

Fuel innovation in diverse fields

(1) low resistance → application to electric gadgets

gadgets

(2) semiconductors in the

mobile phones → ^{potentially} increasing the battery life.

② efficient flow of electricity allow continuous flow
for a long time → can be implemented in
operation of maglev trains and hyperloop technology
(IIT Madras)
working on it

③ Renewable energy transition → due to efficient
transfer and conversion of electricity
(to ensure 50% renewable energy goal)

④ In the scientific experiments

④ CERN and other experiments such as
Tokamak → efficiency of electricity
can be increased

⑤ Rising use of Artificial Intelligence

s.1 → Better computing power

s.2 → Better analysis of data through faster
Speed

s.3 → emphasis on machine learning

s.4 → increasing domestic development of super
computers at high speeds

6) Innovation at ~~the~~ aviation field with reduced fuel usage

⑥ Drones can be manufactured that employ less heavy batteries

7) Converting fresh water from salty water can be made energy efficient, through use of superconductivity

8) Robotics are a major ~~area~~ to improve the manufacturing lines and save cost and time.

To implement these model collaborations with private sector and continuous ~~incentive~~ incentives are the need of the hour. India can leapfrog into the future if the potential is utilised

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 हशिफ में नही लिखना चाहिए
Candidates must not write on this margin

IPRs (Intellectual property rights) are Creations of the mind including Innovation, music, variety which be tangible or intangible. To protect these India implements host of laws ensuring ~~some~~ remuneration to Innovators.

Laws of India for intellectual property rights

- ① Patent Act, 1957 → to ensure patent for intangible creations
- ② Geographical Indicators Act → for GI (geographical Indicator) Tags for particular regions
- ③ Protection of plant variety Act : to ensure protection rights of plant varieties and commercial breeding
- ④ Singing of TRIPS (Trade in intellectual property rights) → implemented in domestic laws.

Challenges that present: enforcement, regulatory and administrative

① Issues related to the Administrative area of patents

① granting patents by hired workers was an issue, with ministry reversing the patents

② Delays in the patent applic. of a particular innovation

③ Vacancies in the Administrative posts: further delaying the procedure

④ Prevent recourse to the compulsory licensing
→ impacting the rights of innovators

⑤ sui-genera nature of protection of plant varieties Act:
allows for breeding of patented crops by farmer

⑥ Lack of expertise in the ministries regarding patent rights.

⑦ Lack of enforceability: ① crossing issues of Intellectual piracy

Way forward

- ① Implementing the international standards in the laws
: ensuring sync with the TRIPS
- ② less use of compulsory licensing to ensure protection
of rights.
- ③ Awareness generation among population (e) IPR
masot
- ④ Streamlining the Administrative authority : ensuring
reduced time for granting of patents patents
- ⑤ Strict law enforcement : to tackle the violation
of IPR laws on internet.
- ⑥ Industry Academia Linkage to ensure
rise in innovation at universities

Along with this collaboration international partners
at multilateral platforms will go a long way in
implementing solving the issues.

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

Theatre commands essentially argue for synergy between the three armed forces under a single officer ensuring lowest resistances and efficiency in operation.



Significance of theatre commands : greater integration rationalization and of man power and resources

① greater synergy among the forces : ②

in efficient co-ordination ~~lead~~ led to disaster result in 1962 Sino-India War

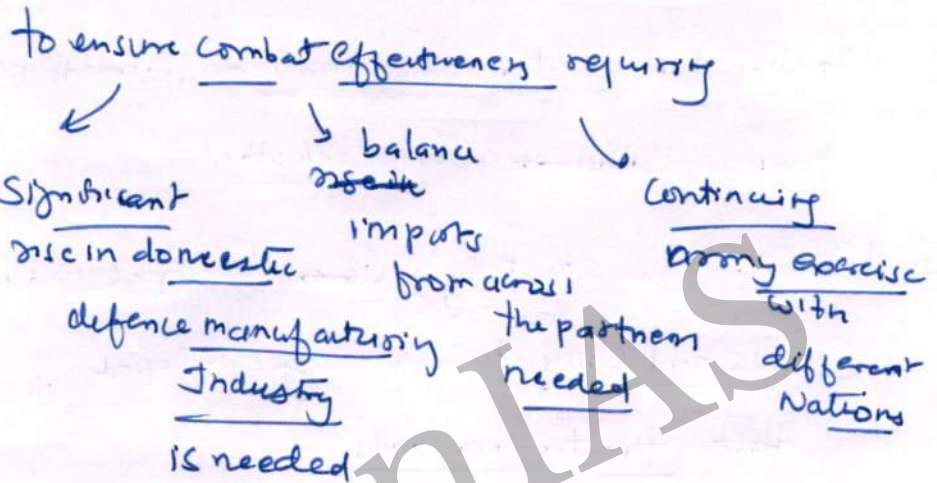
- ② Proked procurement of the Weapons and resources → Increasing efficiency and reducing costs
- ③ Combat readiness → given the threat of China and Pakistan on borders
- ④ Allowing for greater modernization of armed forces : training ~~with~~ among each other
- ⑤ following the strategy of US and developed nations
 - ① US and China have already developed theatre commands

Challenges that are present

- ① slow procedure : It takes significant time to develop synergy among the armed forces.
- ② late start by the Indian government as compared to China
- ③ Training of forces under single command is a challenge
- ④ At the same time keeping armed forces ready for combat even during the transition is essential

⑤ Requirement of political will at the higher levels is top necessity.

⑥ Along with theatre Commands; the end to goal is



Way forward

→ Rising defence expenditure (low as compared to China)
→ expeditious approvals at higher levels
→ modernization of armed forces along with theaterization.

To ensure that India remains at top jobs capability in volatile international environment, theaterization is one of the essential requirements.

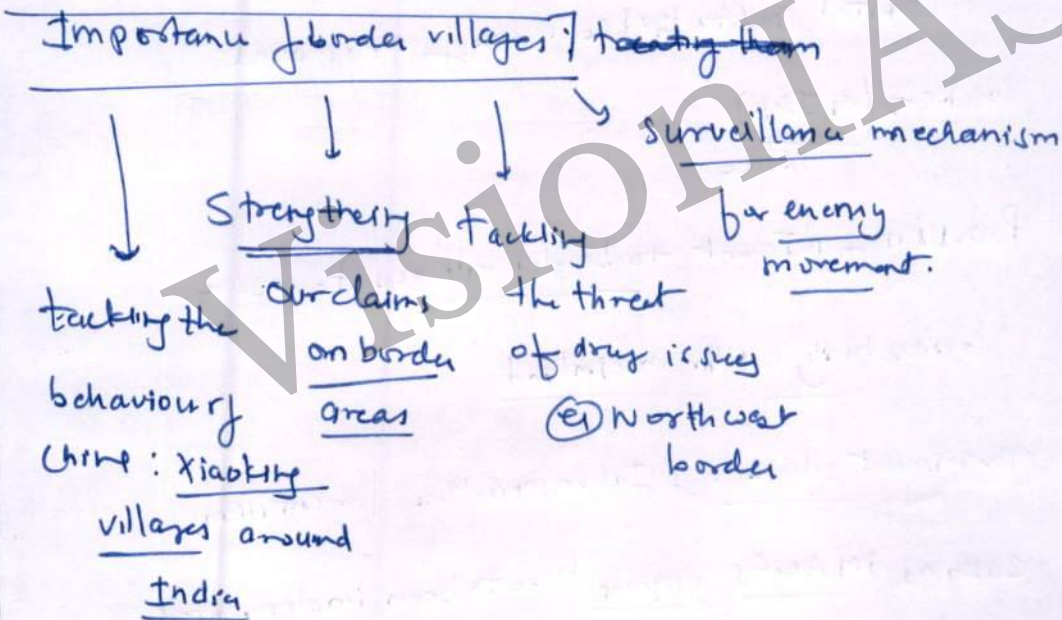
सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

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)

उम्मीदवारों को इस हदिए में नही लिखना चाहिए
Candidates must not write on this margin

15

With rise in incursions from Northwest and Northeastern border, the importance of border villages have risen in recent times. Border villages have the potential to act as first response to India's border realities



Treating them as first villages geographically as well as in terms of facilities : Strategy

① Implementing the Infrastructure projects to ensure →

movement of military vehicles → Facilitate to the villagers.

② ~~Training~~ Training of villagers in surveillance mechanisms as well as skill development

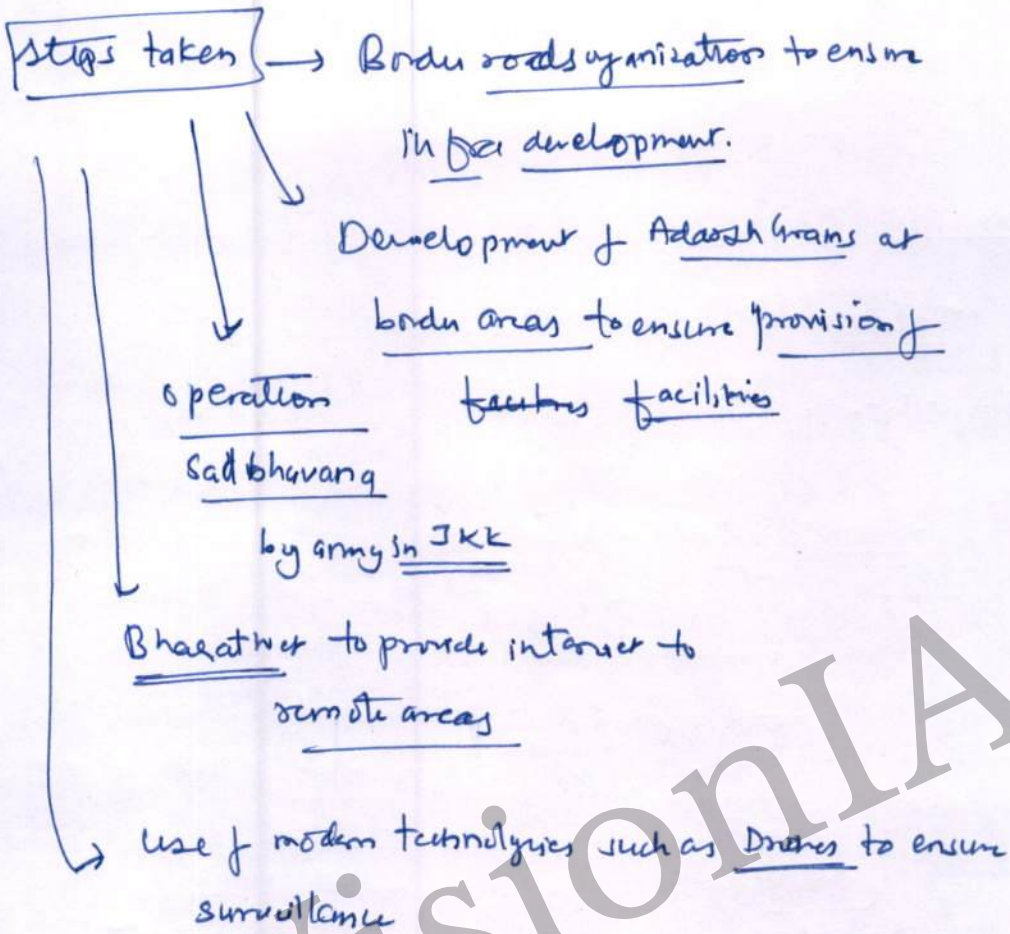
: to ensure migrations ~~do not~~ not happen from these areas

③ Dominant job of armed forces → to develop social capital and to tackle issue of overground workers (e.g. JK) Issue

④ Provision of Internet to border villages to ensure connectivity with mainland

⑤ government schemes of Infrastructure for civilians such as PM Awas Yojana have to be implemented in border areas First.

⑥ Need of Actual collaboration with villagers at political level → democratization of political process is need of the hour.



To further increase the usefulness, eventually strong
link with the local population along the local
civil society can be instrumental way forward.

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