

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. : 0390175

अभ्यर्थी का नाम/Name of Student : Rajat Singh

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

20/08

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

केंद्र
Centre

LUCKNOW

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)					



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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)

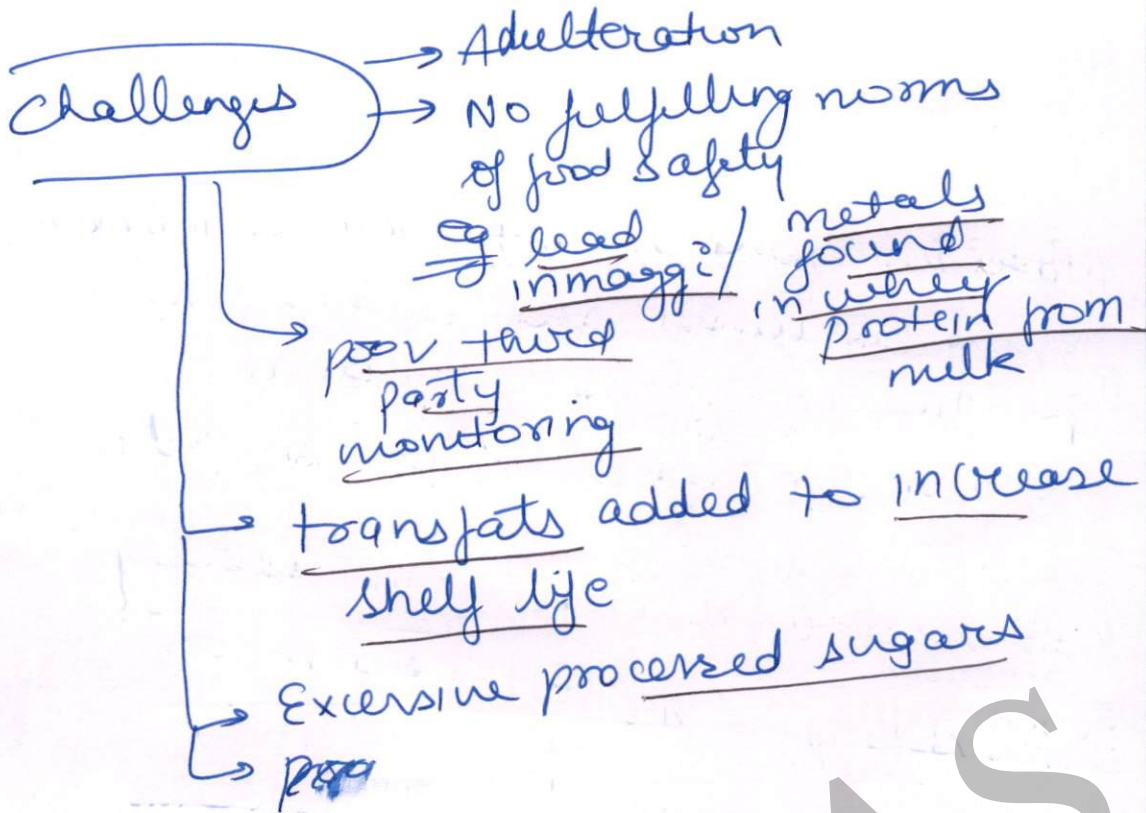
उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
Candidates must not write on this margin

10

Food processing industry provides immense value addition and enhance export potential of farmer's produce. It also is significant for food security & safety

Role of food processing sector in food safety & security

- ① Primary processing removes dirt and particles harmful for consumption
- ② value addition to food via new technologies like biofortification
- ③ Provide research and development in improving food safety
- ④ Ensure the processed food suits the safety standards by institutional bodies like FSSAI, phytosanitary methods mentioned by Codex Alimentarius of FAO
- ⑤ Accountable to rising demands to increased choices of consumers of healthy safe food



Way forward

- FSSAI → REPLACE / Eat Right / Biofortification
- Periodic monitoring of compliance by food processing units
- Industry academia linkage to prescribe healthy limits of additions to food
- grievance redressal → Consumer Protection Act 2019

Effective institutional & holistic policy is needed to ensure that consumer safety is at heart of food processing sector

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

National food security Act provides for public distribution system to provide subsidised grains to marginalised section of society. FPS are the ration shops to buy such grain

Evolving process of FPS transformation

- ① Initially grain distribution occurred directly from grain storage and godowns
- ② Fair price shops where grains were allocated and provided directly to identified beneficiary
- ③ However this led to leakages, corruption, ghost beneficiaries
- ④ Concept of digitalisation and linkage to Aadhar card for better service delivery
- ⑤ Concept of one nation one ration card for portability for migrants

⑥ Newer concept of last mile connectivity via on door delivery of grains directly

eg → Use of drones to supply food to hilly terrains and inaccessible part of country.

Shanta Kumar committee

- ↳ end to end computerisation
- ↳ allow procurement at farm level
- ↳ private sector participation in fair price shop & procurement infrastructure
- ↳ linkage of FPS and ENR

Thus transformation of FPS depict the journey of efforts towards spirit of Antodaya & Sarvodaya & achieve SDG of No hunger

3.

भारत में एग्रीटेक स्टार्ट-अप 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

As per Ashok Gulati, use of technology in agriculture can increase agri-GDP by 23-1. This must be encouraged via agri-tech startups.

Significance of agri-tech startups

① Farm productivity

↳ Reduce cost via precision farming

eg AI, ML can be used to find exact amount of fertilizer, water requirements of the field & crop eg Netajim

↳ Reduce wastage and pollution of ground water due to excess fertilizer and pesticide eg AutoNext

↳ Reduce the cost of subsidies & import bill

↳ Early warning system of extreme weather events like cyclone, floods, drought

eg Bhuvan by ISRO provides insights into crop cycle & climate patterns via satellite imagery & data

② Market access

- ↳ Better price discovery
- ↳ overcome APMC monopoly and illegal levies
- ↳ linkages to local & global supply chains to get remunerative prices for farmers
- Farmers get choices to decide what to grow based on market demands

[eg] e-NAM → links farmer to buyer, sellers across India

→ allow links to capital markets via NCDEX

ENWR → allow farmers to get receipt for their grains deposit & use it as collateral for loans

This participation of agri-tech startup needs to be encouraged via schemes like Startup India, tax exemptions and production linked incentives to help achieve doubling of farmer

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

Land reforms were steps taken to end zamindari, ensure tenancy reforms and consolidation of land holdings. There is need of 2nd land reforms marked by digitalisation of land records

Role of digitalisation of land records in land reform

- 1) Data on ownership of land
- 2) Reduce litigation over land disputes that help reduce burden of lower courts
- 3) Better policy planning and implementation regarding land acquisition, proper compensation to owners and settlement and infrastructure planning
- 4) Ensure real ownership of land to people. It can be used as collateral in accessing loans as better price discovery & real value of land

5) Tenancy reforms via model code on tenancy can be implemented by calculation of rent.

6) Land consolidation via FPO formation becomes efficient & convenient

7) Reverse land degradation

Steps taken

- ↳ SVAMITVA by ministry of Panchayat Raj
- ↳ Digitalisation of India Land Records
- ↳ Right of compensation for land acquisition Act 2013

Land reforms, can be effectively implemented by digitalisation and help achieve SDG goals. and help prevent land desertification as per UNCD targets. & Bonn challenge

5.

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

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

10

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

As per Economic Survey 2020 India's demography will reach its maximum potential by 2041. Thus to reap the dividend India would need expansive manufacturing sector to absorb this rising workforce

Need for manufacturing led growth model

① Reduce dependency on agriculture
→ disguised unemployment as agri sector has 46% of workforce but contributes only 18% to GDP

② Manufacturing sector provide both low and high skilled jobs
unlike service sector that needs high skills

③ Help in formalisation of informal sector which employs 90% of the workforce. It is devoid of social security cover.

↳ Promotes greater gross capital formation which enhance economic Capacity

eg Current GCF is at 30%.

↳ Promotes greater investments like FDI/FPI and enhance countries savings and investment rates

↳ Spurs research, innovation and allied sectors. It has spillover effect on infrastructure, transportation and communication sectors

↳ Reduce jobless growth, enhances GDP growth & inclusive development

Steps

- Make in India
- Startup India
- Production linked incentive
- National infrastructure pipeline
- Increased capital expenditure in budget 2023 to 10 lcr

Thus enhancing manufacturing sector from current 16% to 25%. Contribution to GDP can create jobs & reap demographic dividend

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

As per Global climate change report
India is 7th most vulnerable
country, and its impact will be felt
most in coastal communities

Hazards to
coastal
community
from climate
change

→ Sea level rise has been
5-6 cm per decade as
per IPCC

→ Submergence of coastal
areas & reduced
living space

→ Salinisation of agricultural
soil & impact
food security

→ Extreme disasters like
cyclone / tsunami cause
death & destruction

→ Loss of jobs, livelihood due
to loss of fisheries, aquatic
ecosystem like corals
due to ocean acidification

How to increase resiliency

① Awareness, education and capacity building

② Protection to mitigate risk

eg shelter belts, mangroves, bioshock absorber, coastal sand dunes

③ Early warning system and evacuation plans as per NDMA guidelines for specific coastal disasters

④ Training via drills, mock plans, shelter homes

⑤ Participation and public feedback to develop plans. Role of local bodies, NGO, civil society

⑥ Technological leverage → Use of AI, ML to predict disaster

⑦ Concept of Apadmitras, structural safety audits

India needs global cooperation via platform like CDRI and localise the principles of Sendai framework to build resiliency among people

7.

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

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

10

Green Credit program provides a market based solution for carbon neutrality target & sustainable development. It includes scheme like PAT, cap and trade. in compliance with Kyoto Protocol

Significance of Green credit for sustainable environment

- ① Ensures polluter pays
- ② Carbon neutrality as emitters need to buy emission certificate if they exceed their quota
- ③ Signals to market and companies to invest in renewable energy in the long term to reduce cost of emission certificates
- ④ Provide flexibility to companies to adapt and transition to green energy gradually

5) Reduces fiscal burden on government to regulate as it is market controlled

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

Concerns

- lack of participation
- Commercialisation of environment
- Incentivise companies to see environment as just another cost parameter
- Poor monitoring of compliance
- Can lead to double counting errors
- Difficulty in measurement of emission & tracking of compliance
- multiplicity of schemes & bodies

India needs global partnership & effective institutional reforms to ensure effectiveness of Green Credit Scheme

8.

जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)

What is the need for NavIC when existing satellite navigation systems are already available?
(Answer in 150 words)

10

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

NAVIC is indigenous communication & navigation satellite of India.
It consist of 7 satellite at altitude of 1500km & has both geostationary & geo-synchronous satellites.

Need of NAVIC

- reduce dependence on foreign tech like GPS of USA
- Boost research & innovation within India
- Provides low cost navigation help to companies, startups & government departments
- Boost transportation sector
- Better policy planning of infrastructure, webonisation & land resource management.

- Reduce monopoly of global powers over navigation
- Promote Export potential of ISRO's NAVIC service at cheap price to neighbours.
- Part of Neighbourhood first policy
- Help in security concerns via surveillance over Indian Ocean against Chinese excursions

Thus NAVIC has enhanced space self reliance as part of Atma
nirbhar Bharat

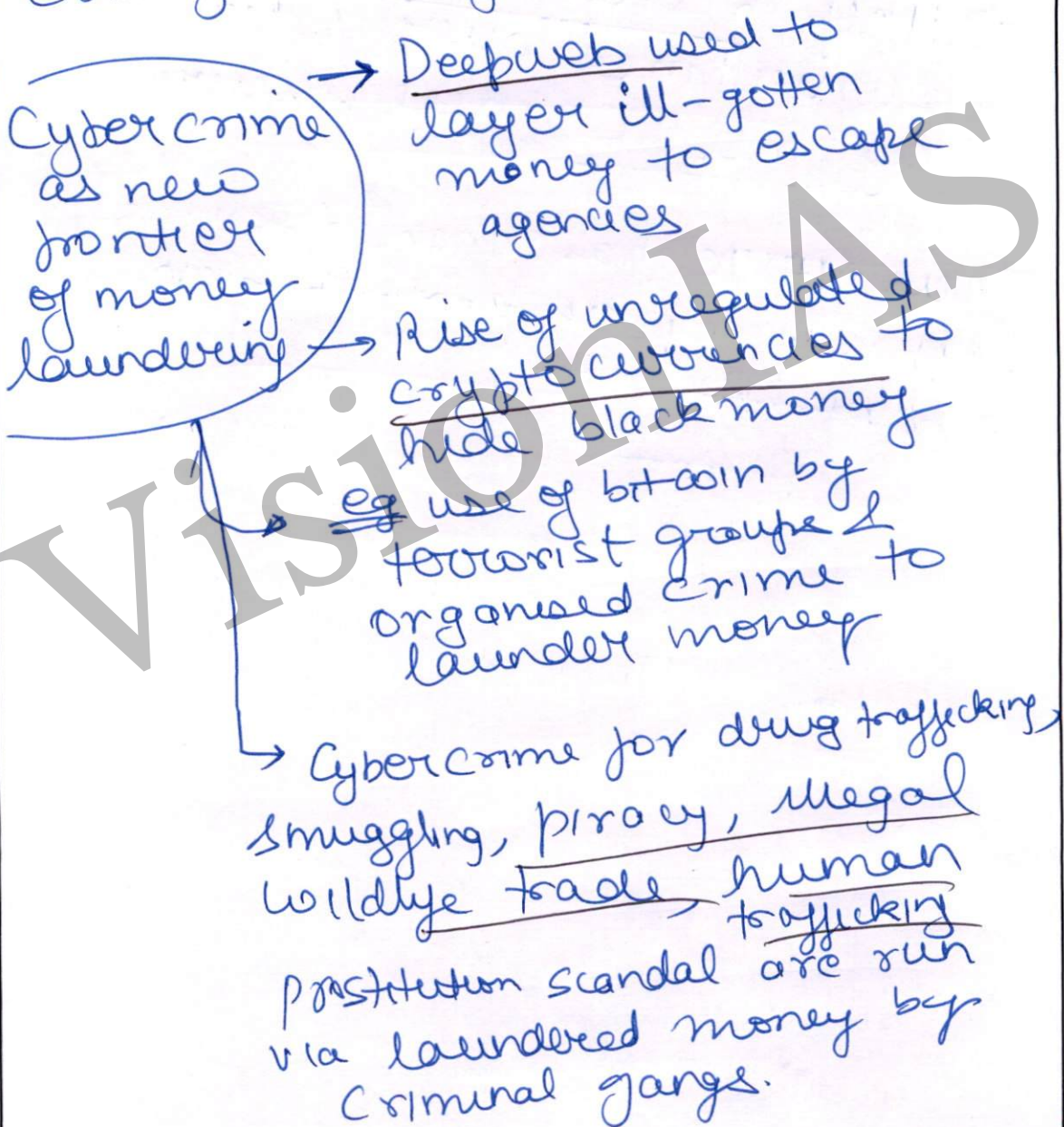
9.

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

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

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

India ranks 10th as ~~the~~ one of the most cybercrime vulnerable nation in cybersecurity index. It is visible in use of cyber financial crime for money laundering.



Government steps

- ① 30% tax on virtual digital asset
- ② Crypto currencies under Prevention of money laundering Act
- ③ SIT probe in 2014
- ④ global cooperation with FATF against money laundering
- ⑤ Public awareness and training of officials
- ⑥ Use of AI/ML to track such activities
- ⑦ Use of central bank digital currencies
- ⑧ Bilateral agreement ~~with~~
eg global minimum tax to reduce influence of tax havens

India needs ~~of~~ proactive engagement at international level to curb menace of cybercrime & money laundering

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

Technology and innovation is needed for ever changing needs of battle and border security. India needs to invest heavily in tech in military.

Need for technology in defence sector

- Act as deterrent against enemies
- Better adapt to diverse conditions of border areas
- Prepared for wars against neighbour who have invested in high tech defence products
- Protection for border security and management
eg drones for surveillance
thermal imager & laser barometer to detect migrants, drug trafficker
- Replace old weapons eg Rajael
- Rise of hybrid warfare
eg cyber security / Quantum communication / Satellite imagery
har privacy

Challenges

- high cost
- dependence on imports for critical technologies can have backdoor implants that affects security
- poor innovation & budget allocation
- poor private participation.
- bureaucratic inertia, lengthy & complex procurement procedures for technology
- monopoly of few nations & reluctance to share

Way forward

Madhukar Gupta Committee

- PPP projects
- global cooperation

Shekhar Committee

- easy defence procurement
- make 1 make 2 list for indigenisation of tech under make in India
- positive & negative list for imports
- offset policy

Thus India must heavily invest in technologies to increase capacities of our patriots

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

15

North Eastern Region is among the least developed in terms of some economic development indicators. This is often due to poor development of trade & commerce.

Issues in development of trade & industries in NER

- ① Geographical isolation from mainland India
- ② Difficult terrain due to thick forest, mountains and plateaus. makes difficult to build infrastructure
- ③ Ecologically sensitive area and infra development can harm flora/fauna
It is one of biodiversity hotspot of India with high forest cover
- ④ Tribal population resist external intervention and changes to their way of life.

(5) Insurgency and security threats to trade. eg NSCN, ULFA, Mizo national front blow up bridges, kidnap workers and damage industries. This resist private investors from investment

(6) Political & Constitutional safeguards under 6th schedule and inner line permit reduces role of central & state government in development of trade

Measures taken

(1) Ministry of development of North East Region (DONER)

(2) PM DEVINE mission

(3) UDAN by civil aviation ministry to ~~also~~ develop airports

(4) Bharatmala Paryojana for road linkages / GATI Shakti for multimodal transport

(5) 90:10 funding in all centrally sponsored schemes

(6) Vibrant Village programme to develop villages at junction of borders in NER

- ~~1/10~~
- ⑦ One district One product scheme
 - ⑧ Tourism development via Ganga Vela programme to boost connectivity via inland waterway
 - ⑨ Schemes like Aspirational district Aspirational Block, PM Jan Arogye Yojana, Jal Jeevan mission promotes development of NER

Thus India needs cooperation with state government and neighbouring countries to enhance connectivity and promote job growth via greater trade and investments in the region.

12.

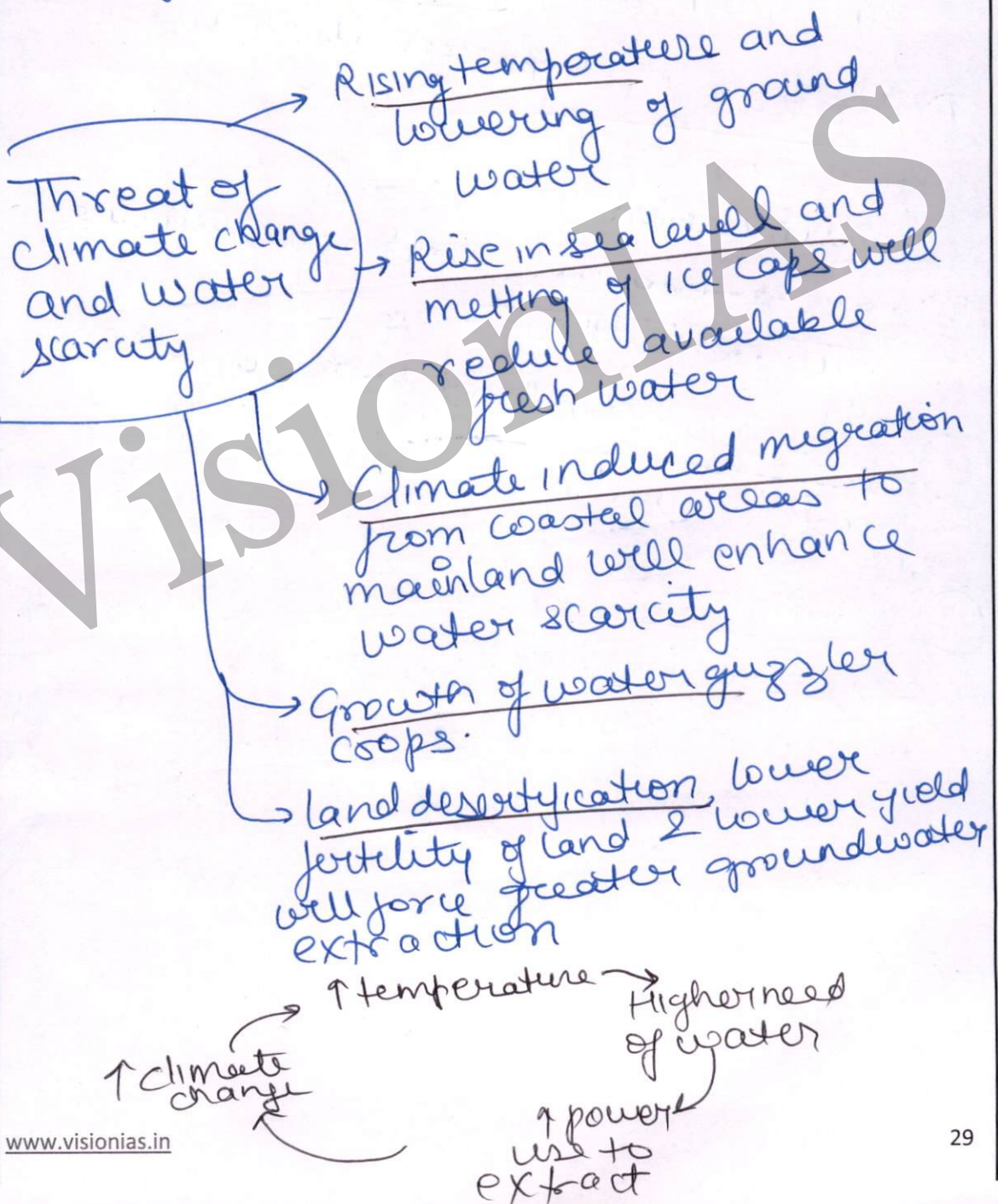
जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

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

India has 18% of world population but has 4% of world's water resource. As per Niti ayog, India will face severe water crisis by 2030.



Significance of micro irrigation for sustainable agriculture

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

- ① Reduces water wastage
- ② Better application of fertilizer & provide for precision farming
- ③ Reduces cost of irrigation, fertilizer and pesticide eg drip irrigation
- ④ Reduces leaching of nutrients due to flooding of fields in rice, wheat cultivation
- ⑤ Less power use to extract ground water dredging
- ⑥ suited for dryland farming where water availability is low
- ⑦ Customisable and controlled
eg fertigation by dissolving fertilizer in irrigated water
→ Used with sensors and smart meters to measure water levels
- ⑧ Sustainable, efficient & economical

Way forward

Mihir Shah committee

- ↳ private participation
- ↳ linkages with Rain water harvesting
- ↳ Integrated watershed management
- ↳ River basin approach
- ↳ Handheld support to farmers to adopt micro irrigation

Steps → Pm Krishi Sinchayi yojana
→ Accelerated irrigation benefit
→ Per drop more crop (Har Khet ko Pani)
→ Pani Panchayats.

Thus micro irrigation provides roadmap for water conservation and sustainable agriculture. to provide resilience against climate change

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

India has the second largest rail network in the world and provides for both passenger & freight movement. However there are concerns with freight transportation that needs to be addressed

Issues of freight transportation

1) low share → most freight still move via roadways & contribute to traffic & road congestion

2) Delays in arrival & departure → lead to loss of perishable food grains
→ affect farmer income and food security
→ increase fiscal burden of government

3) High operating ratio → poor fuel usage
→ poor travel path planning

4) Greenhouse gas emitter → contribute to global warming as it runs predominantly on fossil fuel

5) Outdated coaches and rail queue → threat of accidents, derailments and damage to life & property

6) Poor inculcation of technology

7) Delay in development of dedicated freight routes & corridors that affect passenger train movement

Strategies to be adopted

1) Indian Rail policy → 100% carbon neutral rail by 2030

→ electrification of routes of freight corridors

2) Dedicated East & West freight corridors

- Krish rail policy / Kisan rail
- Private sector participation
via PPP for development of coaches and related infra
- Technology leverage to lower operating ratio
eg kavach to reduce accidents
- Linkages with PM hatishakti for multimodal transport for reducing time & cost for freight trains

Freight trains can help reduce ~~cost~~ logistical cost from 16% to 10% of GDP as envisaged in National logistic policy & boost trade, commerce and manufacturing sector

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

India has enhanced its renewable energy installed power capacity to 178 GW out of which solar is 65 GW and wind is 40 GW. India is today frontrunner in energy transition

Factors aiding India's renewable sector growth

- ① Global cooperation and leadership
- ↳ International solar alliance
 - ↳ One World One Sun One Grid
 - ↳ Global biofuel alliance
 - ↳ Civil nuclear deals with US, Japan
 - ↳ Green hydrogen partnership with USA
 - ↳ Lead IT initiative with Sweden

- ② Domestic efforts by government
- Solar energy → Pm KUSUM to help farmers access solar energy
- Rooftop solar program
- SRISTI

Biofuels → Ethanol blending for gasoline

→ Waste to wealth plants

Nuclear energy → ~~***~~ Breeder plant as part of 3 stage nuclear development plant using thorium reserves

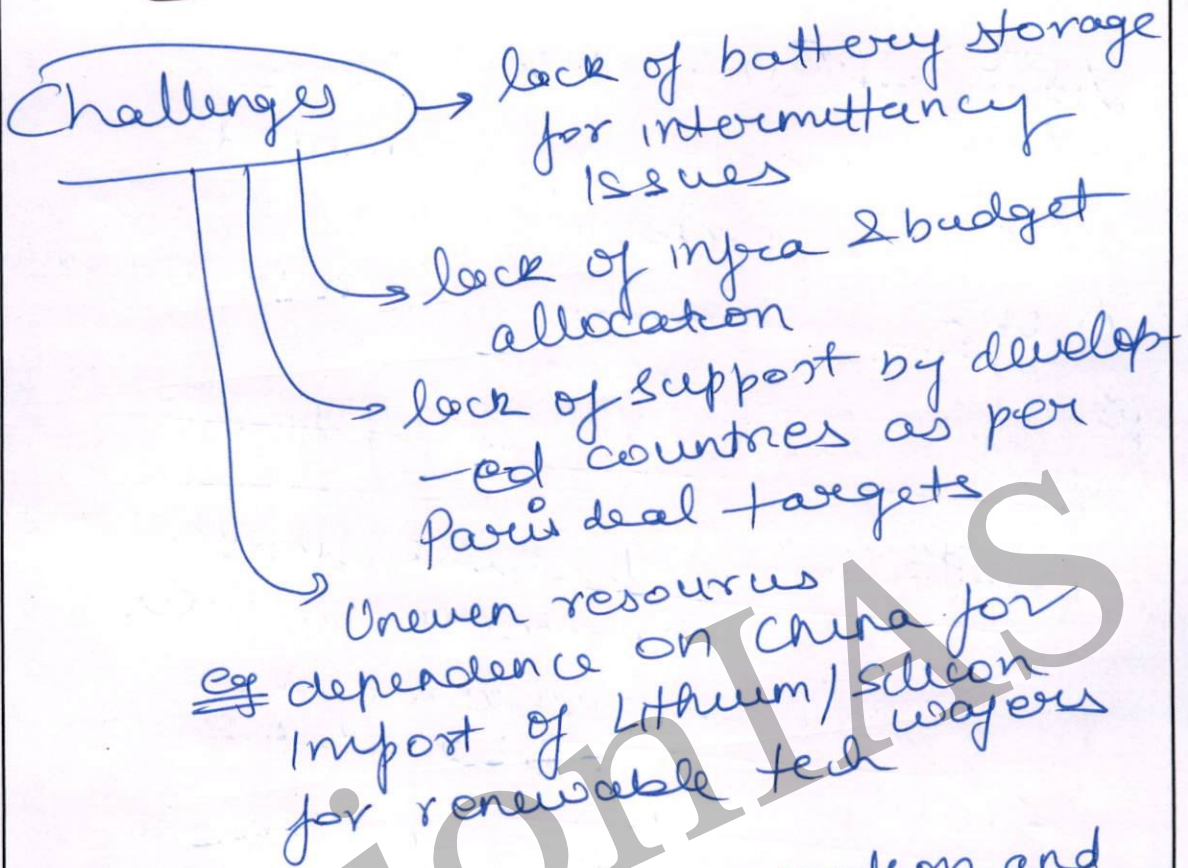
Green hydrogen mission → 5 MMT annual production target

(3) Geographical factors → presence of diverse climate conditions
→ lies in tropical region of ample sunlight
→ wind potential in coastal areas due to monsoon
→ geothermal potential of Himalayan region (Puga valley)
→ Hydroelectric potential due to fast flowing rivers

(4) Local policies → private investment
→ flourishing startup sector
→ Ease of doing business
→ Rising market demand & consumer awareness
→ tax incentives

eg Ban on BS IV \rightarrow transition to BS V/
fuel & electric
vehicles

Production linked incentives



India needs global cooperation and local institutional efforts to fulfil Panchamrit goal of Carbon neutrality by 2070 & 500 GW of renewable by 2030

15. उर्वरकों और कीटनाशकों से युक्त कृषि अपवाह पर्यावरण प्रदूषण में किस प्रकार योगदान देता है? कृषि अपवाह के प्रभाव को कम करने के लिए क्या उपाय अपनाए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)
- How does agricultural runoff containing fertilizers and pesticides contribute to environmental pollution? What measures can be taken to mitigate the impact of agricultural runoff? (Answer in 250 words)

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

15

Agriculture is third largest contributor to environmental pollution & emission. Agricultural runoff is one such potential harm to environment

Role of agricultural runoff in environmental pollution

- ① Fertilizer in runoff cause eutrophication when it reaches water bodies
- ↳ algal bloom cover surface
 - ↳ cut off sunlight and used up oxygen leads to anaerobic conditions
 - ↳ kills off aquatic life and reduces life of lakes, river, reservoir, wetlands
 - ↳ Runoff when seeps underground pollutes groundwater which is sources of irrigation and drinking
- ② Pesticides in runoff cause pollution of waterbodies

→ Fishes feed on this water leads to bio accumulation and biomagnification of heavy metals in the food chain

→ Affect health of communities that depend on fishes for food.

→ Water becomes unfit for consumption and irrigation

③ Runoffs when stay over land can deposit salts lead to salinisation of soil and reduced fertility

Mitigation of impact of runoff

① Zero budget natural farming & organic farming

↳ lessen use of chemical fertilizers and pesticide

② Integrated farming via mixed farming
integrated pest management ~~and~~
reuses the water and reduces the amount of runoff generated

- Treatment of water before release into water bodies
- Microirrigation reduces water overflow
- Contour ploughs, terrace farming reduce water runoff
- Riparian buffers to filter out runoff
- Artificial reservoir to collect runoff and treat it. This can be reused and recycled or released safely to recharge groundwater

Need for institutional mechanism via legislation to ensure proper treatment and management of agricultural runoff.

16.

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

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

15

The recent subsidence of land in Jashimath signified the need to ~~relook~~ tourism policy & it's alignment with carrying capacity of fragile ecosystems.

Effect of growing tourist on carrying capacity of Himalayas

→ increased construction disturbs ecosystem
eg explosion for mining, building road construction

→ deforestation to clear land for infrastructure like hotels, cinema, parks for tourist.
It lowers resistance to floods, cloudburst and avalanches

→ increased waste generation, incidents of forest fires.

Measures to prevent such disaster

- ① Cap on number of tourist in a month or a year
- ② Environment impact assessment of projects in hilly areas
Eg Gadgil committee & Kasturirangan committee declared areas of west ghats as ecological sensitive & banned red industries
- ③ Sustainable tourism practices
 - ↳ Use of paper bags
 - ↳ Proper waste disposal
 - ↳ following rules of hilly areas
 - ↳ Using local made product to promote local job growth
 - ↳ Car pooling, public transport,
 - ↳ Community living over hotels
 - Eg ashrams, dharmshalas etc
 - ↳ promote ecotourism while maintaining cleanliness

④ Penalties for violation of laws
eg fines for littering

⑤ Rainwater harvesting,

⑥ Local awareness, training, capacity building,

⑦ Focus on green GDP, gross environment product

TSR
Subramaniam
Committee

→ dedicated cadre of Indian environment service

→ Ecosensitive zone banned from tourism

→ ~~the~~ Limits on unplanned urbanisation

This sustainable tourism must be promoted with government - civic partnership

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 हार्शिए में नहीं लिखना चाहिए
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Superconductors are materials that ~~have~~ ^{have} near zero resistance to the flow of current and infinite conductance.

Principle of super conductors

Lowering of temperature reduces electron movement & motion

At a critical threshold the internal magnetic field collapses

This allow flow of electron in single direction without collision & resistance to current.

Use of Superconductors

① Health

- Use in MRI machine
- CT scans
- Tumor detection cells
- Encephalogram
- Dialysis machines

2) Transport → maglev trains work on levitation which involve super magnets derived from superconductors

3) Energy → reduce loss of energy as heat if wires made of superconductors
→ Reduce AET losses of DISCOMS & cost of electricity

4) Nuclear research → superconductor used to generate high temperature arcs in short time for nuclear fusion research @ ITER

5) Research in large hadron collider → uses superconductor to collide particle to study nature of atom

6) Used in super computers → fast calculations & processing

⑦ Quantum technology → eg Quantum Computing
Quantum key distribution

⑧ Robotics and automation → require fast analysis of huge data & need high current usage
eg self driving cars

⑨

Thus government must invest heavily for research & development of superconductors for sustainable science & tech

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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18.

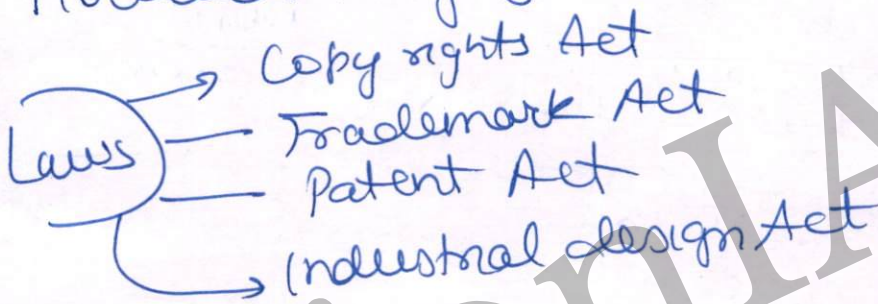
यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तर वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

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India IP rights protection ensures protection of patents, copy rights, trademark, industrial designs in conformity to WIPO guidelines. However they face some limitation.



Limitation of IPR in India

(1) Administrative challenge

- lack of manpower for enforcement of laws
- poor budget allocation towards IP protection
- poor infrastructure
- issues of duplication of efforts and ~~the~~ delay in clearances

(2) Regulatory

- Complex laws with overlapping jurisdiction of various bodies
- Time taking and costly
- Lack of independent third party review
- Red tapism & bureaucratic delays

(3) Enforcement

- Lack of legal institutional all India body to enforce laws
- Poor grievance redressal mechanism
- Poor functioning of appellate tribunals with high pendency of cases

Other Issues

- greenwashing / pinkwashing
- laws not complying with global standards
- differing definitions
- government one of the biggest litigators.

Way forward

- Need for holistic national IP right policy
- protection and simple procedures for startup & MSME
- Prioritise ease of doing business, faster single window clearance and reduce cost
- Independent 3rd party periodic reviews

Thus India needs holistic policy framework with legal backing for IPR protection. ~~≠~~

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)

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

15

Theatre commands are unified military units which are specifically trained for warfare at a particular border. It was recommended by Kargil committee on military reforms.

Significance of military theaterisation

1) greater unity and interoperability of 3 wings of army

2) India has vast borders with completely different environmental and geographical conditions with different enemies & their capacity

[eg] Rajasthan is sandy & Gujarat is swampy on border with Pakistan need different approach compared to alluvial plains on border on east

- 3) Better manpower utilisation depending on need
- 4) faster deployment in case of 2 front war with China and Pakistan.
- 5) Increase deterrence of neighbours and theatre force are adapted and readily reinforced

eg During Galwan clash, it took time & cost to deploy all units of army.

Challenges

- ↳ Shortage of manpower
- ↳ difficult to provide for all border situations
- ↳ Can increase cost for maintenance & training of forces
- ↳ Difficult to decide chain of command among the forces

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

VisionIAS

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

Vibrant Village program is aimed at enhancing capacity building of frontier villages for effective security and border management.

Border villages key for border security

① Being at frontier, they are the first line of defence against security threats.

② Help tackle issue of illegal migration and encroachment at borders via intelligence sharing with local police and agencies

Eg. BSF partnership with local informers against Bangladesh infiltration

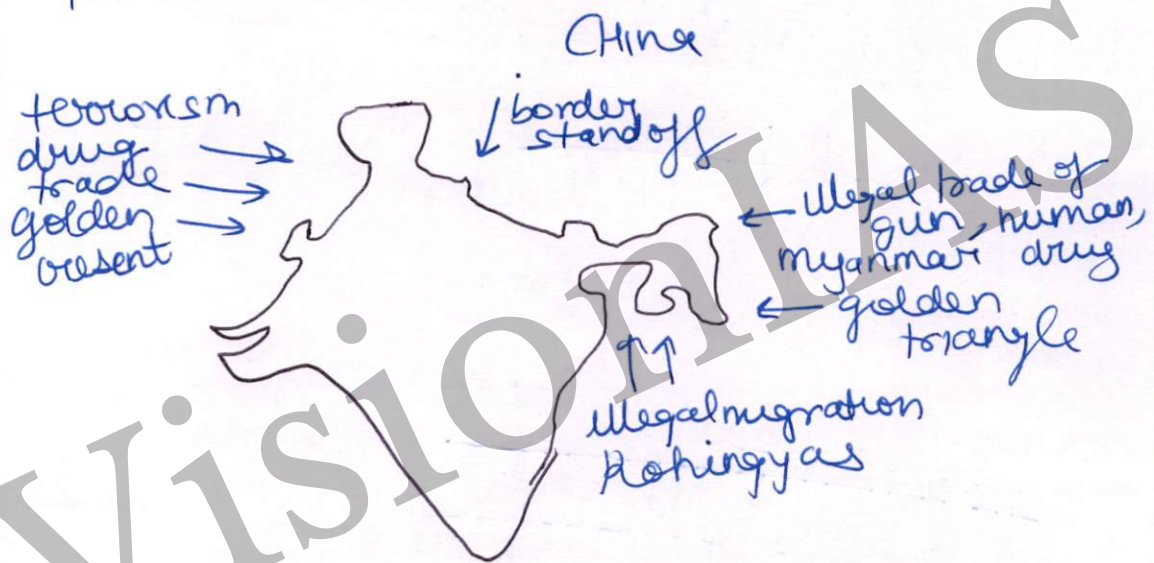
③ Village can provide manpower and skilled labor for

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infrastructure development at border

eg BRO road construction at LAC

- ↳ Action against drug trafficking, smuggling, human trafficking, cross border organised crimes
- ↳ Provides resiliency against disasters in coastal areas



Measures by government

- 1) Vibrant Village program
- 2) Budget allocation increased to BRO
- 3) Village protection committees in Kashmir to protect against militants

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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4) Engagement with local Civil Society, NAO, Urban local bodies

5) Training, skilling, capacity building

6) ~~Special~~ Infra development via Aspirational district & block program

Madhukar Gupta Committee

→ involve locals in patrolling of border

→ Help in local intelligence collection

→ Capacity building of local via budget allocation

Thus government's initiative toward frontier villages need greater synergy & proactive involvement

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