

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. : 00563381

अभ्यर्थी का नाम/Name of Student : DIPTI RANJAN PATI

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

25/08/24

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

केंद्र
Centre

Bhubaneswar
(006)

निरीक्षक के हस्ताक्षर
Invigilator's Signature

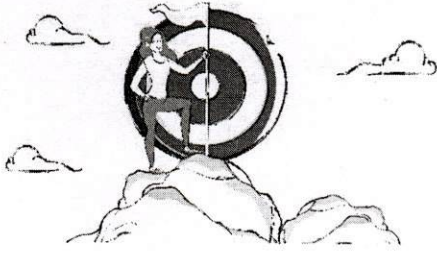
J. Saha
25/08/24

| | <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> |

| | |
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| 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?

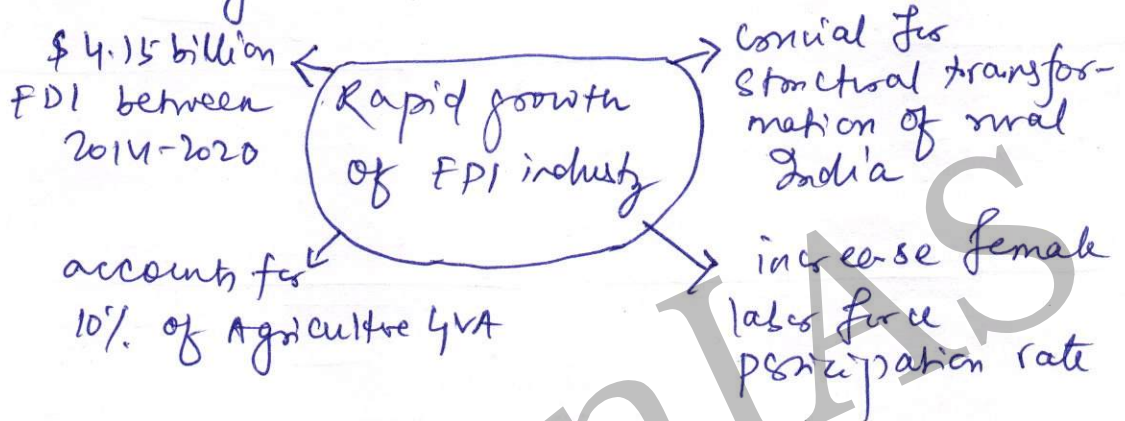
(उत्तर 150 शब्दों में दीजिए)

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 हिसाब में नहीं लिखना चाहिए
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The food processing industry (FPI) is considered a sunrise sector in India, employing over 9 million (2024), accounting for 13% of exports.



Rapid growth of FPI leading to food safety challenges

(i) Bulk of FPI in unorganised sector
→ lack of sorting, grading facilities
→ lack of hygienic conditions, neglect of standard manufacturing practices

(ii) Pesticide, chemical traces due to lax domestic standards, monitoring
eg- recent findings with respect to
spices (MSH, Everest)

iii) Adulteration of milk, spices a rampant phenomenon.

iv) lack of adequate expansion of cold chain storage reducing the shelf life of processed food.

v) lack of expertise, technology integration, Staff.

Way forward

i) need to raise investment in cold chain storage, cooling facilities

ii) enable access to technology; automation

iii) stringent monitoring; Quality Control

iv) PMKSY and NPOF can be leveraged to promote organic food products.

So, there is a need to create institutional measures to set up monitoring and remedial steps in the food processing industry to protect domestic consumers & exports.

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

The PDS is the fulcrum of India's food security architecture, allowing the govt. to scale up food provisioning as and when needed.

Fair price shops (FPS) - an evolving process under the PDS

(i) The PDS was set up in the 1960s to provide grains/ration at subsidised prices through the FPS.

(ii) The high leakage through the FPS led to the setting up of the TPDS (Targeted PDS) to better allocate food provisioning.

→ Ration cards were streamlined and monitored to prevent exclusion errors.

(iii) the NFSA (National Food Security Act) enlarged the scope of the PDS and the FPS, providing wheat, rice, millet.

(iv) Various State govts have also used the FPS to provide prunes, other nutritious food to pregnant, lactating mothers.

(v) Fortified food such as golden rice, wheat are also provided through the FPS.

(vi) The rise of Smart PDS has enabled better targeting, with the use of biometric identifiers, seeding with Aadhaar.

→ this has reduced theft and leakage to a great extent -

(vii) Foodgrain ATMs are also been started (eg. Odisha) and present the next wave of FPS transformation.

So, the FPSs under the PDS have sought to streamline the process of targeting and expand the ambit of food security.

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

Agri-tech startups are crucial last mile institutions, acting at the interface between the govt. and farmers, by giving shape to the Agri-stack.

Role of agri-tech startups in enhancing farm productivity and market access

Farm Productivity

(i) Precision agriculture - by deploying sensors, drones to increase precise use of farm inputs (fertilisers, irrigation)
→ results in low cost, efficient use of inputs, rise in yield

(ii) Plugging gaps in extension services.

→ startups help monitor microclimates, soil health conditions to help

plan the farm cycle - the right time to sow, fertilise, harvest.

→ they also aid the process of agro-foceting, mixed cropping, alley cropping.

(iii) use AI, ML to make use of data analytics to arrive at optimized use of resources.

Market Access

(i) by interconnections with logistics networks, improve access to the market.
eg - use DLIP.

(ii) data analytics enable price prediction and the right-crop choice

(iii) enable collectivization efforts
→ improved bargaining power.

Challenges → lack of adequate funding
→ high capital cost of precision farming.
→ reluctance of farmers; mistrust.

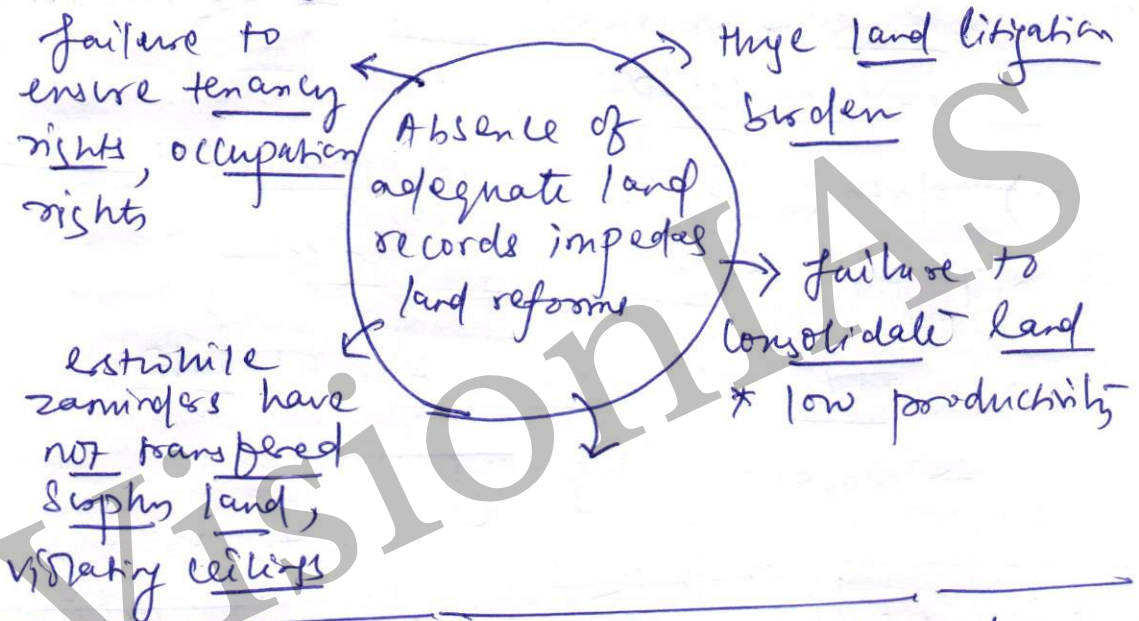
So, there is a need for the Govt. to foster confidence amongst small and marginal farmers and further enable agri start-ups to act as last mile institutions.

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

The absence of proper and adequate records of property rights in the vast swaths of rural India, is a legacy of colonial era land settlement and resulting institutions such as Zamindars.



Role of digitization of land records in effective implementation of land reforms

- (i) the NLRMP (National Land Record Modernisation programme) under Digital India will create a record of rights of the small farmers, tenants, tillers.

(ii) digitisation will enable further reforms such as consolidation, transfer of surplus land

(iii) Record of rights will enable easier credit access, mechanisation, leading to higher productivity.

(iv) SVAMITVA, by identifying land parcels, will aid property tax collection, boosting revenues of PRGs.

(v) digitisation of records in urban areas will enable urban planning, scientific land use changes

→ will reduce litigation

→ open up land for public infrastructure

Way forward → Blockchain can be adopted for decentralised records (eg. Andhra Pradesh)

→ better use of GIS mapping to reduce disputes.

So, digitisation of land records will serve the ends of social justice, reducing pendency of cases and holistic development.

5.

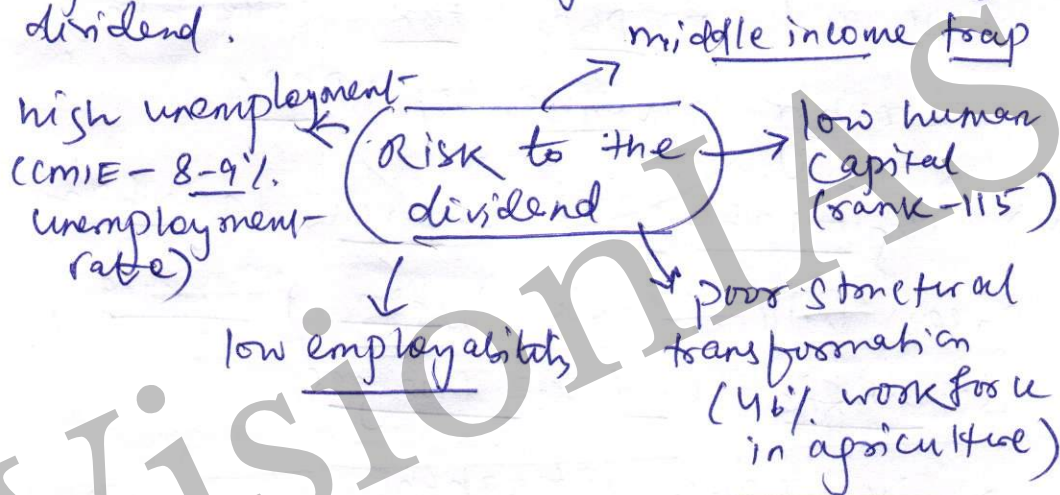
भारत को अपने जनसांख्यिकीय लाभांश का पूर्ण उपयोग करने और आर्थिक विकास में तेजी लाने के लिए एक विनिर्माण-केंद्रित विकास मॉडल को अपनाने की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

India's large youth population in the productive age group; with median age at 28, provides it a distinctive advantage in terms of the capacity for economic growth — the demographic dividend.



Need to adopt manufacturing-led growth model to exploit dividend & raise growth

- (i) high employment-elasticity of manufacturing compared to services
- (ii) most prominent countries (China, Vietnam) have ~~not~~ resorted to broad-based manufacturing for growth & poverty reduction,

(iii) Manufacturing bolsters the real economy, boosting indigenous infrastructure, reducing import dependency

(iv) MSME-based manufacturing can be labo-intensive with adequate labo reforms

(v) Manufacturing focus can gradually enable India's participation in Global value chains (gvc) and rise up the value ladder.

(vi) Manufacturing requiring low to moderate skilling, can enable learning-on-the-job - will create a pool of manages, experts who can lead the next round of industrialisation

Counter argument - Raghuram Rajan contends that India's comparative advantage in the services sector can enable its global leadership
→ also, the world is less accommodative of china-type manufacturing.

The larger consensus is rightly focused, however, on sustaining broad based manufacturing for large scale employment and growth.

6.

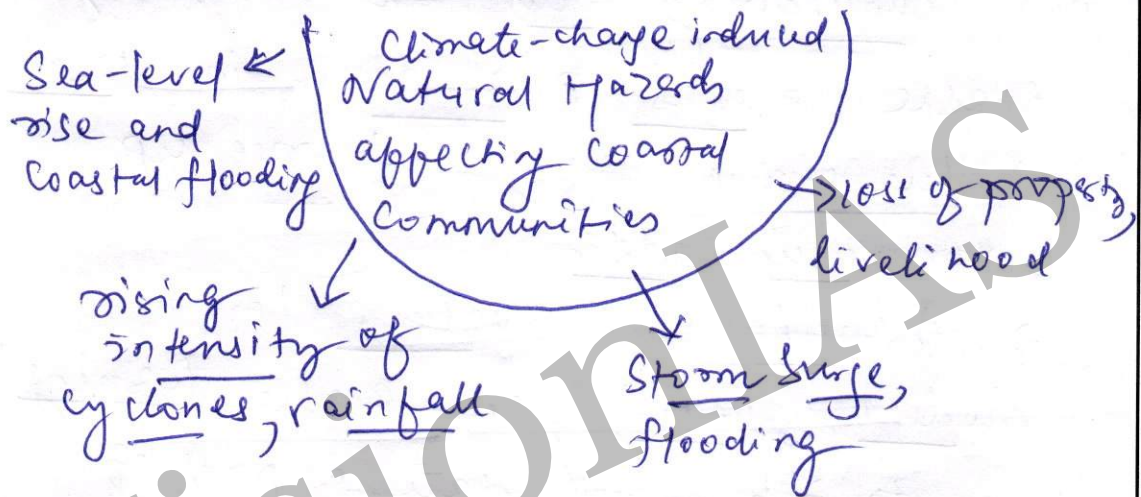
जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

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

India, with a long coastline of over 7500 km, is highly vulnerable to the adverse impacts of climate change and sudden weather events:



Strengthening resilience of Indian Coastal Communities

(i) higher finance for climate adaptation, designed with a focus on vulnerable communities.

(ii) Capacity building through a network of community volunteers, local plans for disaster response.

(iii) Structural measures such as Coastal barriers, Sea walls to prevent ingress of Sea water.

(iv) Strengthen early warning systems to enable evaluation (use of Gemini)

(v) Diversification of livelihoods to reduce exclusive dependence on fishing

→ protection of subsidies through negotiations at WTO.

(vi) Conservation efforts with the help of coastal communities

eg- MISHTI can be leveraged to boost mangroves conservation.

Climate finance - at the same time, there is an urgent need to address the issue of broader mitigation to prevent runaway rise in global temperatures.

So, the coastal communities must be strengthened to be able to adapt to the rising spectre of climate change induced hazards.

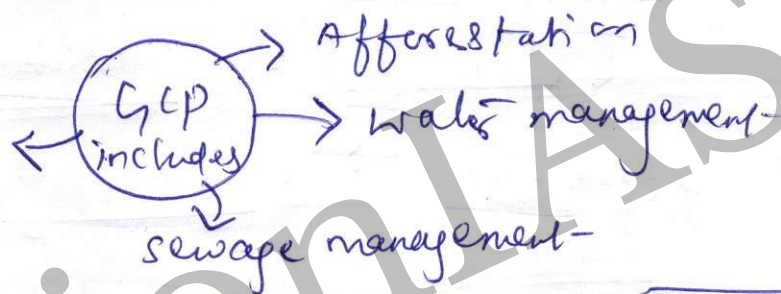
7.

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

The GCP (Green Credit Programme) seeks to incentivise a wide array of stakeholders to undertake environmental preservation and conservation efforts.



GCP goes beyond carbon management to promote sustainable environment.

- (i) GCP is rooted in LIFE (Lifestyle for Environment) programme.
- (ii) it seeks to include individuals, corporations, organisations.
- (iii) incentivises investment in greening, preservation efforts.

(iv) ~~incentivise~~ industries to go green

by
(iv) promote industrialisation by
allowing industries credit for afforestation

(v) in conjunction with Carbon trading,
can leverage the market to induce
pollution abatement

Concerns about GCP

(i) it will slow down greening of
industrial processes as companies
can seek credit for afforestation

(ii) Compensatory afforestation doesn't
exactly mitigate the loss of pristine
forests and biospheres

(iii) the allocation of credit initially
and its subsequent trading is riddled
with lack of clarity.

So, while the GCP
presents a viable opportunity for
broad-based green activities, there is
a need for further finetuning.

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

The NavIC (Navigation with Indian Constellation) is the IRNSS (Regional Navigation), designed by India for its military-civilian use, and within its broader periphery.

Need for NavIC when other systems are available

existing systems → GPS (US)
→ GLONASS (Russia)
→ BeiDou

India has access to GPS

(i) however, GPS use is limited for civilian use (with low accuracy)

→ military use of GPS is governed by the BECA (Basic Exchange Cooperation Agreement) and is restricted

(ii) the NavIC adds to India's strategic autonomy

→ it enhances security of military

operation, also raises operational readiness through surveillance, reconnaissance

(ii) the use of indigenous atomic clock aboard the NavIC will aid scientific processes, physical time-keeping, as well as optimising of logistics, financial operations.

(iv) the IRNSS can also be used for HADR operations, FOR (freedom of Navigations) and sea patrolling.

(v) the large extent of the NavIC (from African coast to Asean) enables India's role in the Indo-pacific.

So, the NavIC is a crucial tool for India, given its role as a net security provider in the region and the necessity of strategic autonomy.

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

Cyber-enabled financial crimes have seen manifold in recent times, with the ICY (Indian Cyber Crime Coordination Centre) pegging frauds in last 3 years at Rs. 25 lakh crore.

Cyber-enabled financial crime as the new frontier of global money laundering

(i) the use of Crypto, NFT have has led to unregulated cross border laundering.

(ii) Dark web as a hot spot of drug trafficking and laundering

(iii) the use of encrypted technology, grey-zone technologies has reduced the scope for surveillance.

(iv) Fintech and tax monitoring of onboarding standards have led

to laundersing (eg - Paytm Saga)

(v) Social engineering, phishing, acoustic side channel attacks have led to a thriving cyber-financial crime ecosystem.

Govt. needs to bolster cyber security

(i) Strengthen the PMLA

→ the inclusion of crypto exchanges a step in right direction.

(ii) Coordination between FIU and other global entities (FATF).

(iii) Streamline RBI guidelines on KYC, CDD (due diligence)

(iv) greater global coordination on crypto to prevent laundersing

(v) Steps such as 'Cyber Swachhata Kendra' to prevent botnet-infestation.

At the same time, there is a need for greater awareness at the individual level (eg - airgapping) and institutional support (forensics, Incident) in the wake of a crime.

10.

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

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. In light of this, explain why there is a need for technology absorption in the defence sector of India. What challenges can India face in this initiative? (Answer in 150 words)

10

The defence sector, globally, tends to be the first to experience the use of technology as a force multiplier. The current Russia-Ukraine conflict makes it amply clear.

Need for technology absorption in defence sector

(i) to establish defence in a world which has moved into technology-enabled warfare (Cyber, space-based, AI)

(ii) to reduce dependence on a large manned army

→ with attendant reduction in revenue expenditure (70%) and scope for capital expenditure.

(iii) to integrate the 3 armed forces,
aid theatricalisation

(iv) to bolster security of the cyber
space, information domain

(v) to raise efficiency of missiles,
precision munition

Challenges India can face

(i) High capital cost of technology
absorption.

(ii) continued prevalence of technology
denial (India still not a part of
NSG)

(iii) dependence on tech import
reduces strategic autonomy

(iv) India's legacy dependence on the
army may hobble integration efforts

So, even as the defence
sector seeks greater tech absorption,
there is a need for simultaneous
reforms in other areas.

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

The North-Eastern region is a strategic cornerstone for India's development and the broader integration of the region with the Asean.

Issues faced by in development of trade and industries in NER

(i) Sensitivity issues

(a) ethnic tensions and resulting civil-strife like situation (eg. manipur)

(b) poisonous tensions and trafficking, leading to volatile situation.

(c) the imposition of AFSPA and misstrust of people (killings in mon).

(ii) Inter-state disputes

→ often hobble the certainty of environment

eg - Assam - Meghalaya border dispute

(iii) Difficult terrain & Hazards

(a) Sikkim considers the only narrow
land based connection with mainland

(b) difficulty of linear to infrastructure
projects due to diverse terrain

(c) Frequent flooding (e.g. Assam),
Glacial outburst (Sikkim) leading
to infra loss (Teesta-3, 5)

(iv) Lack of regional integration

(a) slow pace of BBIN, RIMSTEC

(b) Myanmar civil war has
hobbled the Kaladan multi-modal
project.

(c) slow progress on IMT highway.

(d) China's influence in the region
also a deterrent.

Measures taken to tackle issues

(i) bolstering security through physical

grievance (ITBP, Assam Rifles) and digital measures (BOLD-QIT).

(ii) the DOVER as a focal point for development of NEER.

(iii) VVP (Vibrant - Village) to reduce exodus from border villages.

(iv) the motor vehicle agreement and other bilateral agreements (e.g. Yelephu city, Bhutan) to increase synergies across the region.

(v) Ramping up of infrastructure projects - Sela tunnel, hydro power projects in Assamachal Pradesh

(vi) Security agreements such as Bodo Accord, Bm-Rang agreements to create peaceful conditions.

The northeast is experiencing renewed troubles due to shifts in the neighborhood. It behooves us to work in tandem with other countries to ensure peace in the region & consequent development.

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

Climate change induced desertification, along with adverse land use changes and mismanagement, have led to acute water scarcity and inequities in India.

Micro-irrigation systems as an aid to sustainable agricultural practices

(i) Precision agriculture

→ micro irrigation can enable efficient, optimised use of water

→ prevent water logging, salinisation

→ the 'Per drop more crop' Campaign under PM KSY.

(ii) Promote dryland agriculture

→ micro-irrigation can boost

pulses, millets cultivation

(iii) Efficient-crop choice

→ will enable a shift away from water-guzzling crops that have taken advantage of canal irrigation (eg - Rice in Punjab).

→ agro-climatic agriculture.

(iv) will help recharge the ground water

(v) will promote yield, productivity by optimising use of water, preserving fertility of soil, avoiding runoff

(vi) can be used to aid organic farming, natural farming (ZBNF) practices

(vii) micro-irrigation can be easily integrated with the agri-stack — the use of sensors, drones, AI etc.

Challenges in the adoption of micro-irrigation

- (i) dependence on foreign technology (Israel) for scaling up
- (ii) legacy use of canal irrigation and free power a deterrent.
- (iii) high capital cost for small farmers.
- (iv) micro irrigation not suitable for flood-irrigated crops - Paddy.
- (v) lack of awareness.

So, there is a need to further strengthen the micro-irrigation component of PMKSY to promote sustainable agriculture.

13.

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

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

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

Indian Railways

account for 29% of freight share, despite being less expensive and more environment friendly than road transport.

Issues pertaining to freight transportation in IR

(i) Route congestion — even as passenger traffic has risen by 1377%, since independence & freight by 1642%; track length has risen marginally.

(ii) 40% of routes used at a rate of more than 100%.

(iii) Lack of multi-modal connectivity
→ no seamless transfer from rail to road or waterways.
→ delayed offloading due to use of manual methods

(iv) High dependence on coal for freight revenue (~30%)

(v) slow progress in the construction of DFC (dedicated freight corridors) due to land acquisition delays, cost escalation, problems with transfer from the western DFC to eastern DFC.

Strategies to overcome issues pertaining to freight transportation

(i) incentivise freight-transport through railway; disincentivise road transport through CBOR tax

(ii) expand DFCs & and line with industrial corridors.

(iii) improve multi-modal connectivity
→ raise share of containerised transport

→ Improve on - off options.

(iv) Track expansion and safety.

(v) reduce cross-subsidisation of
passenger transport through railway
freight

→ this will make freight transport
profitable (reduce operating ratio which
is 98%)

(vi) build animal corridors to prevent-
collisions.

Railway freight costs
Rs 1/kg.km while road costs Rs 2.50.
There is an urgent need to reduce
the logistics cost (from 13% of GDP
to 8%) to promote economic
growth.

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

15

India is the 4th largest in terms of RE capacity and the 5th in solar energy installed capacity.

Factors that have aided India's impressive strides in RE

(i) Panchmit Commitment (NDCs)

as the guiding principle for green transition

→ to reduce energy intensity by 45% by 2030

→ to create 500GW of RE capacity by 2030

→ to generate 50% of electricity from non-fossil

→ ~~net~~-carbon neutral by 2070.

(ii) RE target of 175GW by 2022 (now extended).

(iii) Array of subsidies and incentives for adoption of RE, which lowered cost of transition.

(iv) cheap import of solar panels from china

(v) PPA (Power Purchase Agreement), RPO (Renewable Purchase obligation) helped arise power generators of demand for RE.

(vi) Govt. nudges for HH adoption of Suryahe Bijli Yojana

(vii) The rise ESG investments and industrial greening

(viii) Global agreements — ISA, OSOWOG, Global biofuel alliance etc.

(ix) govt.-facilitated land acquisition
→ enabling judicial interventions

challenges to RE adoption

(i) despite rising capacity, RE share in generation at 13%.

→ predominantly fossil based power generation (with new thermal plants slated)

(ii) concerns of PPA's, lack of adequate uptake by DISCOMS.

(iii) problems with indigenous solar water production

(iv) lack of RE integration with grid

→ raise the use of power exchanges (currently, 6.3%)

→ PLI for solar water a sign-step

→ battery storage, pumped hydro storage for integration

So, India needs to ramp up its RE capacity to effect a major transition. At the same time, efforts must be made to preserve our policy space in coal, oil & natural gas.

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 हिसाब में नहीं लिखना चाहिए
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Agricultural runoff

Containing fertilizers and pesticides can lead to environment pollution, health hazards and loss of agri-productivity.

Runoff contributes to environmental pollution

(i) Eutrophication due to high nitrogen, phosphorous content
→ leads to algal growth in water sources, rise in BOD and loss of marine life.

(ii) Runoff contaminates surface water & ground water, making it unfit for consumption.

(iii) Runoff containing fertilizers &

pesticides leads to bioaccumulation
and biomagnification

→ enters the food chain, causing health
issues. — Cancer, neurological disorders

(iv) runoff also leads to inefficient
use of resources, overall loss of
productivity.

measures to ^{mitigate} impact of runoff

(i) precision agriculture through
optimal application of fertilisers,
pesticides

(ii) Nano-urea & Nano-DAP for
efficiency

(iii) micro-irrigation can reduce
runoff

(iv) organic farming & ZBNF
can eliminate the application
of synthetic fertilisers,

(v) Neem Coated leaf & other methods to aid absorption — reduce runoff.

(vi) Treatment of water sources to mitigate impact of runoff.

So, there is an urgent need to reduce, optimise the use of fertilisers, pesticides, as also the possibility of runoff to prevent pollution.

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 दृष्टि में नहीं लिखना चाहिए
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15

The Himalayan States are increasingly vulnerable to a host of disasters such as landslides, cloud bursts, glacial lake outbursts, made worse by unbridled human intervention and tourism.

measures to prevent

rising spectre of man-made disasters due to influx of tourists

(i) landslides have become frequent due to deforestation to construct holiday homes, resorts on hill slopes

g- Josimath subsidence happened due to excess presence of tourist topfall; failure to adhere to m.c. michra guidelines on building.

(ii) the pollution due to rising footfall has led to increased occurrence of cloudburst (due to hygroscopic condensation) and resultant floods (Kedarnath - 2013)

(iii) the massive waste generated (plastic) has resulted in alteration of soil quality, seepage, which further results in lithological instability.

measures to prevent such disasters

(i) adopt M.C. Mishra guidelines on construction

(ii) adopt green tourism principles

→ restrict use of plastic

→ create zero-vehicle zones

(iii) reduce tourist footfall per

season through staggering

codes for hotel occupancy

rates.

(iv) encourage local population to take pride in pristine environments

(v) stabilise hill slopes by injecting stabilising agents; deep soil mixing; prevent groundwater over use.

So, the Himalayan States need to rein in runaway growth in tourism to protect their pristine landscapes.

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 हिसाब में नहीं लिखना चाहिए
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Superconductors are elements or compounds that can conduct electricity without any resistance.

Superconductors - innovation in S&T

- (i) in electricity conductivity - to reduce transmission losses
- (ii) use in radio diagnosis - MRI
- (iii) in discovery, invention of new compounds
- (iv) Nano research - creation of lattice structures that can hold shape
- (v) Cryogenic research
- (vi) Magnetic levitation will revolutionise transportation

Challenges

→ Superconductivity only at extremely low temperature

→ ~~now~~ natural superconductors found yet-

→ Research on superconductor riddled with data issues, fabricated results.

So, research on superconductors and connected fields will help us in a wave of futuristic applications that will yield efficiency.

उम्मीदवारों को इस हार्डिप में नहीं लिखना चाहिए
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उम्मीदवारों को
इस हिसाब में
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VisionIAS

18.

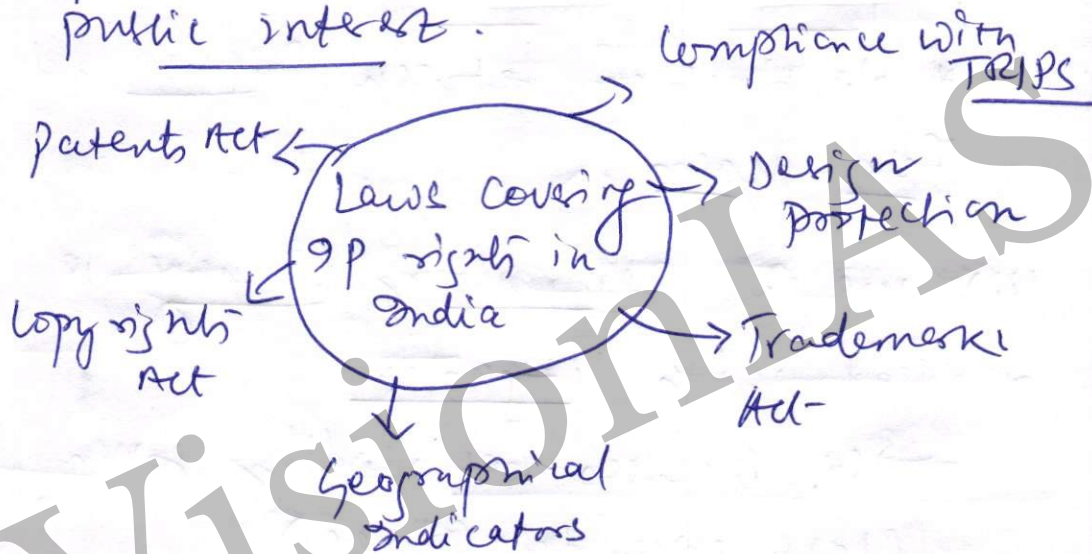
यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तार वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

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

15

India enjoys a robust IP framework that offers incentives to innovators and creators of novel products & processes, while upholding public interest.



Challenges that hamper Commercialisation of IPRs in India

Enforcement

(i) Piracy of creative content -
Films, music is rampant -

(ii) use of illegal sites that host -

Pirated content - (eg - libgen, SciHub)

(iii) lack of police awareness about -
IP rights, laws and criminal obligations

→
Regulatory

(i) lack of clarity on fair use of
IP protected products

* distinction between fair use and
Fair access.

(ii) use of compulsory licensing is
riddled with litigation

→ so, licenses not readily given
(last given for Gilead)

(iii) rising use of AI, LLM raises
questions regarding the nature of
copyrights owned by machine

Administrative

(i) slow patent grant process

→ china, US award patents
in multiple

(ii) frequent objections raised

(iii) lack of recognition of utility
patents.

Steps taken
& way
forward

→ recent changes to patent
rules to streamline
grant-

→ handholding of Startups

→ over 1,00,000 patents
granted in 2023

→ the rise of GIC (Global
Capability Centre) & the
ARI&F can bolster
IP creation, protection.

It is important that
India create a robust
mechanism to protect IP
rights to preserve the flow
of capital & to incentivise
innovation.

19.

एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों में दीजिए)

Keeping in view the challenges in creating integrated theatre commands, examine how the theaterisation of commands can lead to greater integration and rationalisation of manpower and resources among the three services. (Answer in 250 words)

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The creation of integrated theatre commands has been pending for a long time, since the Kargil review committee recommendations.

An integrated theatre Command (ITC) seeks to combine the 3 ~~as~~ services under a single command in a defined geographical area.

Challenges in creating ITCs

- (i) different - operational cultures of the 3 services
- (ii) issues with regard to Command leadership - who will lead, (army, navy, or air?)

(iii) the geographical extent of the country doesn't permit too many ITCs.

(iv) lack of an overarching national security strategy prevents the formulation of ITCs.

Theorisation — Benefits

(i) enable quick mobilisation in the wake of conflict.

(ii) synergy between forces — air support along the continental borders & in the high sea

(iii) will enable integrated decision- making, better allocation of resources amongst the tri- services

(iv) deep integration of technology

So, while ITC faces many challenges, its time has come to enable a more holistic defence of India's physical, digital borders.

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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)

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Border villages are the concrete manifestation of a country's territorial claims and sovereignty.

Need to treat border villages as 1st villages, geographically & in terms of facilities

(i) to prevent outmigration, need to provide amenities, education, health

(ii) to bolster a sense of citizenship, participation, integration.

(iii) to pre-empt enemy states from taking over contested land
eg - China's Xiaokang villages
in border areas

(iv) to induce military-civilian cooperation, trust.

(v) to build infrastructure that enables military logistics.

Measures taken

(i) Vibrant Village Programme to develop villages along the Chinese border

(ii) Army's outreach (operation Sadhavana) to create trust.

(iii) Village defence groups in J&K to promote immediate defence.

So, the development of the border villages is key to promoting border & national security.

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