

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 उपरान्त 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. : 00051357

अभ्यर्थी का नाम/Name of Student : Aman Alcan

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

25/8/24

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

केंद्र
Centre

Chandigarh

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	महत्वपूर्ण अनुदेश	Important Instructions
	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।	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.
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। (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।	(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates. (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
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।	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.
3	परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।	Do not make any direct/indirect appeal/threat to the examiner.
4	उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।	Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.
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।	Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.
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।	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.
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।	Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.
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।	If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.

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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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

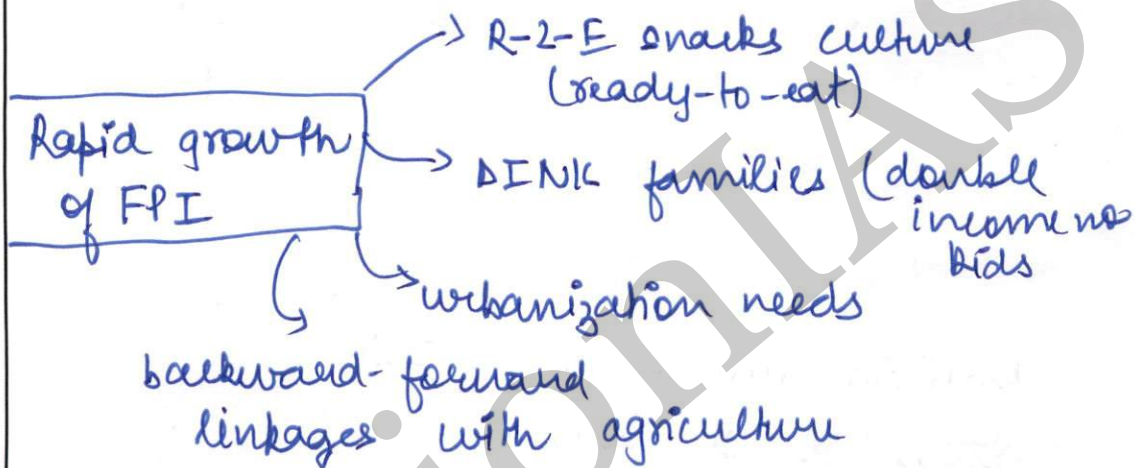
1.

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)

10

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

Food processing industry is said to be the place where agriculture meets industry, with ~11% contribution of industrial GDP.



Food Safety challenges owing to rapid FPI growth

- ① Regulatory catch-up: FSSAI playing catch-up game with evolving fast-food practices ~~eg~~ Ready-to-heat foods
- ② Nexus concerns: criticism of "overdeveloped state" where regulations are least respected by society

③ "Soft State" criticism : inadequate "tough" penal action prompting unhealthier FPI practices

④ Consumerism : profits over values in corporates

⑤ emphasis on exports to countries with loose food safety regulations : incentivizing unsafe practices locally too

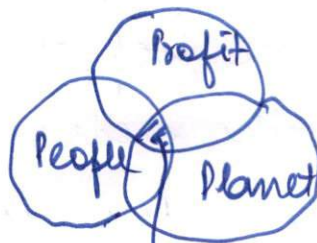
Way Forward

① Utilizing regulatory regime of developed economies

eg. Indonesia model : allowing FPI on US certified products

② Collaborative governance : role of civil society in raising concerns

and,



→ "real" food processing goals of today

2.

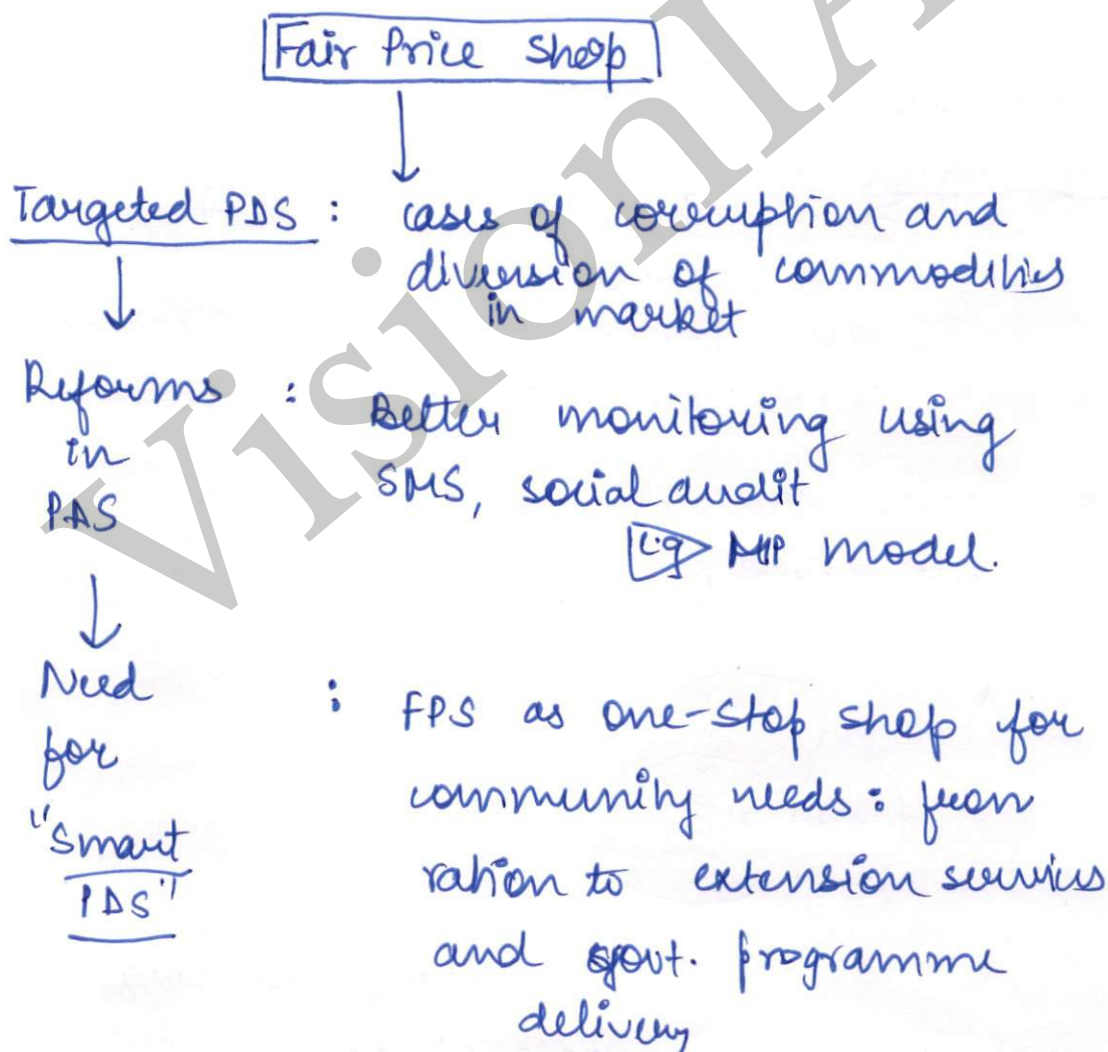
भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

Fair Price shops are keystone to PDS system in India, for they are the interface between policy design and policy benefit sought by beneficiaries.



Thus, fair Price shops in today's
PAS system needs to follow PACS
model

- ① Greater integration with govt schemes
- ② Fast-mile delivery promise
- ③ Target beneficiary identification
- ④ Support for farm input eg gold Urea

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

IR 4.0 isn't only revolutionizing the "white collar industry" but also deepening its impact in the agriculture sector, with economic surety heralding role of agri-tech startups.

Enhancing farm productivity

Challenge

- ① Decreasing land ownership : 1.08 Hectare today (from > 2 H in 1970s)
- ② Ineffective application of input like fertilizers
- ③ Downgrading seed quality

Agri-tech solution

- Collectivization via "uber" for farms
- Precision farming tech with real-time information on nutritional requirements
- Crowd-sourcing of funds via "ketto" of agri-tech

- ④ Inadequate mechanization (~40% in India) vs >80% in China

connecting researchers and farmers via app (from lab to farm access)

④ Custom Hiring centres app like Gramehal.

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

Market access

Challenges

- ① Ineffective price discovery mechanism
- ② Non-trad barriers, including lack of post-harvest infra

Agri-tech solution

- ① Hyperlocal apps that connect buyer and seller without middlemen, like ENAM.
- ② Agri-Accelerator fund to invest in cold storage (Geo survey)

Thus, time has come to rely on ancient wisdom (ZBNF, natural farming), but also maruh to future farming with agri-tech

4.

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

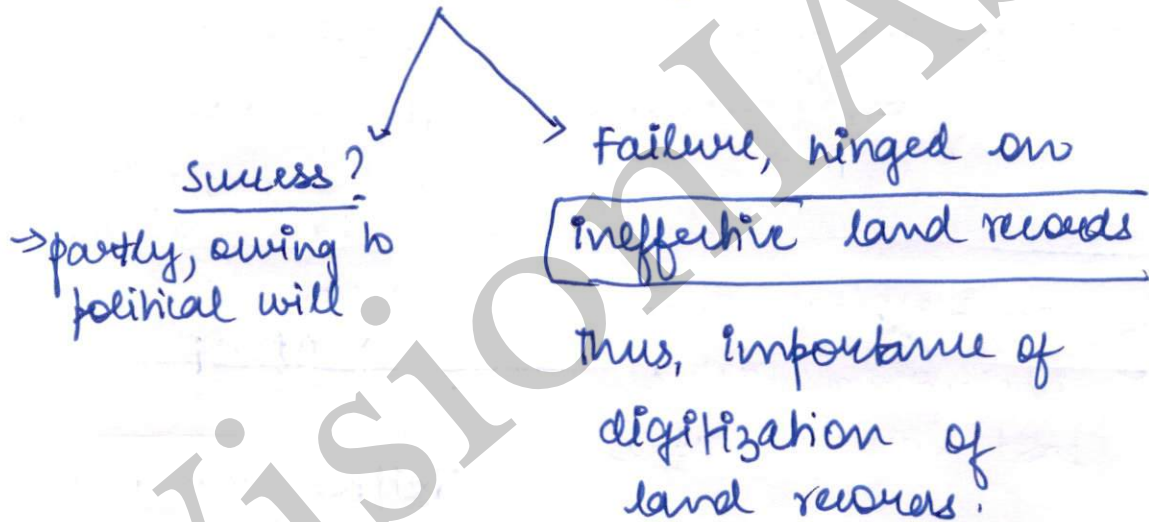
Discuss the role of digitization of land records in the effective implementation of land reforms in India. (Answer in 150 words)

10

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

"If freedom is cornerstone of democracy then land reforms are touchstone of democracy too"

Nehru's vision of land reforms in 1950s involved : regulation of tenant-relations, abolishment of zamindari, land ceilings and collectivization efforts



How will digitization help?

① Clear demarcation of land ownership = better credit access to farmers

② Digitization will prevent litigation pendency too (>30% cases in 4Cr+ pendency)

③ effective implementation of land ceiling acts
→ anti-dote to "loopholes" like land for personal cultivation

④ ensure tenant rights are recognized

⑤ Aid collectivization efforts
→ without digitization, only 2% land surplus was collectivized earlier

Digitization initiatives

- SWAMITVA scheme : use of drones
- Bhumi project of Karnataka
- National land Digitization Scheme
(> 90% digitized lands.

Way forward : National Mission

+

Societal Affirmation

+

Individual Awareness

land digitization, =
as social democracy today

5.

भारत को अपने जनसांख्यिकीय लाभों 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

The rise of "factory of the world" (China) via manufacturing-led growth model has prompted criticism of India's service-led growth. But, do we need to ape China to become Viksit Bharat, 2047?

Need for manufacturing-led growth model

- ① employment elasticity currently is <0.1: thus, manufacturing offers absorption of labour option
eg Vietnam model
- ② Disguised unemployment in agri: while agri contributes 18% to GDP, it has ~46% of labourforce: thus, need to tackle via low-skill manufacturing jobs
- ③ Need for inclusive growth for bottom of pyramid

④ Require balanced sectoral growth :
currently service-led (>50% GDP contribution)

⑤ Stagnant manufacturing : around 15%
of GDP since 1991.

Thus,

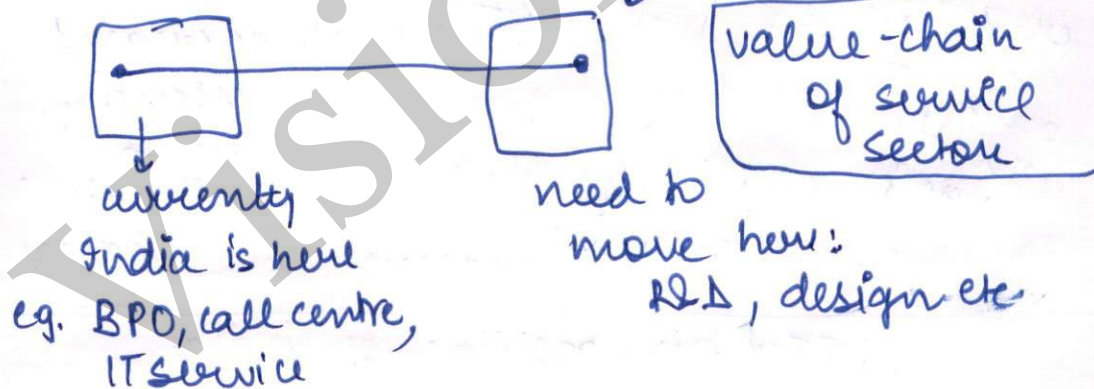
GOI efforts

→ Make-in-India

→ Assemble-in India

→ PLI scheme

However, Raghuram Rajan has
cautioned against aping "China bus" that
India has missed.



Moreover, India's competence in service
needs to be leveraged via employment
elastic services (tourism, health etc.)

Thus, India needs global wisdom
(manufacturing-led growth) and own
competence (service-led growth) for
becoming \$5 trillion GDP

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

From Biparjoy cyclone to Wayanad landslides: Indian coastal communities have been in forefront of suffering from natural hazards, but also responding to the climate change

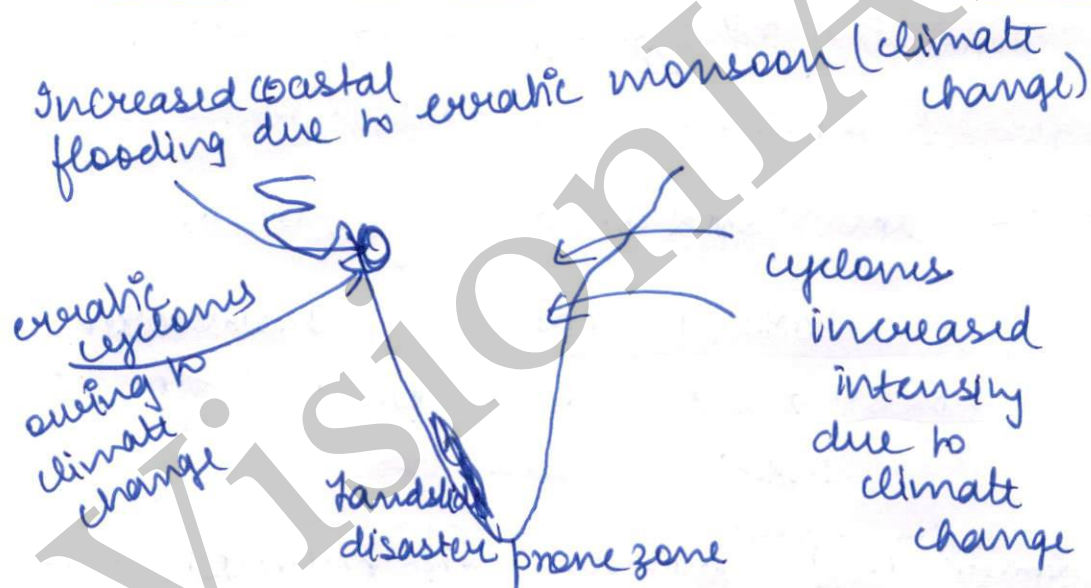


fig: 7500 km coastline of India

Thus, resilience can be augmented via

① Learning from the "lessons learnt"

→ Odisha's Rapid disaster force led to establishment of NDRF.

③ Livelihood disruptions

→ Identification of most vulnerable livelihoods - and offer re-skilling

④ Aligning govt. priorities with coastal communities priorities

↳ Sagarmala's pillar involves coastal community engagement.

⑤ Rehabilitation and recovery help:

more than funds, the challenge of "way of life disruptions" needs to be tackled via psychological help.

⑥ Mobilizing "compassionate capitalism"

for welfare of coastal communities

↳ like Wany's work in migrant crisis

⑦ Leverage international partnerships with coastal communities who've recovered from disaster.

↳ Indian Tsunami and recovery of South East Tribes.

Thus, resilience building is a long term effort that needs all-of-society- and whole-of-govt approach.

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)

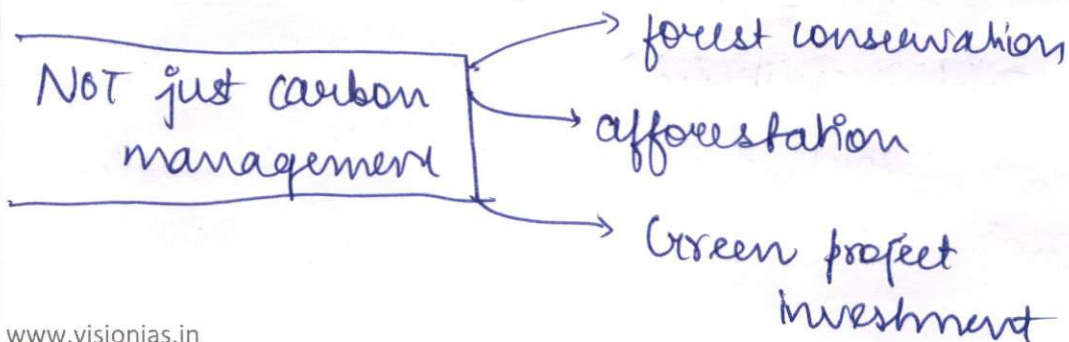
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उम्मीदवारों को इस हशिफ में नहीं लिखना चाहिए
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Green Credit Programme is the latest initiative of the government in its effort to reach net-zero by 2070.

What it entails?

- ① Circular economy approach: ensuring waste-to-wealth
- ② Incentivizing communities and individuals for conservation
 - earning green credits for climate-positive work.
- ③ Mechanizing the system that rewards climate-positive actions
 - on the lines of carbon emission trading.



Various concerns

- ① Abuse of credit system : can promote law of unintended consequences
- ② Efficacy of solution : unused carbon credits as evidence
- ③ Inadequate awareness of GEP
- ④ Belief in social morality than mere credit programmes that drive pro-env behaviour :
eg. saved groves culture.

Way forward

- ① Alignment of different ministries
- ② Private sector participation
- ③ Community engagement via NGOs

thus, Sabka-Sabka Vikas can ensure success of GEP.

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 is India's indigenous satellite navigation system.

Need for NAVIC

- ① Strategic autonomy:
↳ weaponization of tech by west
- ② Accurate measurement
↳ Even GPS suffers in resolution clarity beyond a point
- ③ Rise of Indian space industry
↳ Backward-forward linkages ensure rise of space industry's Infosys & TCS.
- ④ National pride : Indian foreign policy
Objective of "samman" of masses
↳ Similar pride felt by Rakesh Sharma's landing & ISRO's Chandrayaan.

Concerns over existing ones

- ① China domination
 - +
② West alignment with US
 - +
③ alternative in Russia
- = Limited options for India.

Thus, e-governance needs of today demand even NAVIC, for benefits beyond mere navigation



9.

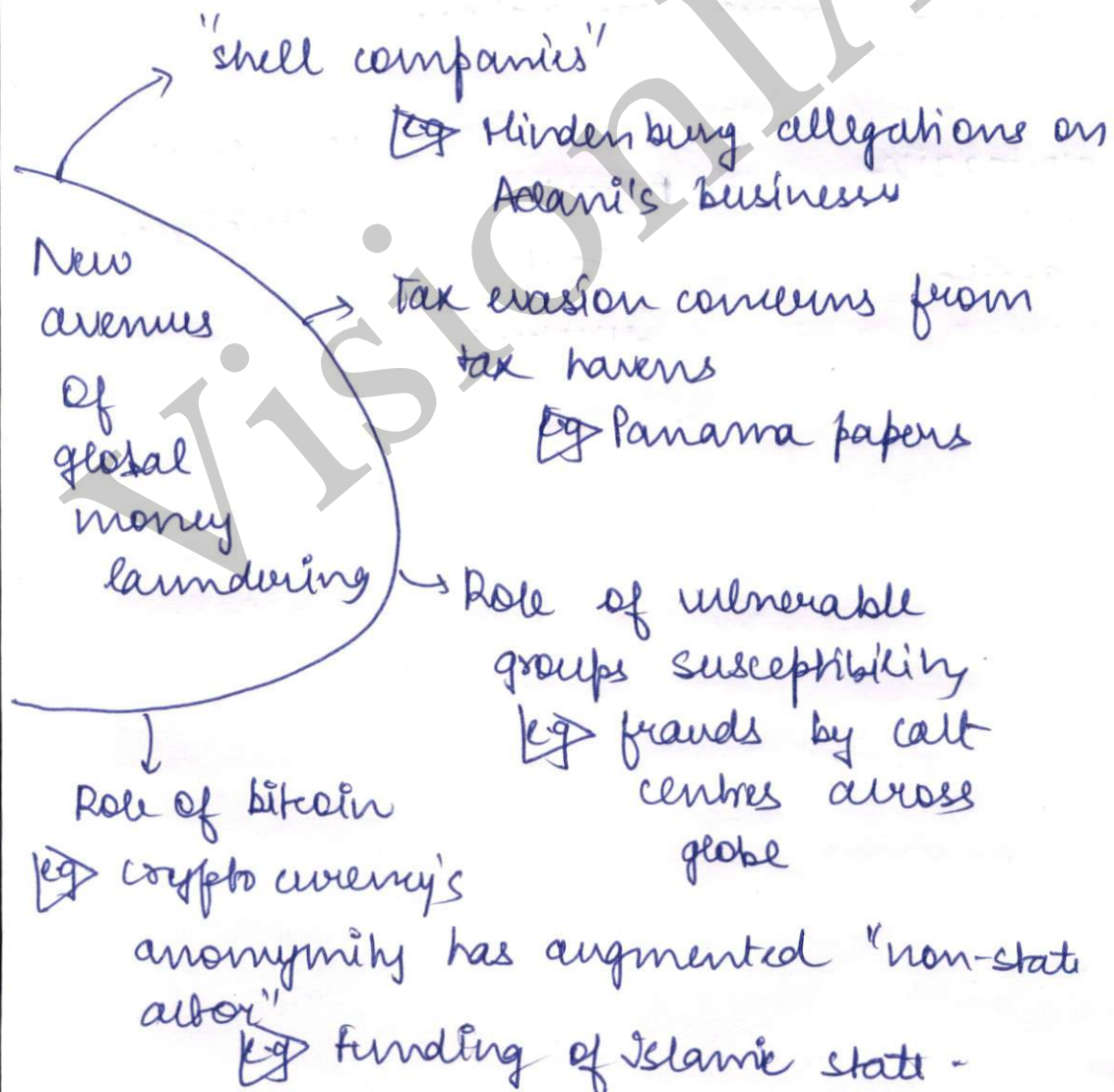
साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

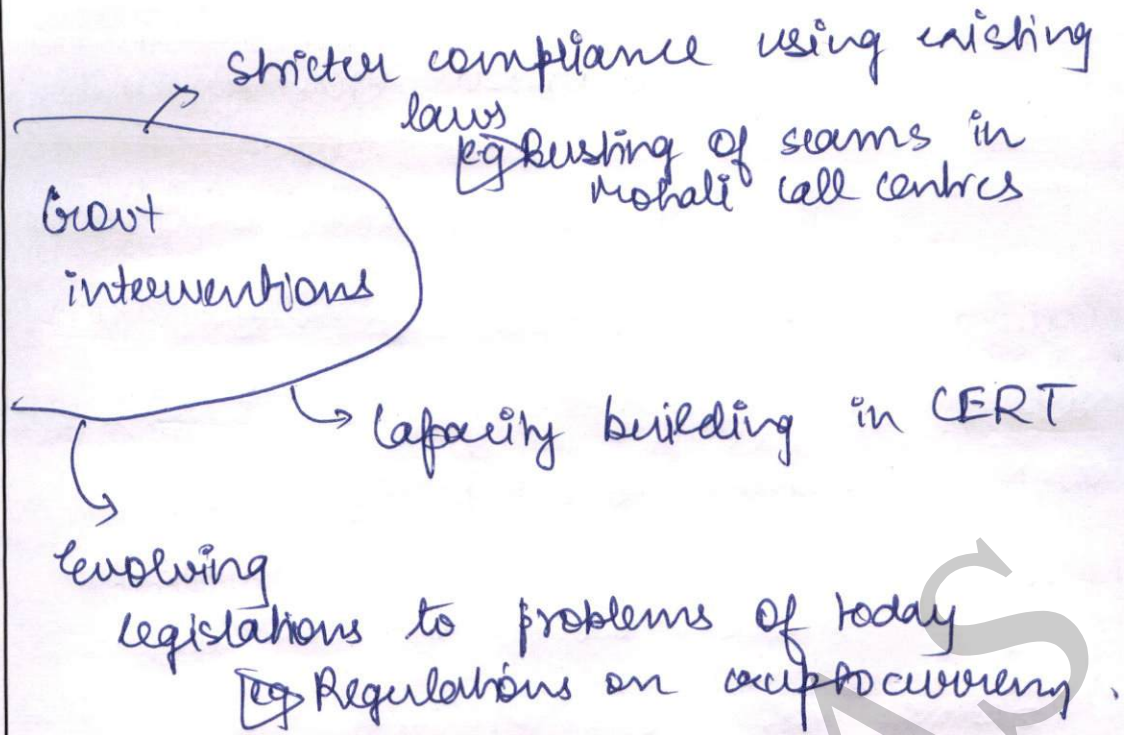
Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words)

10

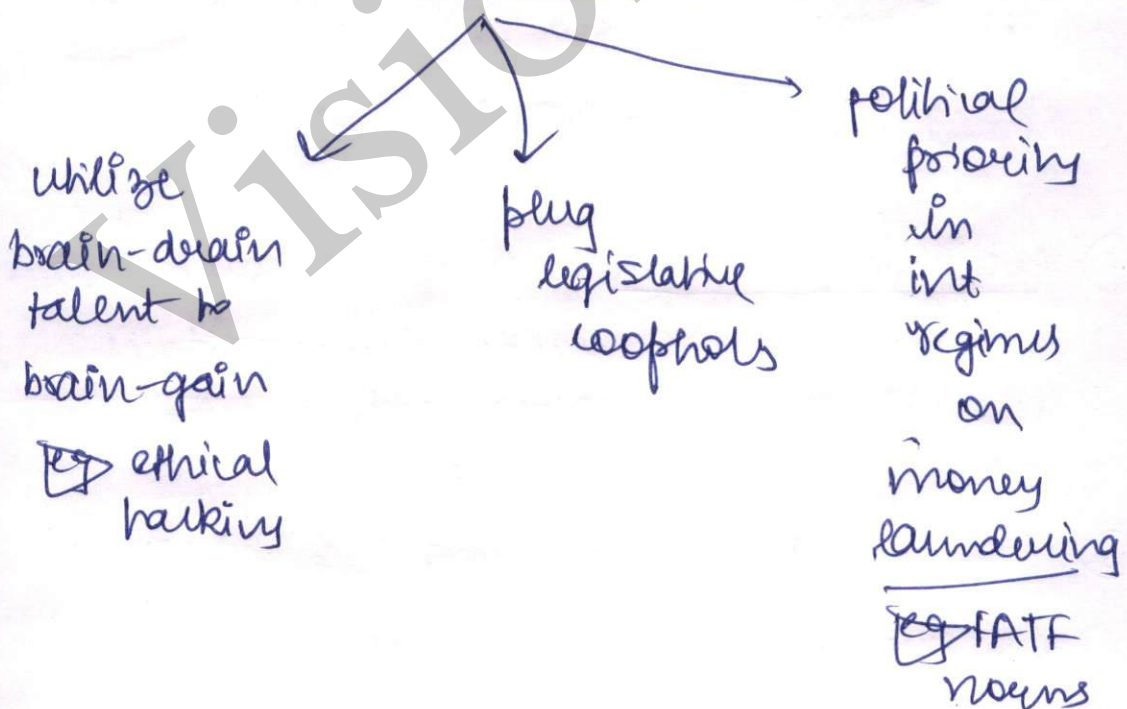
उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Money-laundering is an age-old issue holding the rise of "white" economy in India. This has further strengthened with the advent of cyber-related financial crimes.





Wayforward : Tech problems need modern tech solution



Thus, financial crimes-driven money laundering needs all-of-govt-approach

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

Challenges on the northern border (Ladakh crisis), western border (greyzone warfare), and eastern border (porous border) has prompted the role of "tech absorption" in Indian Army.

Need for tech absorption,

- ① Strategic autonomy: supply chain dominance by few countries is a risky path. [eg] S-400 missile supplies amidst Ukraine crisis
- ② evolving challenges: greyzone warfare, role of AI and robotics, cyberattacks
[eg] Mumbai power grid attacked amidst Ladakh
- ③ Modernizing "enemy" countries % Chinese PLA modernizing in 'lean force'
- ④ Growth of indigenous defence tech sector.



Challenges

- ① Limited capital and tech expertise domestically
- ② Supply chain pressures by "enemy" countries
- ③ Tech regimes = tech-denial
(eg) cryogenic engine experience

Thus need internal balancing
+
prv. players in defense

external balancing

partnerships like
Jet engine, ICET

to augment Indian defense to
tackle challenges of today

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)

15

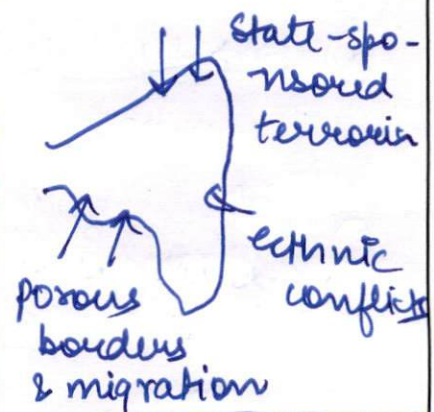
उम्मीदवारों को इस दृष्टि में नहीं लिखना चाहिए
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North East Region (NER) has been facing a historical neglect and "development deficit" since independence, prompting Hon' PM to assert :
 "NER will now become New tea-happy Region"

Issues faced in development of trade and industries in NER

① Geographical Challenge:

Thus, external state's interests in the region promote instability



② Ethnic Hindenbox: 200+ ethnic groups with inter-ethnic conflicts
 → Kuki-Meitei conflict in Manipur

- ③ Secessionist movements: from Mizo movement to greater Nagalim demands: promote internal instability
- ④ Development deficit: inadequate infra in NER doesn't incentivize private sector
- ⑤ Limited new-age human capital:
"industries flock for where the talent is" dichotomy of today meets falling educational outcomes and employability metrics in NER
- ⑥ "Resource curse": endowment with great natural resources promote nexus, corruption - and little innovation beyond primary industries.

Measures taken

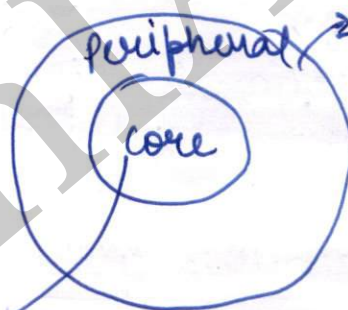
- ① Alignment of Foreign policy goals with NER's interests
 e.g. Act East policy = "prosperity should NOT bypass NER, but pass through it"

② Domestic push: separate dept. for
and political priority NER ensures
alignment of funds-
functionaries

③ Push for private sector involvement
via govt. schemes: tapping in horticulture
strength of NER via KISAN rail.

④ Security challenges ensured via
multi-pronged approach

⑤ Fintech revolution
like UPI: bridging
distances



⑥ Infra CAPEX
push: 11 times from 2014 level in
NER.

Thus, the "chicken neck" separating
Mainland India and NER will soon
become "golden goose neck" connecting
New Economy Region (NER) and Viksit
Bharat

12.

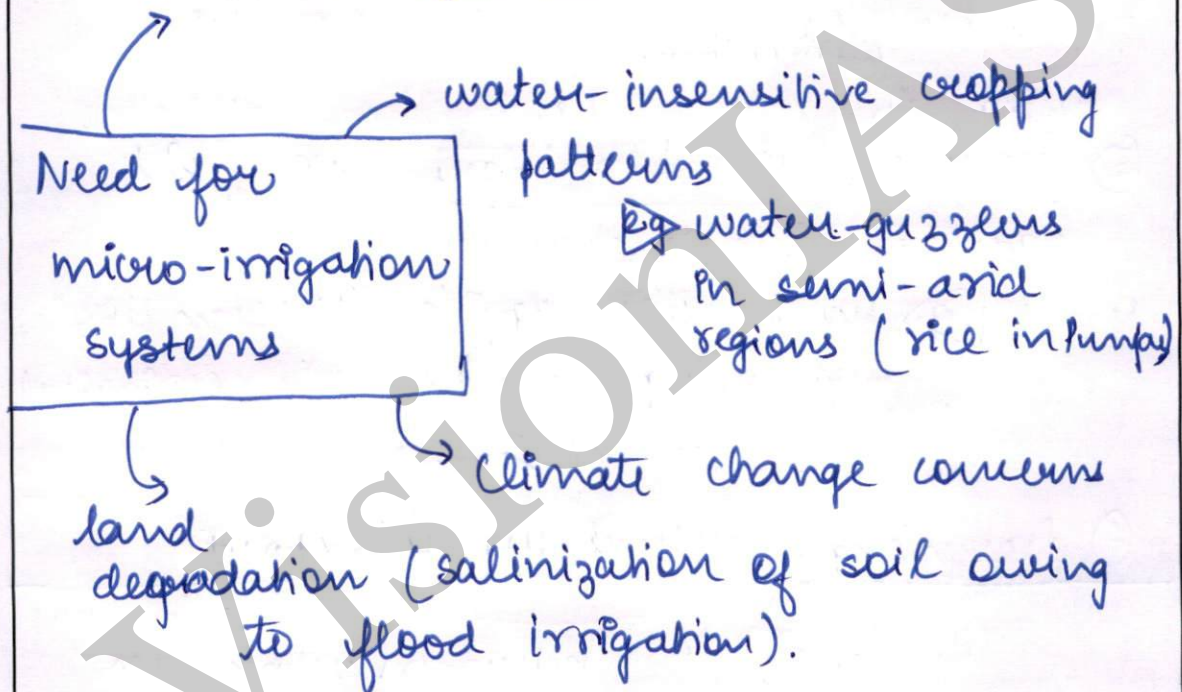
जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

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

India's downward slide to water-stress status (currently ~1700 cubic metres ^{person/} _{year}) has brought for the question of agriculture on the public debate (as ~80% of water use in agri)



Role of micro-irrigation systems

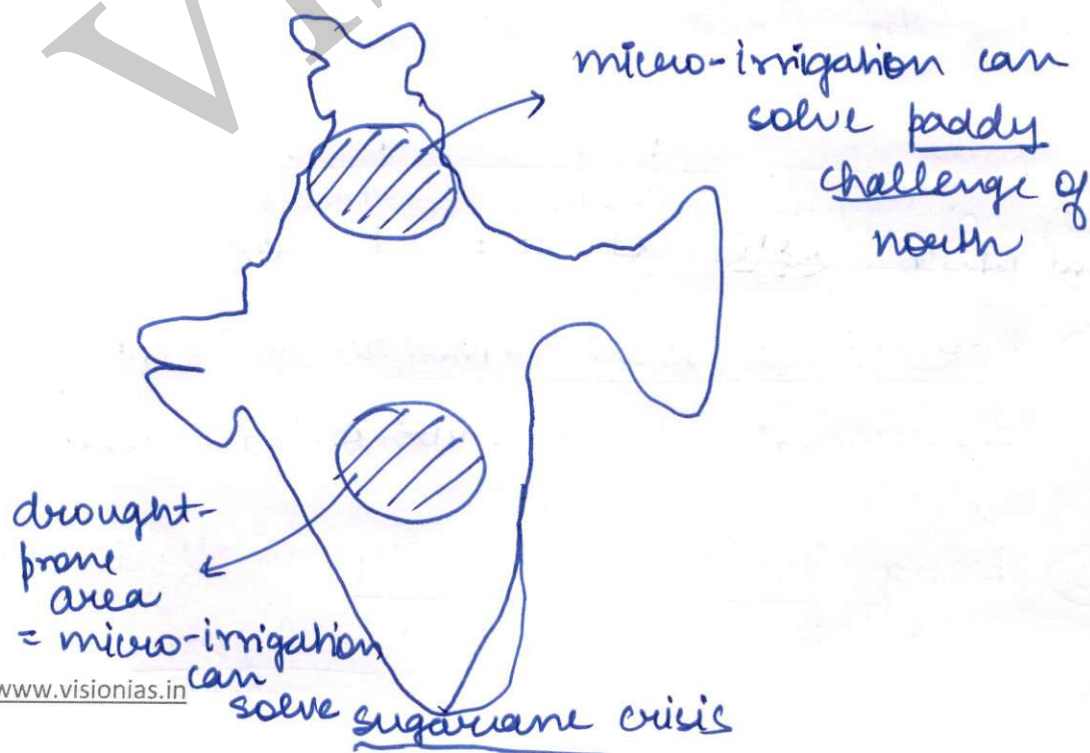
- ① Rationalize water usage where traditional practices dominate
- ② Bring water-productivity as efficiency metric in crops (Niti Aayog recommendation)

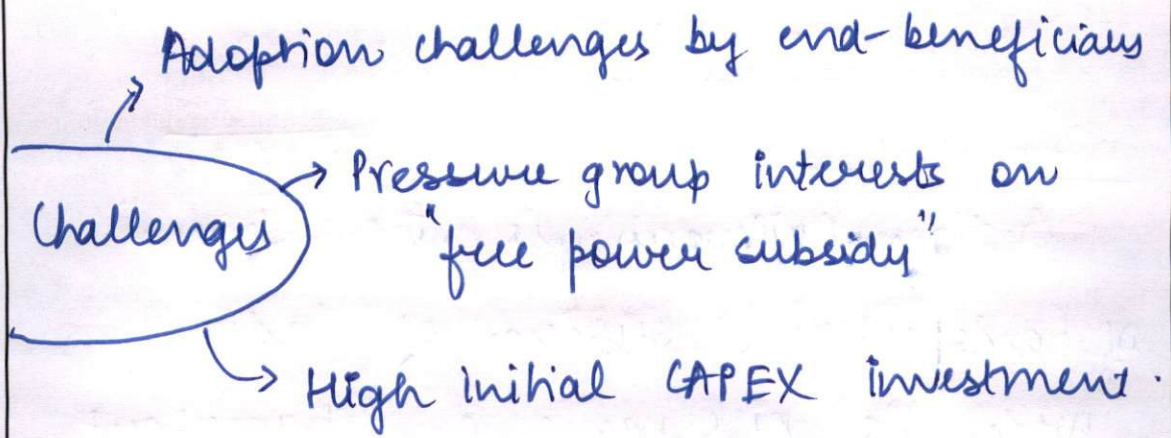
③ Promote international collaboration
on sustainable agriculture practices
eg India-UAE agri partnership
on micro-irrigation

④ Rethink on political economy
challenges of today
eg free power subsidy in Punjab
that promotes unsustainable
agriculture.

⑤ Ensure "Jam-bhagidari" in fight
against climate change
eg much like agri's "Mission LIFE"
: involving farmers in ecological
practices of farming.

⑥ Preventing "virtual water" export





However,

"Jal is Jeevan" [water is LIFE]

thus,

- NITI Aayog's suggestion of water-productive crops (not tonne metric) needs to incentivize global market)
- private player involvement in agri-sector
- use of Agri accelerator Fund (ecosystem)

thus, micro-irrigation is the need of hour. Let's start small and

↓
in areas like
Punjab-Haryana

dream
big!
(>\$50b
export
of
agri)

13.

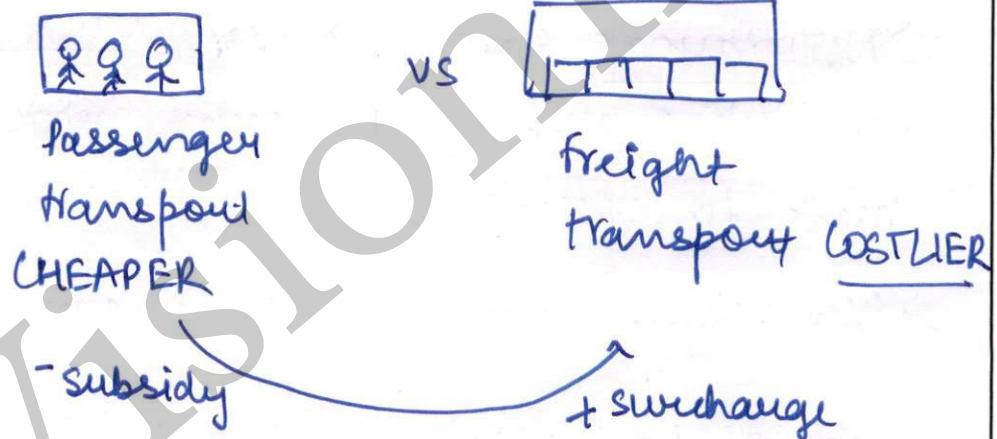
भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल ढुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Indian Railways is the "femur" of transportation system of India, with its nick-name as "transport messiah of masses".

However, the mass-character is owing to cross-subsidization of fares



Thus, Govt. intervention in railways makes for its dual character: inefficient freight transporter and efficient mass transporter.

Issues in freight transportation	Strategies to solve the problems
① Cross-subsidization	Reduced government role in subsidizing freight rates
② Govt. monopoly	Gradual privatization along "high-value" and "high-frequency" routes.
③ Not in alignment with global regulatory standards	Leveraging leaders in train logistics like <u>Germany</u> for tech-transfer
④ Inefficient port-market linkage	Realignment of routes basis market demand
⑤ Inadequate consumer awareness	Govt policy push, ~~eg~~ KISAN rail for better IEC campaigns.

Thus, multi-modal strategy in alignment with PM Gati Shakti and Logistics policy (aiming to reduce logistics cost to $\sim 8\%$ from currently $\sim 15\%$ of GDP) needs

Railway + Roadways + Airways

"whole-of-government approach" in ensuring network optimization, efficient logistics and flexible pro-market planning.

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

15

India's leadership in "global-climate-energy era" via Panchamrit and Mission Life reflects India's civilizational ethos ("sacred groves"), constitutional values (Art 48A, 51A(g)) and international commitments (Net-zero by 2070).

Thus, India's role as front-runner in global renewable energy transition is being applauded even by UN.

Factors behind India's achievements

- ① Political priority: India's commitment to climate-positive goals makes it stand out; eg Green energy pact with Denmark
- ② Domestic regulator push: mobilizing industries for regulatory compliance is a challenge, but successfully done so via schemes like Har Bhar Solar Bijli, FAME etc.

- ③ Compassionate capitalism or "Indic private sector" : innovation of CSR (2% of annual profits) in climate positive projects

eg solar energy parks outside Vantara by Reliance.

- ④ Role of "Jam-bhagidari" : Mission LIFE's ethos reciprocated by Indian masses
eg greater compliance with "give-it-up campaign".

- ⑤ Effective use of geographical diversity

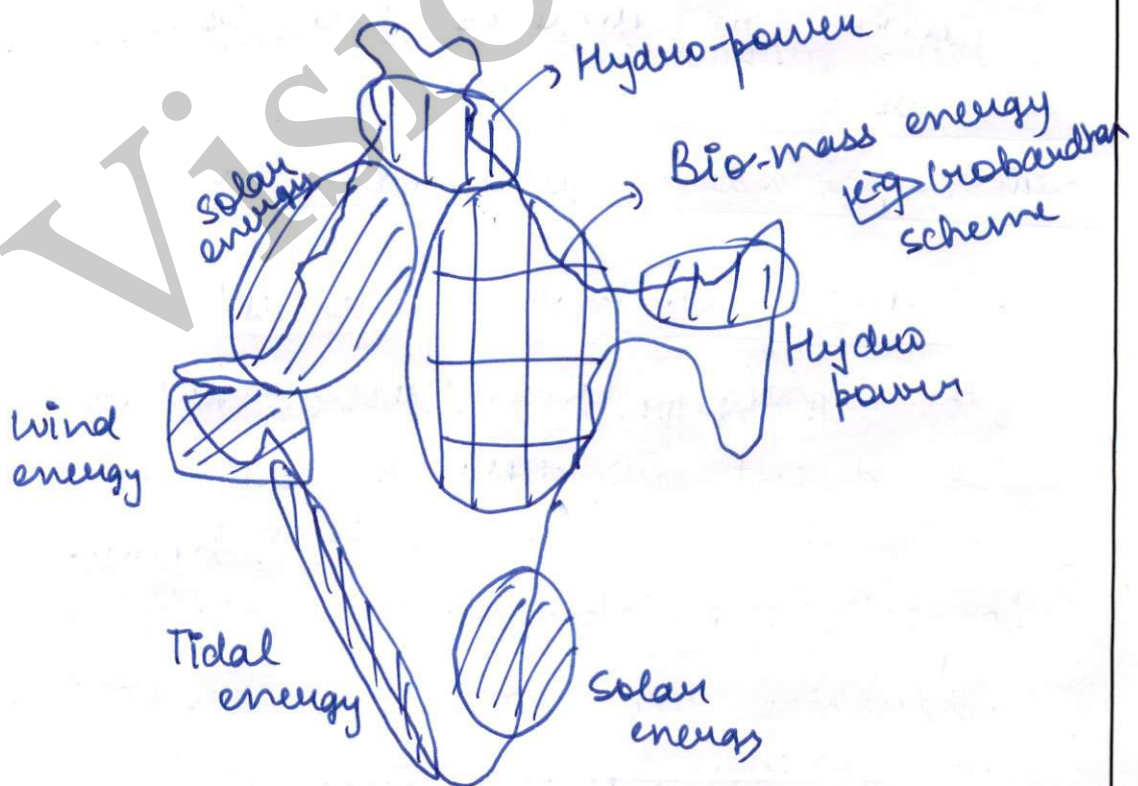
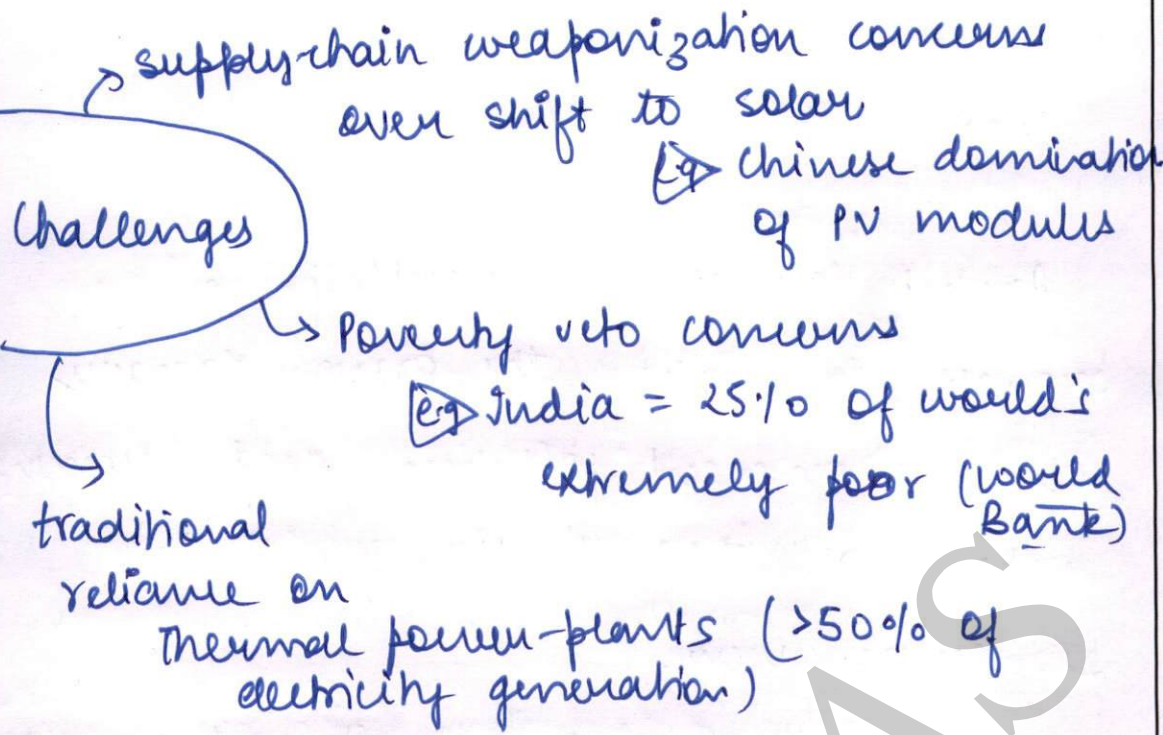


Fig : India's renewable power



Way-forward

- ① Balancing renewable commitment with constraints of \$2000 per capita GDP
- ② Contextual net-zero commitments
- ③ Tech collaboration with green economies
 ↳ G20 partnership for Railways net-zero by 2030
- ④ Climate-justice advocacy on global forum: "voice of global south"

Thus, India's renewable transition is a novel challenge of century.

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

Rachel Carson's "Silent Spring" brought to light the grave dangers of environment pollution and incoming risks to the earth from this bio-centric view.

Here role of "agricultural runoff" becomes a classic case-in-point.

① Land degradation: fertilizers seeped in the soil degrade its fertility
 eg highlighted by Vandana Shiva in "Violence of Green Revolution".

② Water pollution: increasing BOD and COD in lakes and ponds nearby owing to transfer of "water-soluble" pesticides

③ Ecological pollution: eco-system affected, involving flora and fauna.
 eg Declining biodiversity in Green Revolution areas

- ④ Vectors' pollution: role of beings that eat and bio-accumulate "run-offs" and transfer to geographically distant areas.
- ⑤ Pollution of the plate: role of packaged food industry in radiating the "run-off" in disseminating of pollution
- ⑥ Air pollution: release of vapours from (slow oxidation) run-off debris in the environment.
- ⑦ Toxic mixture: otherwise harmless chemicals when combined in right proportions become "environmentally toxic"

Measures to be taken:

- ① Legislative Impact Assessment: of existing regulations that have failed to curb this menace.
- ② Environmental Impact Assessment: strict standards for corporates involved in selling of products that lead to "run-off"

- ③ Litigerry awareness : use of "yagnik nagrik abhiyan" for effective use of agri inputs
 ↳ kisan radio and extension service
- ④ Rethink on political economy.
 ↳ Fertilizer subsidy model to be rationalized.
- ⑤ Innovative approaches like neem-coated urea that defangs agri-input run-offs.
- ⑥ Involving civil-society groups in Quality Management and Regulation compliance monitoring.

Thus, agri-"runoffs" need to run the "highway of regulation" to become agri-outputs that world needs today.

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)

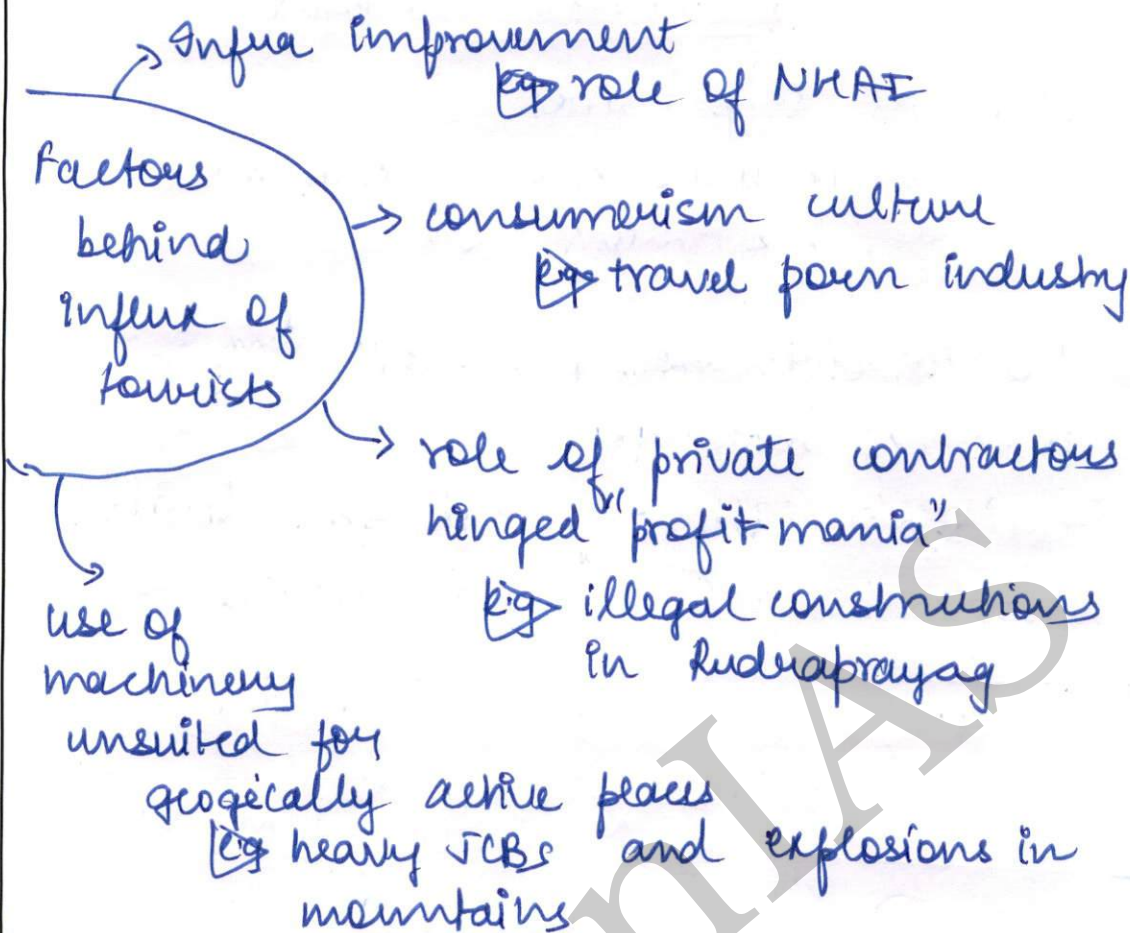
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Massification of pilgrimage in
Devbhumi and wilderness tourism
in North East has resulted in
concerns over "carrying capacity".



Fig: Himalayan region. and rising
→ disasters

The Himalayan regions were
traditionally accomodating to fewer
pilgrims, with lesser frequency of
havel, and less demands: all has⁴¹
changed.



Thus, need to revisit the entire Himalayan tourism paradigm.

Measures to be taken

- ① Political commitment as the foremost priority
eg Sharamshala declaration on "responsible tourism" in Himalayas
- ② Review of infra-push: involving expertise for EIA
eg NHAI infra push and Toshmash
curses

- ③ "Responsible Tourism" campaign
for educating tourists
eg Modelled on "Atithi Devo
Bhava campaign"

- ④ Use of civil society groups to highlight
local climate crisis

eg Wangduji's call for climate
action in Ladakh.

- ⑤ Locals-led development paradigm,
instead of top-down push

- ⑥ Eco-sensitive policy planning

- ⑦ International collaboration for
capacity augmentation

eg Gyelephu city project of Bhutan

Thus, Himalayas are giving a
cry-of-help

"Prakriti Rakshita Rakshatah"

[Earth protects those who protect her],

thus time to realize our identity
as "witness" of earth, not a "consumer"
of its natural beauty.

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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Superconductor materials, also called "materials of the future" offer least resistance and maximum conductance. Unique property of today's material science.

Role of superconductors in multi-paradigm innovation

① Defense Industry

- role in building 5th gen aircrafts with stealth tech
 ↳ J-20 of China uses super-conducting material.
- use in hypersonic missile
 ↳ Russia's Kinzhal uses it too.

② Medical Science

- Field of robotic surgery offers great use of superconductors
 ↳ electro-cardiograms that transmit electrical signals

③ Public utilities

- use of super conductors in internet transmission
- use of superconductors can prevent distribution losses in power sector

④ Gadget industry : revolution for IR4.0

- new models of smartphones and paraphernalia
- data transmission offers greatest innovation.

⑤ Agriculture and rural transformation

- can fuel agri-tech startups

⑥ Nanotech revolution

- can help realize Hume's "plenty of room at the bottom"
- Nanoprinters linked with superconductors

⑦ Advanced vehicles

- Boost to electric vehicle industry
- Tesla's R&D in superconductors

⑧ Advanced manufacturing

→ Superconductors offers leap from
↳ printing and block manufacturing
methods

Thus, superconductors have a
revolutionary potential - spanning
nearly all fields of science.

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। सविस्तर वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

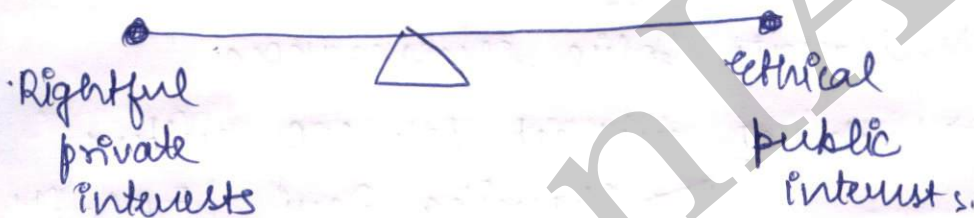
While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words)

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

15

With India's and South Africa's push for IPR waiver on covid-19 vaccine, the issue of IPR commercialization has come to fore.

Challenge of balancing



Various types of IPR in India

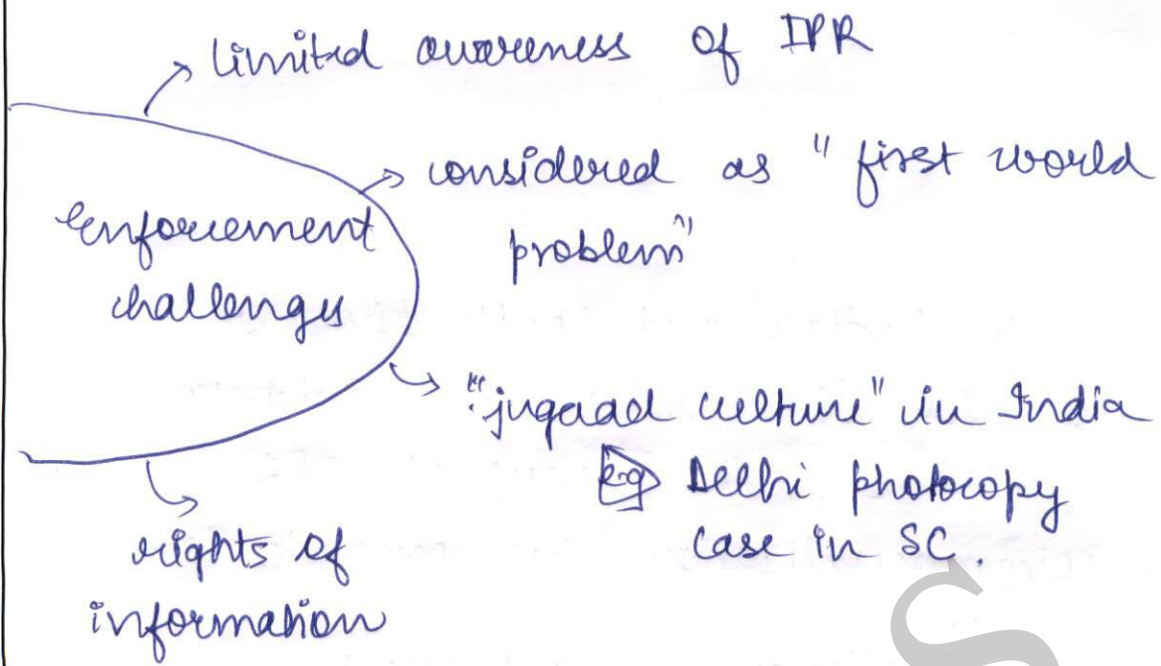
→ Trademarks (eg GI tag) Act

→ Copyrights Act

→ Patents Act

→ Intellectual property rights, Act

However, some fundamental challenges persist:



Moreover,

- inadequate police sensitization
- Lack of respect for IPR culture
 - eg Shamika Rani (EAC-PM council) case

Regulatory challenges

- ① Wide geography: difficult to regulate entire country in one law that suits everyone
- ② Black sheeps can be other-states too
 - eg Pak's banmahi copied from PISA variety: stiff competition in west europe

Administrative challenges

① Respect for tribal traditional knowledge
not respect
eg) ethical concerns in administration

② MNC vs farmers becomes an administrative dilemma
eg) Monsanto potato case, lays.
in Gujarat

Way forward

✓ Tribal knowledge institutionalization (TKDL)

✓ pro-active legal reforms
(changes in copyrights act)

✓ civil society awareness campaign

= India as leader of IPR regime
in 21st century

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

Late CDS Bipan Rawat ji's Innovation
of Theatre commands set-reforms
in motion for the Indian defense
co-system.

However, progress is yet to
be seen, because of following reasons:

- ① Coordination issues among the three services
- ② concerns of lack of parity among chiefs of three arms
- ③ Parochial view, that's service-centred and not defense-of-country approach
- ④ Inadequate confidence building measures
- ⑤ Questions over effectiveness of suggested reforms.
→ afterall 1971 was won despite integrated theatre commands

Benefits of Theaterization of commands

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

Greater Integration

→ Cohesive strategy

→ Alignment on mission goals



Not separate strategies of Army ("cold start"), Airforce ("massive retaliation") $\Leftrightarrow$ Integrated theatre that tackles Pak threat

Thus, greater integration ensures comprehensive national power (not service's own power, at the expense of another service)

eg conflict between service's objectives during 1962 China war

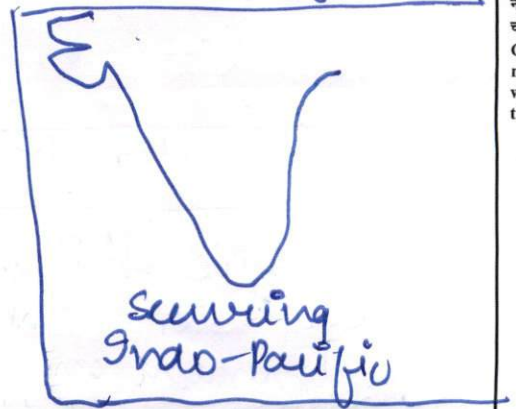
→ It also helps deal with threat of "greyzone warfare" effectively

Rationalization of manpower

① Alignment of "target" over number of troops-

eg Ladakh crisis could be managed with lesser mobilization of manpower as is done today.

- ② effective collaboration - and use of each other's manpower (Coast Guard, naval wing) of Army, Navy, Naval wing of Airforce.



Rationalization of Resources

- ① effective use of IAF's C-130J for re-fuelling army's tanks -
 ② use of MiG-29K of Indian Navy with MiG29 of Airforce as well.

Thus, clear priorities

+ Assigned Responsibilities
 + Visionary strategy

= Integrated Theatre Command.

Way forward] : start small, dream big

↓
 One battalion and unit at a time; followed by effectiveness evaluation

↓
 Bipan Rawat's dream of entire integrated theatre command

20.

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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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China's border strategy of 'dual-use villages' has brought focus on them as cornerstone of border security strategy.

Border-villages as FIRST villages

→ first line of defense

Geographically → counter-attack strategy

→ Logistics impedence to invading troops

Prevents "delivery deficit" grievance

Kautilyan strategy of preventing "Vibhishans"

Facility-wise

Inclusive development model

Soft-power lever

Thus, border villages have significance beyond immediate security concerns too.

उम्मीदवारों को इस कश्चि में नहीं लिखना चाहिए
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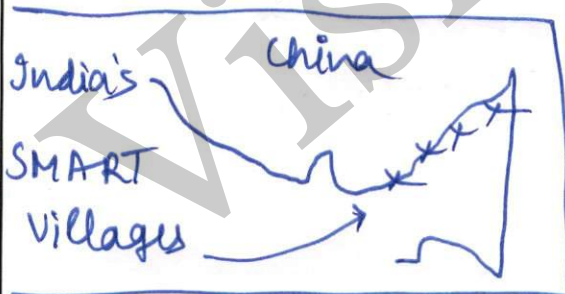


India's border villages (vs POK's)

can help instigate internal instability in enemy territory
eg POK riots over maladministration

better equipped = breaks Pak's "hybrid warfare" strategy of neglect of Kashmir
better administered

Likewise,



→ breaks "Chinese cartographic aggression technique" via salami-slicing

→ disguised force for counterattack
eg role in aletching ~~invasions~~ incursions during recent clashes in eastern sector.

Measures taken by govt)

- ① "SMART" village programme
- ② Greater integration of army personnel in civic society of villages: confidence building measures
- ③ Infra push: hinterland connectivity with National Highways
eg Parvati Mala and Bharati Mala.
- ④ Border trust initiative along Bangladesh border: building trust among communities

Thus, Border Villages are keystone of nation's security strategy, with both hard and soft power elements

SPACE FOR ROUGH WORK

VisionIAS