



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. : 1278500

अभ्यर्थी का नाम/Name of Student : C. Shiva Ganesh Reddy

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

25/08/2024

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

केंद्र
Centre

Bhai Joga Singh

निरीक्षक के हस्ताक्षर
Invigilator's Signature

[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
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

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

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



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**

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

"Food processing industry" refers to the value addition to raw materials of food and making them edible directly. It is called as 'sunrise sector' and growing @ CAGR of 12.5%.

However it is leading to food safety challenges

2) Lack of 'credible certification mechanism' or the ling of 'FSSAI'

↳ NO backward and forward integration means 'highly informal sector' less safe for safety.

3) NO 'central law' / state law regarding the safety of food 'FPI'

4) Poor citizen awareness

5) Trickings to adulteration practices

(eg) Apple honey adulteration

6) No intense competition among various players to ensure food safety practices

Plan we need measures like

1) Certification mechanism like '3rd party' certification.

2) Investments by 'agri-startups' to ensure proper compliance mechanism

3) 'Central law' & respective state laws to ensure food safety

4) Backward and forward integration

1) cold-storage - infrastructure measures

under 'PM-Kausthakti' & connect through FPO hubs to "all markets & cooper."

S. Korea has / Vietnam has significant value addition around "10-20%" while india it is only 1-2%. We need make most of it.

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)

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

NFSA, 2013, ensured the creation of PDS to make sure food availability and accessibility is ensured to every Indians.

PDS ⇒ FPS evolution process

FPS are government managed shops where grains are sold at "subsidised prices".
Hence they are evolving from time to time

Godowns → with "PAC" covers

↓
proper infra structure → Robb Buildings & manpowers

↓
Multiple resources ⇒ like besone, dal, ~~etc~~ sugas etc

↓
Digitisation → KYC linkage, and Bio-metric authentication

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

One-nation and one ration ⇒ increase 'portability' and accessibility.

↓
any ration card holder across Indian can access these benefits.

Ruher need of transformation

1) more transparent ⇒ CCTV, online management information systems (MIS)

2) "GIS" tracking of vehicles

3) Regular audit and safety inspections

'Shakti Kumar Committee' reports must

be followed to ensure "FPS" function to the needs of the society.

3.

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

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

• 10

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

Lack of farm mechanisation and forward and backward linkages has always been a perennial problem for farmers in India.

But agri-tech startups can help in

(i) Farm productivity

→ Precision farming tools: such as on-time arrival of monsoon, crop selection, soil testing will enhance the productivity.

2) Increased efficiency in fertilizers like 'Nano-Urea', phosphate reduce input cost

3) New farming methods like soil-mulching, drone usage, flow farming will enhance productivity as well.

(ii) Market Access

1) Contract farming: will lead to more inputs like quality seeds, fertilizers & reduce need of high input cost \Rightarrow "Backward linkage"

2) Technology driven 'forward linkages' such as \Rightarrow "farm \rightarrow fork" model of e-commerce platforms

3) Connect with "BIS corporates" to ensure proper supply chain.

So, we have to ensure that "Agri-startups" in India will lead to more productivity & market access and increase farmer income
(Ashok Gulwari)

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

Digitization of land records means using "GIS tools" and done by 'land map' and given them the right to ~~the~~ ownership

Helps in effective implementation of land records:

- 1) clear ownership rights with no duplicity
- 2) Reduce land litigation between farmers.
- 3) ensures "Ease-of claims" business due to digital land rights

4) "Ease of service delivery" → due to interoperability of data among various departments.

5) can raise the "transparency" in decision making.

There are some ineffective things as well

- 1) Improper use of 'drones' for land right recognition
- 2) Lack of training among officials. to update digital records
- 3) Unified national portal is needed.
- 4) Time consuming process.

↓
PM - SWAMITVA can address all those

challenges without much effort, and hence is a significant step towards enhancing farmers income

5.

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

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

10

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

With 60% population below 59 years of age (UNPPA), and lesser dependency ratios, India is at cusp of demographic dividend.

However growth has to come from manufacturing led growth model:

- 1) abiosp excess employment: due to hishor 'employment elasticity' of manufacturing
- 2) Highly skilled service sector has less job-intensivity with "(3) workforce"
- 3) agricultural sector is already over-Burdened with "46% workforce"
- 4) more scope for job-intensive sectors like

→ "Textile" manufacturing.

→ apparel manufacturing

But all isn't well with manufacturing

- 1) ~~less~~ Need for more funding
- 2) Lack of "skilled professionals" (China has it)
- 3) Technology needs automation.

Measures
needed

- National Semiconductors Mission
- PM-Suryamitra = provide green jobs
- SHG-Panchayat linkage for "Biotech generation"
- Urban ~~MA~~ MNREGA

Hence, we need more decentralized approach to manufacturing-led growth model to ensure its demographic dividend

is ~~needed~~ fully
repeated

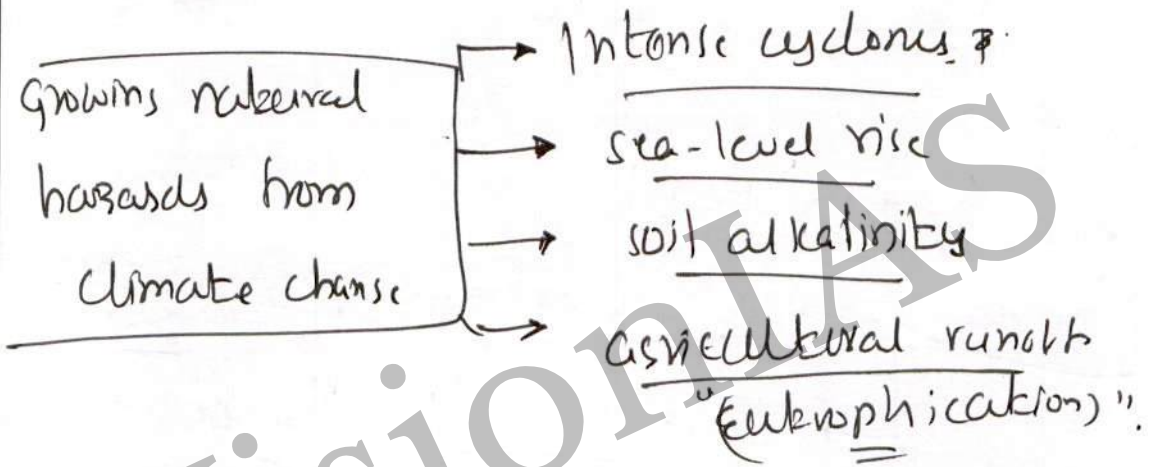
6.

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)

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

With 7,500 km of long Border, India stands at 7th in climate risk Index. Necessitates the need for coastal resilience



Strengthening Indian coastal communities

- 1) mangrove habitat restoration with double benefit of local populace livelihood needs
 - a) MISHTI scheme
- 2) coastal wetlands restoration
 - a) Amrit Nisahas.

3) Saline embankments : to reduce the intensity
of cyclone & other winds

4) Giving focus to 'coast-reefs' which reduces
'Wave current intensity' (a) 'Coast reef
initiative'

5) Disaster management skills ⇒ to ensure
proper rehabilitate & recovery methods

6) Sustainable fishing methods (a) Avoiding
'Boat brawling' ⇒ PM-Matsya Sampada
Mission

7) Community credit support ⇒ PM-KISAN
extended to coastal communities as
well

Hence, we need cooperation of 'coastal
guards' and international demarcation of
Border lines ('katchatheevu island') to ensure
resilience in coastal communities.

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)

'Green credit programme' is an initiative to fund and finance environmentally sustainable projects with long term impact.

It extends beyond carbon management

- 1) incorporates carbon mitigation as well as adaptation mechanisms
- 2) include energy efficiency in buildings across India.
- 3) Encourage sustainable solutions like
↳ Animal rescue centre at Jamnagar,
"VANTARA".
- 4) sustainable recycling of products.

5) Proper solid waste management solutions

19) Phytosolid technology in Tirupati.

Various concerns in implementation.

- 1) No classification of projects based on impact parameters
- 2) mounting debt/cap ration, means low funds available at disposal.
- 3) Less funding from 'developed nations' through climate financing (Climate Bank/financing)
- 4) Lack of technology and necessary skilling

Additional measures

- enlarge scope of its credit
- ensure private participation "(PPP)"
- supported by 'World Bank'

To achieve 'Pancham's goals' we need to make sure that these measures are implemented at scale

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)

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

NavIC refers through "Navigation through Indian constellation"; developed by ISRO.
With 8 satellite constellation systems,
with 3 in geo-stationary and 5 in geo-synchronous orbits.

Need of Navic when GPS already available

1) main in India / indigenous technology will ensure 'strategic autonomy'

2) flexibility to 'local needs' and geographic terrains of India

3) functions upto 1500km into the Border.

4) weather warnings systems → which will

Wash local ships, through "Blue Mappings" technology if any hazard will happen.

5) "Daily weather updates" to local populace which "GIS" is incapable of.

6) Not prone to "cyber threats" and data theft from China/USA

7) "Data localisation" is possible and we can enhance "inter-operability" in the services.

8) Helps army personnel and Navy, Coast Guard in disaster management for rapid deployment of "NDRF" @ cyclones.

Hence Navic has a much bigger role in demonstration of indigenous manufacturing capability.

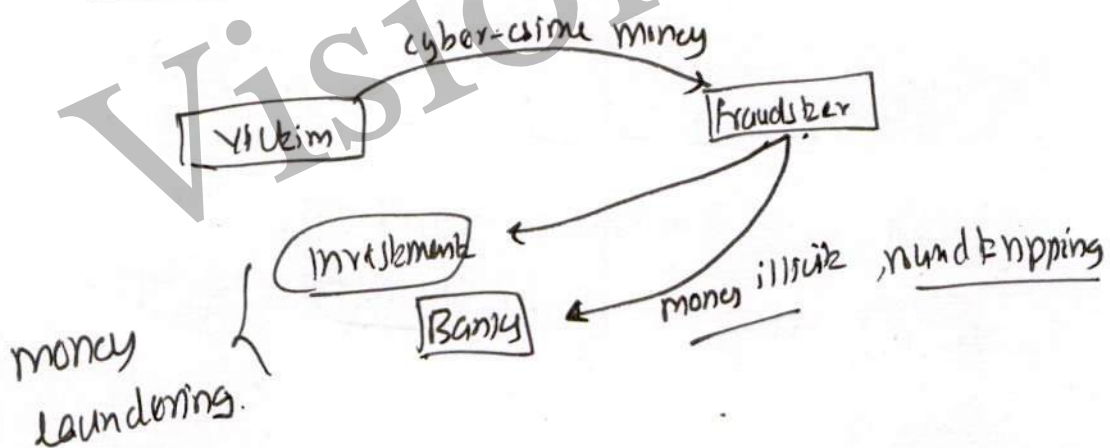
9. साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)
- Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words)

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

CERT-NO data says that 1 out of every 3 child is prone to cyber crime, & women are also more prone to cyber financial crime

But it emerged as new frontier of global money laundering.

1) "placins" illicit money into system.



es) Randomware aka bankou like (Nokpekye) uses money to finance other crimes. or invests white money leading to money laundering.

Addressing the issue by government

- 1) Deploy 'AI-Digital' surveillance models to point & detect the 'patterns' which humans can't do
- 2) 'Interoperability' between ministries like MOEITY + MOFINANCE + Ministry of S&T for technology sharing.
- 3) ~~to~~ 'Zero-trust models' must be build to make systems cyber-proof
- 4) Technology sharing from Israel, USA and other countries to enhance "domestic capability".
- 5) CERT-IN, ~~must~~ & Kerala's 'Cyber Game' project, must be evolved into
 - a) awareness → cyber (telangana), & she teams.At the front IR, battling cyber crimes is the biggest challenge for govt

10.

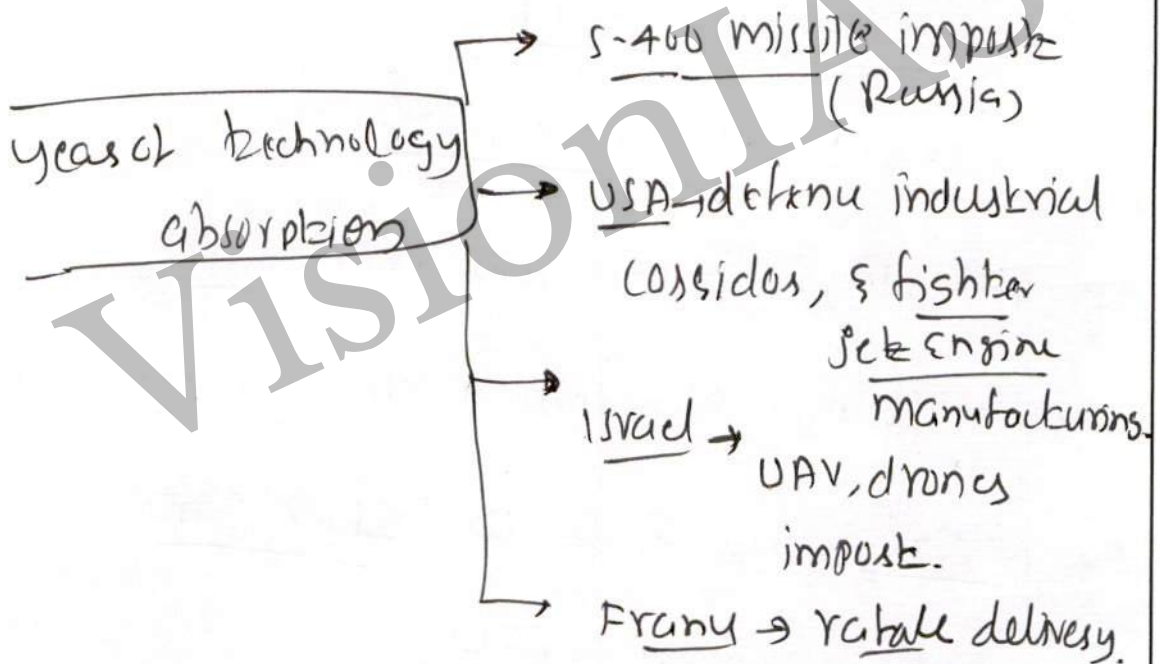
इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्र में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

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)

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

10

With army modernisation schemes and defence capital acquisition programme working at full speed, technology absorption is happening at rapid scale.



Need for technology absorption

1) secure 'safe & peaceful' territorial

integrity 2) china's ICBM at borders.

need defence

- 2) geopolitical: main-India will ensure the
'strategic autonomy' of decision making.
- 3) enhanced defence production world wide
(SIPRI data - India 2nd largest importer)
- 4) Defence export hub → Vietnam Brahmos
missile deal.

Challenges India faces

- 1) Lack of autonomy and robust functions to
"DRDO" = with red tapism
- 2) Lack of defence manufacturing consideration
India
- 3) De-globalisation tendencies ⇒ reduce the
scope for technology transfer.

Hence, with ICET agreement with USA,
and Russian agreement, along with France
must be implemented to achieve real
'technology absorption'.

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

15

NER of India constitutes the ethnic states which are tribal hill autonomous areas with significant backwardness

There are many challenges faced in the development of trade & industries:

⊛ structural challenges

1) historical neglect due to

"Bengal regulation act under Britishers"

2) No proper infrastructure and connectivity

3) geographically very difficult topography

to build roads and railways

4) More prone to "disasters" (e.g.) Brahmaputra floods.



* Functional Challenges

- 1) Ethnic clashes among various groups will reduce the investor confidence / manipulation crisis
- 2) Nearness to Borders such as Bangladesh and 'Myanmar' lead to retarded income which hampers 'fair labour practices'
- 3) The federal issues between states and centre is often under tension.

Measures that have been taken

- 1) Connectivity → Trilateral highway of India, 'Myanmar' and Thailand
- 2) Japan - 'Overseas Development Assistance' scheme to invest in energy
- 3) Energy investment → for coal and Natural gas in Arunachal Pradesh.

However there are infringements

→ No 'social cohesion'

→ Naxaland demands for 'Naxalism'

→ Border clashes b/w states (eg) Assam
Brahmaputra.

measures
needed

→ multi-modal connectivity

↳ Inland waterways like I
Ganga → Brahmaputra

→ Pagvankar, ropeway connectivity
infrastructure

→ international cooperation like
Kolkata - Sitabwarpore - Imphal
connectivity

WE has the significant potential to
become the growth engine of the country

Hence it must not be neglected in the

dream of '\$ 5 trillion economy'!

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

IPCC report says, we are already on the verge of breaching the 1.5°C limit. And NITI aayog commi says 60% cities and 50 lakhs population face water stress levels.

In this background micro-irrigation system can contribute to sustainable as practices

micro-irrigation → regular and timely application of water that is needed rather than floods the field.

1) Increases water efficiency by 30%. where present crops like rice, wheat are water intensive.

2) Reduce "soil alkalinity", because seepage of

water is decreased into ground.

3) Reduced 'ground water intake' of recharge will cause reduced 'water pollution'

4) Important for semi-acid and acid crops like millet for proper productivity

5) Different 'micro-irrigation systems'

↳ Drip irrigation system

↳ Root irrigation

↳ Sprinkler method

6) Reduces the farmers electricity Bill as well, due to less water pumps.

7) Renewable energy push through "soles pumps.

8) Integrating technology becomes easier with micro-irrigation.

Some good practices and case-studies

- 1) Israel's 'micro-irrigation' is best \Rightarrow with
UP govt making an agreement with the
Israel govt for technology transfer.
- 2) UAE's: water efficiency system transfer
under ~~comprehensive~~ comprehensive agreement.
- 3) 'millets' = like ragi, Bajra, Jowar must be
enhanced by reduced water intensive
crops.
- 4) 'MSP' which is skewed must be made more
profitable for millet products.

With India Being the most populous
nation and food pressure due to increase,
we need more robust 'micro-irrigation
schemes across India.

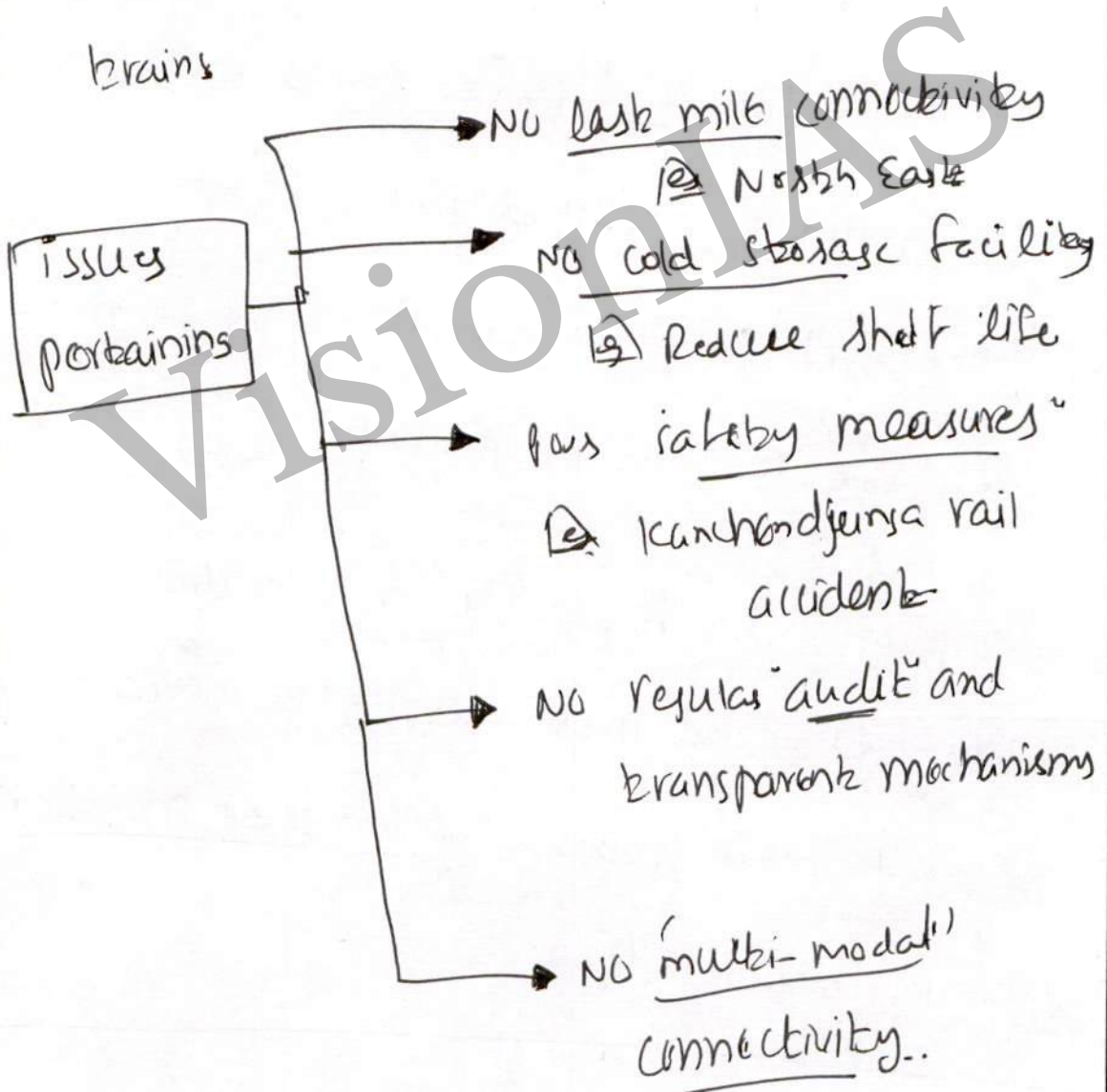
13.

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

Indian railways is the 4th largest in the world in terms of 'operational length' and density of lanes.' Freight transportation is the movement of goods and services through trains



strategies that can be adopted

(i) Structural

1) 'PM-Gati Shakti Yojana' to increase the multi-modal logistics hub connectivity

2) 'National - Logistics Policy' for clear guidelines and interoperability among states

3) 'Railway Safety Commissioner' must have more powers

→ 'PM-KISAN' rail scheme to connect important states and manufacturing hubs.

(ii) Functional

1) Proper rest for train 'loco pilots' to ensure safety

2) Increase 'cold-storage' facilities through "ppp-mode"

3) local manufacturing of railways tracks and
corridors.

उम्मीदवारों को
इस हार्जिफ में
नहीं लिखना
चाहिए
Candidates
must not
write in
this margin

Best
practices

→ China's multi-modal connectivity
must be ~~extra~~ looked into.
by India

→ Russia's connectivity is also
well integrated across
fast east (siberia).

To achieve developed nation status,
Indian railways play a significant role
to ensure well-knit "integration" and
connectivity

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

Renewable energy sector constitutes solar, wind, geo-thermal, and hydropower projects.

- Impressive strides in Renewable energy
- Meritum share to "23%" of total power production
 - already achieved "emission intensity" NDC targets of 3 Billion tonnes / GPP by 2024
 - solar addition more than double to around "60 GW"
 - Coal gas and "Bio-fuel" generation also has 1% contribution.
 - ~~Power~~ Nuclear sector is "27" overall

Reasons

(i) International

a) Paris agreement goal of "NDC" to achieve significant net renewable energy share

b) COP26 India's Panchamrit plans

↳ Reduce emission intensity

by 45%

↳ Net zero by 2070

↳ Increase renewable energy share by

50% by 2030.

(ii) National

a) Climate adaptation and mitigation based developments through

↳ NDMA, guidelines

b) Institutions → Central electricity authority
↳ solar corporation
National (PSU)

c) National wind policy

(b) Solar policies → "सुर्या मित्र"
 → "National solar mission"
 → PM-KUSUM

(c) "National hydrogen mission" → to increase share of green hydrogen, will decrease emission intensity by 30 Billion tonnes 2070

Bottlenecks → Lack of local manufacturers of solar power, "wind turbines"
 → Need of "state laws" in line with national targets

Solutions → Mission LIFE, to reduce power usage.
 → Panchamrik goals "updatation".

India with "2035" in climate vulnerability index, need significant investment in renewables while phasing down coal

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

15.

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

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

15

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

Ever since the dawn of "Green Revolution" since 1960s, the rampant usage of fertilizers and pesticides is on rise in India. Leading to significant agricultural runoff combined with flood irrigation.

Agr runoff \Rightarrow environmental pollution

1) water pollution: By N₂O chemicals which raises COD and BOD levels in the water

2) increases "algal bloom" through "eutrophication."

3) will cause death of fish and other 'Benthic organisms' due to lack of "O₂"

4) Will cause 'sedimentation' and will exacerbate the process of soil desulfurification of which 70% of India prone to (UNICEF).

5) ~~Soil~~ coastal pollution ⇒ causes "coral-Bleaching" due to excessive sedimentation.

6) Affects 'mangroves' which acts as 'waves recycling' plants for river run-off.

Measures to be taken

1) National mission on organic ^{farming.} fertilizers → Paramparagat Krishi Vikas Yojana expansion

2) Integrated farming practices to reduce soil alkalinity

3) zero-Budget "natural farming" to raise the level of soil nutrition

4) government must supply certified

organic fertilizers through Farmers centres

5) connect "Industry → farmers" for better technology transfer

6) "National surveillance on pesticides" through

(AI) will surely increase the efficiency

↑ pesticide agr applications ⇒ "Precision farming"

Best practices → "Agro-forestry" along canary rivers led to reduced runoff and higher income.

→ "fixation" → the "organic states" with very less runoff.

With agriculture threatened by the ever-evolving climate change. We need to make agriculture more climate resilient and environmental friendly.

16.

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

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

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

15

(ECC)
Ecological carrying capacity is the maximum capacity of the 'natural ecology' system which can recycle the needs of the biotic living organisms.

eg → Grows tourism through 'Charidam' yatra in Uttarakhand, has breached its ECC.

It has led to significant man-made disasters

1) 'Landslides' due to development projects

eg Wayand district

2) 'Glacial lake outburst flood'

with increase vulnerability eg Himachal Pradesh

3) Flash floods: due to valley occupation by citizens and people

↳ Uttarakhand 2018.

4) Water-scarcity in Himalayan regions is exacerbated due to a faster water runoff.

↳ Land subsidence ↳ Jharkhand

Measures for mitigation & sustainable tourism

1) Land slope stabilization methods like

"vegetative system" in Kerala railways

2) more sustainable solid-waste management practices ↳ India

3) reduce illegal quarrying, mining in the ecological sensitive areas

↳ Kerala's silverline project

4) Natural hazard mapping for ↳ landslides
↳ floods

6) Eco-tourism principles → recyclable bags
→ avoid plastics

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

7) Government measures such as

"Charhnam" towards sustainability
criteria of "5-3m" road width as per

(5) swidtlings

Committees

→ Madhav Gadgil → avoid
development in
eco-sensitive
areas.

→ Kasturirangan Committee on
Eco-tourism principles.

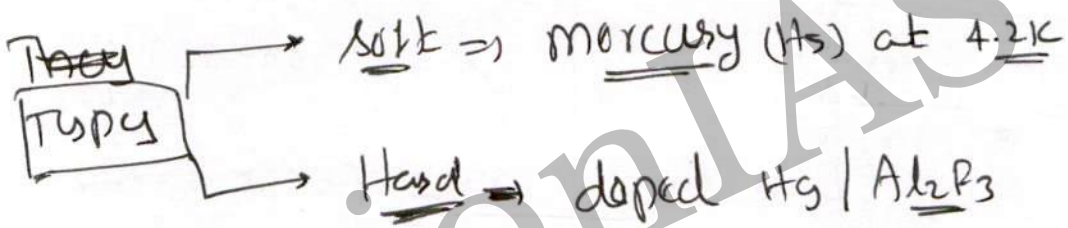
While it is imperative to boost tourism
due to jobs, we need sustainable eco-tourism
principles to ensure "EC" of pristine
eco-system is not Breached

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
 Candidates must not write on this margin

Superconductors ^{SC} are special type of material which offer "zero-resistivity" and perfectly repel off magnetic field inside (Meissner effect) at low temperatures.



Fuel innovation in science and technology

1) Will transform the "magnetic levitations" brains" more affordable \Rightarrow Bullet train underground of Tesla

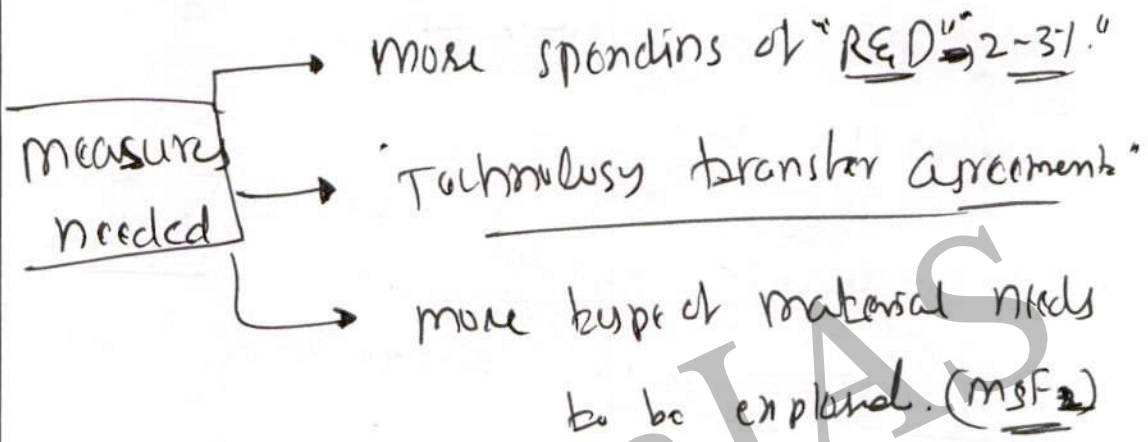
2) Will create breakthrough to sustain that 'SC' state at higher temperatures

Which are hard to produce

- 3) 'wattless and idle currents' can be transformed through guides without power losses due to resistance
- 4) Will spur the 'semi-conductors' industry as well.
- 5) (SC) are used in the study of 'thermodynamic state' at low temperature.
- 6) Variation of viscosity, specific heat of matter and 'entropy' is a new domain at low temperature, particularly for (SC).
- 7) Scope for 'Dopins' (adding impurity to increase the functional property of the super-conductors).

8) shipment hubs and posts: use electro-magnets

for container shipment, if Si are used, we
save lot of electricity supply through
wireless current.



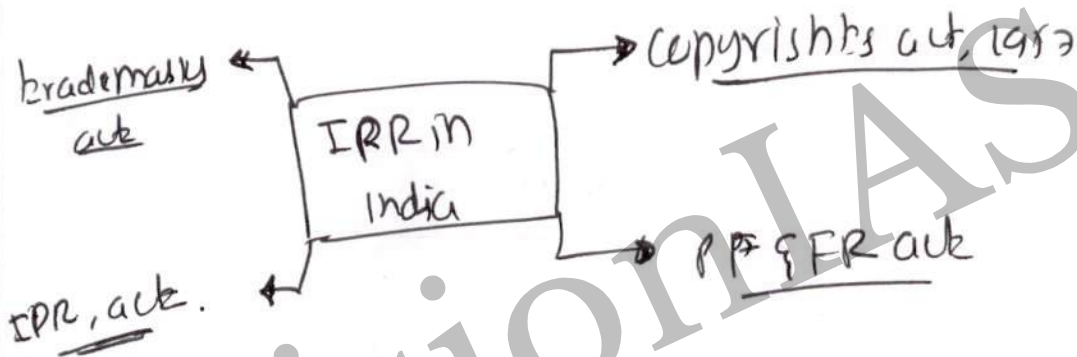
Due to significant impact and scope
for innovation, the field of super-conductor
in "solid-state physics" is gaining the
traction

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 व्यावसायिकरण 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

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

IPRs are the ownership rights of an innovation, creation, etc., as the real & authentic owner.



But numerous challenges hamper commercialisation?

(a) **Enforcement**

1) "Delay in granting" IPR's. In India it takes around 6-month to grant IPR

2) Duplication of research projects is an issue.

3) NO central ombudsman agency to cover all IPRES

(b) Regulatory

1) NO penal mechanisms / body to oversee the smobkh IPR regions

2) NO central laws to deal with it

3) corruption norms

(c) administrative challenges

1) Bureaucratic apathy: frondant delays in grants IPR

2) college administration paternalism towards some students

3) NO regional benches to grant IPR

We need methods like

- 1) Increase "R&D" spending to increase the IPR standards in India.
- 2) Learn from other countries like US, China, J. Korea which has robust IPR regime in the world.
- 3) Seek "WIPO" guidelines in framing comprehensive laws.
- 4) More autonomy to educational institutions in granting IPR.

To become a manufacturing & make-in India hub, strong academia-industry collaboration is paramount. In that scenario IPR plays a critical role.

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

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

(ITC)
'Integrated theatre commands' roles

to the 'Unified tri-service' for a particular zone based on the geographic needs the place.

Challenges of the ITC

↳ Lack of unified & "inter-operability" of resources

↳ Need for legal reforms to ensure that tri-services

function cohesively

↳ Lack of "unified brainings methods" that will make it less combat ready.

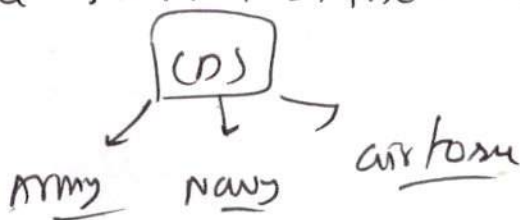


↳ varied geographical characteristics of India.

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

How ITC leads to greater manpower rationalisation

1) 'Single Command under' "CDS" (Chief of Defence Staff) ⇒ increases 'responsiveness'



⇒ efficient logistics due to interoperability of resources such as helicopters of air force by army in disaster relief.

3) 'More efficient operations' particularly

cross border terrorism

↳ Assam rifles was inducted into 'ITC' counter terrorism operation.

4) More 'accountability' due to single command for a region.

But there are some functional issues as mentioned ~~above~~, such as:

- 1) duplication of efforts.
- 2) Reducing the "accountability" among army and navy chief.
- 3) Scope of centralization tendency & no scope for decentralization.

Along with Integrated Theaterisation, we need more flexibility in "decision making" and inter-service coordination.

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)

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

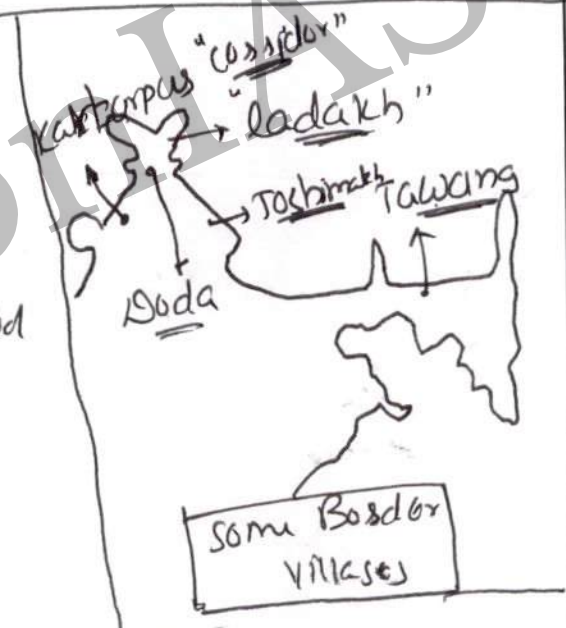
15

Border villages play a significant role towards ensuring "territorial integrity" and also ensure geographical continuity.

Border village facilities enhance Border security

1) National troops will move effortlessly through well developed roads

eg) Atal tunnel.



2) local intelligence

gathering for infiltration & safe hiding

places

eg) Soda in Jammu & Kashmir.

3) Acts at first line of defence against infiltrations

4) "helps knops" during disaster management.

5) Identify enemy nations targets from Border villages le chushul

6) supplies food, water and basic aid during operational raids for soldiers.

Measures taken by the government

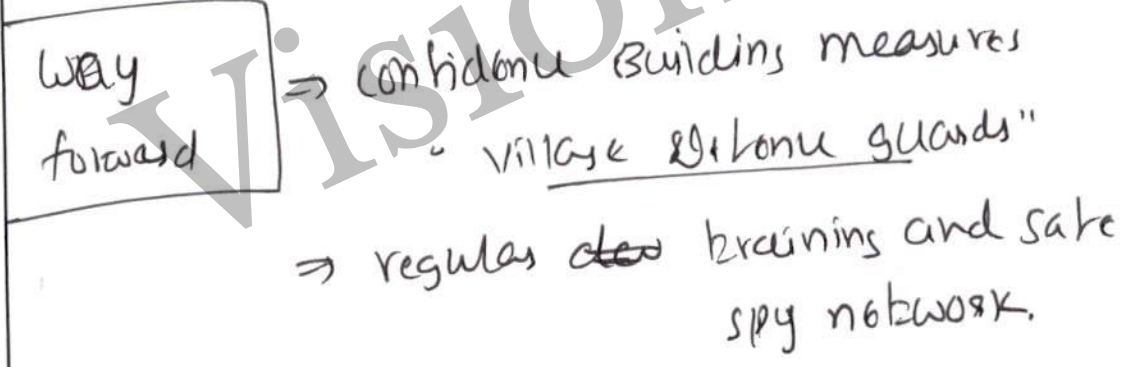
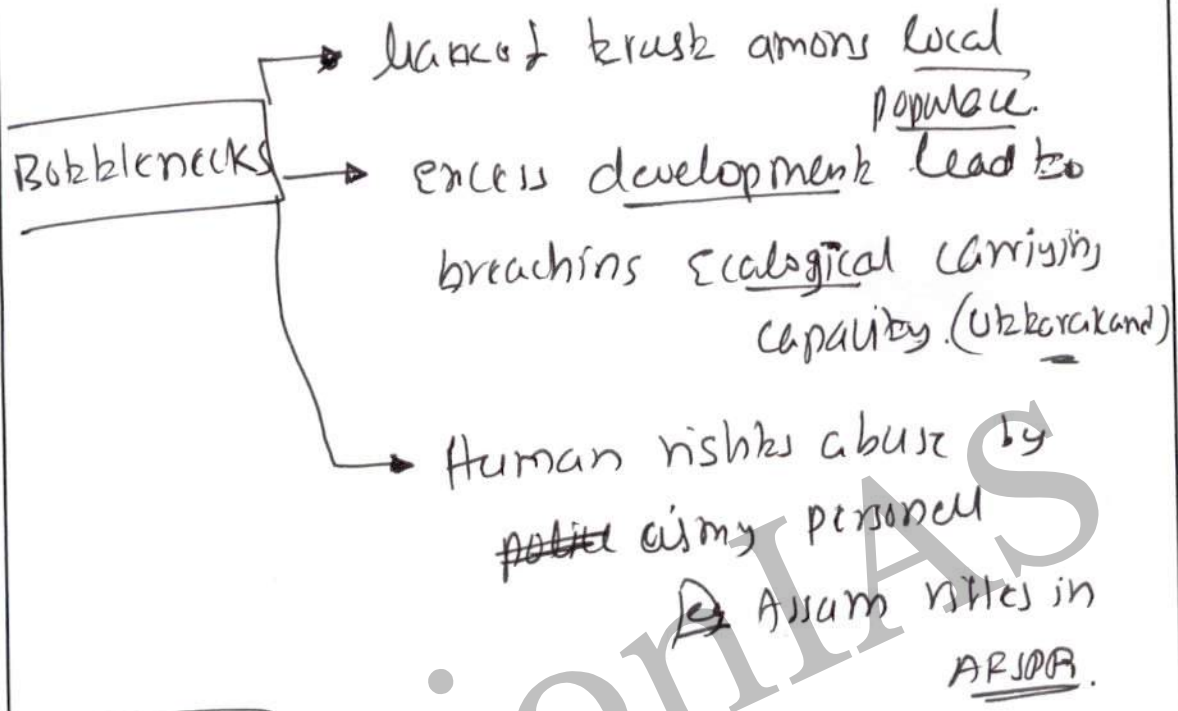
1) "Border village development programme" for integrated & holistic progress.

2) connectivity roads le Daulat Beg-oldie road.

3) Disaster management act, 2005 → special reference to Border villages.

4) "security + local people" ⇒ mission "mautisi"

to ensure safety and security of the areas.



To achieve Border security, we need the cooperation of local community more than anyone.

SPACE FOR ROUGH WORK

L

VisionIAS