



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. : 00181996

अभ्यर्थी का नाम/Name of Student : DAMANPREET ARORA

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

25.08.2024

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

केंद्र

Centre

CHANDIGARH

[007]

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	<p style="text-align: center;">महत्वपूर्ण अनुदेश</p> <p>उम्मीदवारों को नीचे उल्लिखित निर्देश सावधानी से पढ़ लेने चाहिए। किसी भी निर्देश का उल्लंघन करने पर उम्मीदवारों को मिलने वाले अंकों में कटौती, उम्मीदवारी रद्द या आयोग के परवर्ती परीक्षाओं के लिए वर्जित करने इत्यादि के रूप में दण्डित किया जा सकता है।</p>	<p style="text-align: center;">Important Instructions</p> <p>Candidates should read the undermentioned instructions carefully. Violation of any of the following instructions may entail penalty in the form of deduction of marks, cancellation of candidature, debarment from further Examination of the Commission etc.</p>
1	<p>(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें।</p> <p>(ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पंजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।</p>	<p>(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates.</p> <p>(b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet</p>
2	<p>अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।</p>	<p>Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.</p>
3	<p>परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।</p>	<p>Do not make any direct/indirect appeal/threat to the examiner.</p>
4	<p>उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।</p>	<p>Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.</p>
5	<p>उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।</p>	<p>Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.</p>
6	<p>प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।</p>	<p>Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.</p>
7	<p>प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।</p>	<p>Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.</p>
8	<p>यदि आप अपने किसी उत्तर को रद्द करना चाहते हैं तो उसे पेन से काट दें तथा उस पर "रद्द" लिख दें, अन्यथा उसका मूल्यांकन किया जा सकता है।</p>	<p>If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.</p>

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
परीक्षक के हस्ताक्षर Signature of Examiner(s)	

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

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



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Time Allowed: **Three Hours**

अधिकतम अंक: 250
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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 हार्शिए में नहीं लिखना चाहिए, Candidates must not write on this margin

10

Food processing Industry contributes 8% to India's GDP and is growing at the rate of CAGR of 11.5%. (NitiBayog)

Rapid Growth leading to food safety challenges as

- ① High salt content (Eg) leading to blood pressure problems [WHO recommends low salt content]
- ② Low Quality Checks and adulteration
(Eg) Recently 12 spices banned and FSSAI checks flagged worry on packaged spices
- ③ Profits over people (Eg) Adulteration of milk products
- ④ High Saturated and Unsaturated fats
(Eg) It increases bad cholesterol [LDL]
- ⑤ Lower adherence to food safety standards (Eg) 75% of FPIs are Informal

⑥ Focus on packaging rather than increasing shelf life (Eg) Expiry dates prolonged as flagged by Industry recently.

⑦ leading to 'Double burden' of nutrition
(Eg) Undernutrition + obesity
(20% of people in India in obese category)

⑧ leading to Food Swamps [because of high fatty foods] resulting in heart diseases (Eg) rise in heart attacks in India

⑨ lack of inspections by Food Safety Officers
(Eg) Bakery culture

⑩ Browned food more preferred in Urban areas (Eg) culture of tortilla and frozen vegetables

Way forward :- ① Eat right India and fit India movement to adhere to total Saturated fats less than 2%.

② Quality checks and collaboration with Organic farmers (Eg) Organic Jams,

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)

With 99.2% coverage of e-line of scale machines, Fair Price shops serve 80 crore population under FPS & PDS.

Transformation of FPS an evolving process because

- ① covers 66% of population (75% rural and 50% urban)
- ② Procurement based on 'FIFO' model (First in First Out)
- ③ Digitisation has taken place (Eg) earlier problem of Ghost Beneficiaries
- ④ Evolved from IMPDS [Partibility for migrants] to SMART-PDS.
- ⑤ Aadhar linked ration card to lower fake beneficiaries

6) Important role in reducing corruption

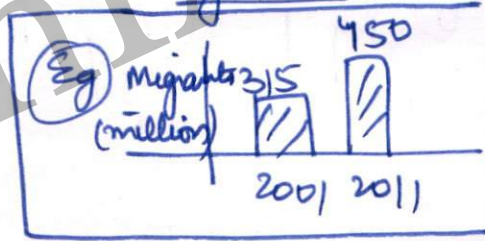
(Eg) Increased Accountability

7) GPS tracking of vehicles which reach the FPS (use of technology in e-governance)

8) Important in increasing India's indicators

(Eg) Stunting reduced to 35%. [NFHS-5]
(Earlier 38%)

9) Linkage of FPS helps in migrants to interoperability benefits



More needs to be included

1) Using block chain technology to better target and reduce corruption

2) 'Food coupons' can be thought of as suggested by Shantakumar Committee

3) Also, 'Food Security' is ensured through reduced food wastage

Thus, SDG-2 [Zero Hunger] could be

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

India is the 3rd largest startup Ecosystem in the world with 114 unicorns and Agriculture currently includes 46% of workforce contributing 18% to GDP [Niti Aayog]

Agri Tech Startups helping in farm productivity

- ① By providing Agriculture research, Development and Extension services
(Eg) FRUITS portal of Kwaal for farmers
- ② By using technology to increase efficiency (Eg) precision farming through Drip, Sprinkler irrigation.
- ③ Helping invest in storage [eg] recent Primary Agriculture Credit Society largest storage farm policy planned through it]

④ Reducing Underemployment in Agriculture

(Eg) Agri tech startups can help create

Jobs [3.2]. unemployment as per Economic Survey 2024]

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

Agri tech startups can help in market access by

① Increasing forward linkage with markets

(Eg) e-Negotiable warehouse receipts

② Increasing upstream, downstream linkage through technological intervention

(Eg) reducing transportation time

③ Reducing reliance on loan sharks

(Eg) Ashitva system in Punjab [15 farmers suicide daily average]

④ Green farmers (Eg) PM KUSUM and Suryodaya Yojana, AGRIPRENEURS

Thus, Agri Startups can help in farmers becoming 'Ujja data' through Energy Synergy apart from 'Amnadaata'

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)

Digitization of land records under
SVAMITVA has currently crossed 90%
mark, where 'land records' are the
prime source of conflict in India since
ages.

of land records
Role of Digitization in Implementation
of Land Reforms by

- ① Better Access to loans (Eg) Blue Adhar
- ② Reduce land disputes (Eg) 25% disputes
with Supreme Court and 61% overall
are land related disputes.
- ③ Can better lead to tenancy reforms
(Eg) Reduced Exploitation by middle
men (50% farmers under debt as per
Niti Dayog).

④ Steps in reducing corruption and bribe by online drone monitoring

(Eg) Digital parcel land recognition program

⑤ Aid Government officials too for better speedy awards (Eg) land record modernisation helping sub registrars in Uttar Pradesh

⑥ Redistribution of wealth through fair entitlement

⑦ Technology aided help for different

crops suitable for their land (Eg) KISAN portal and Rabi Goshthi Samvaad for direct dialogue

⑧ Reduction in problem of dual or double registries for same land

Challenges → low farmer literacy and awareness
→ farm disputes (pending cases)
→ case clearance rate only 89% in India

Thus, technology aided land reforms can

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

India's 68% population is working age [15-68 years] with demographic dividend turning into demographic bomb and unemployment at 3.2%. As per Economic Survey 2024 with need of 78 lakh jobs creation per annum.

Need to adopt manufacturing led growth model because 0

- ① Premature Deindustrialisation
(Arvind Subramanian, former CEA)
- ② Service led growth model (Eg) Service sector contributes 54% of GDP employing 32% population.
- ③ Unemployment demanding labour intensive Growth model (Eg) Textile, leather

(X) lower skills (eg) 57. Indians formally
skilled [90% in South Korea]

(B) fear of middle income trap (Eg)
Swift shift from Agriculture to Service
mode

(C) More than 85% MSME are in informal
sector thus need formalisation.

Manufacturing led growth can be achieved by

(1) Promoting textile and labour industry

(Eg) these have high employment
elasticity

(2) Investing in Network products through
Global Value Chains [Economic Survey 2020]

(3) need to accommodate 12 million workforce
entering each year (Eg) PM's 2 lakh crore
package of Internship in Budget 2024

Thus, labour intensive model is
necessary for \$5 trillion economy ~~and~~ by 2025

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

India's 30% population live in coastal areas, with India comprising 7517 km of coastline.

Growing natural hazards from climate change

- ① → rising sea level [3.1 mm/year (NASA)]
- ② → Increased Cyclones due to IOD and El Niño, La Niña events
- ③ → collapse of infrastructure due to spin off effects (Eg) salinisation in coastal areas
- ④ → loss to food security (Eg) diying fishes and phytoplankton due to Ocean Acidification

Resilience of India coastal communities can be strengthened by

- ① Disaster Resilient Infrastructure (Eg)

CDRI and IRIS of India

- ② Climate Resilient Crops (Eg) Millets also known as Khai Anna
- ③ Investment in Desalination technologies (Eg) like Perth in Australia
- ④ Circular Economy (Eg) Pro People Planet of Mission Life
- ⑤ Sustainable Blue Economy (Eg) treatment of Industrial waste before discharge
- ⑥ Integration of mangrove + shrimp culture (Eg) in West Bengal
- ⑦ Mitigation, preparedness to disasters through Early warning systems
- ⑧ Losses Encroachments and Shifting Vulnerables to other places (Eg) recent shift by Kiribati's town to Fiji

Inspiration can be taken from Carbon neutral Gram Meenagadi for Tree Bank model to increase resilience

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

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

Green Credit Program announced by India at CoP 28 UAE is India's way of tackling climate change through carbon management and balancing with Sustainable Development Goals [SDG-12] (Sustainable Production and Consumption)

Promote a sustainable environment by :-

① Credit enablement framework to call in private sector (Eg) Stakeholder and Bottom up approach

② Technological Integration (Eg) using Innovation by Grass roots like Tree Bank model of Meerangadi, Odanthurai village of TN providing Energy to entire Tamil Nadu City.

③ Effective and actual implementation
of Common but Differentiated Responsibility
and Managed Capabilities

④ Increase in Afforestation, Reforestation

(Eg) 24 million tree target under India's
commitment.

Concerns About its Implementation :-

① Open Ended, & thus difficult to
monitor

② From State led model to consumer
and private sector led model

③ Shifting of responsibilities

④ Can lead to Greenwashing (Eg) Amazon
Logistics manufacture brand (Amazon) has
more Credit Green rating than EV
manufacturing company.

Thus, what is needed is Just transition
and Phasing down of coal for Equitable

Climate Justice

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 India's GPS model, let country in Global South be able to have so as compared to GPS of west.

- Need for NavIC :-
- ① for India's security diversification (Eg) Microsoft black screen death showed danger of reliance on one single system.
 - ② Combined with GAGAN can give India a strategic advantage.
 - ③ Net security provider in the Indian Ocean Region (Eg) South Asia and SAGAR doctrine].
 - ④ Spin off benefits like better control over strategic sectors like near DAE and LOC [fear of incursions, infiltrations].

from Pakistan.]

⑤ It can further advance India's share
in Space Economy (currently only 2%)

through increased private sector participation
due to confidence in India's capability

⑥ Atmanirbhar Bharat and Defence
Modernisation (eg) NAVIC can aid it security
of borders as per our convenience

⑦ Agriculture benefits as a better monitoring
and Disaster Management through
Early warning system (eg) India's 7517 km
coastline vulnerable to tropical cyclones.

⑧ Data localisation and prevention of
monopolisation by west (eg) UPI displaced
VISA, Mastercard importance in India.

Thus, India is too soon to become
a 'Viksit Bharat' and PM's call for 'Local for
local' and 'Make in India' can better be
achieved through NAVIC.

9.

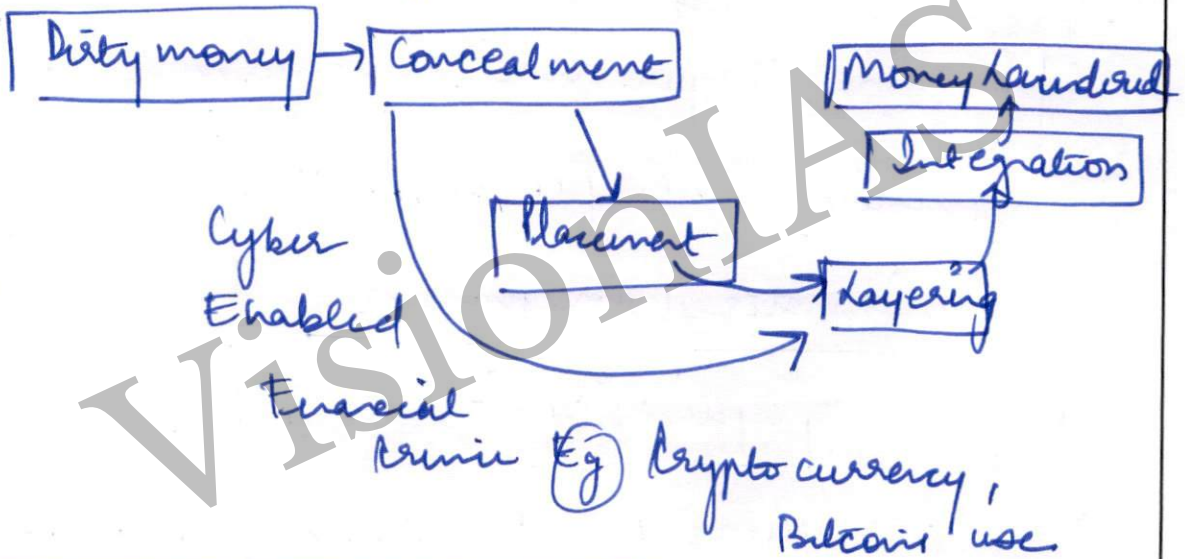
साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

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 ह्रासिए में नहीं लिखना चाहिए - Candidates must not write on this margin

Money laundering is concealing the dirty money and increase Cyber Enabled financial crime has led to Cyber aided money laundering conundrum



Cyber-Enabled Financial Crime as emerged as new frontier of money laundering through :-

- ① Deep web and Dark space through Artificial neural networks (Eg) Cyber Espionage, Akira Attack

(2) Bypass traditional Security Checks through Physical monitoring (Eg) use of Cryptocurrency and money laundering like wezix attack

(3) Loss to GDP and tax evasion (Eg) Decentralised ledger technology leads to Encrypted messages

Government can address it by :- (1) Cyber monitoring methods (Eg) CERT-In and use of methods like Byzantine

(2) Monitoring Social Media (Eg) Operation Pigeon of Kerala

(3) Subhash Chandra Garg Committee recommended for banning Cryptocurrency as it is increasing Money laundering

(4) Use of Blockchain like in Brazil for better monitoring of such methods.

Thus, Money laundering must be countered through technology and Modernisation of tracking methods

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

Defence Sector has recently crossed \$50 billion production in 2023 fiscal year and is thus moving towards Modernisation and Technological reforms.

Need for Technological Absorption

- ① Emergence of hybrid warfare
(Eg) 5th Dimension of warfare - cyberspace
- ② To counter threats of two and a half frontiers (Eg) Increase use of cyber espionage like UIADIA data hack, ASIMs attack.
- ③ For Integration of three faces
(Eg) Gen V. Pant talks about 'Service Parochialism' thus pushes for CDS, Deputy CDS, Vice CDS

① Integrated Theatre Commands and Tri° Service Command

② Eg USA has 11 theatre commands and
China has 5.

③ Need to be Anticipatory rather than
responsive to threats (Eg) Offensive-
Defensive capability.

Challenges → ① less than 2% of GDP
spent on Defence [\$83 billion expenditure
as compared to \$912 billion of USA]

② 80% expenditure to pension and salary
expenses and only 20% to Defence
Capital Expenditure

③ Technological upgrade requires
collaboration with private sector, but
Druid Subramanian talks about Stagnant
Capitalism.

Thus, there is a need to expand
technological capabilities, because the best
way to avoid war, is to be prepared
for it.

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

North Eastern Region is known as the Jewel land comprised of 7 sister states and is the keystone of India's Act East Policy [acts as a link]

Issues faced in development of trade and industries in NER

- ① Lack of road and air connectivity
 - ② major Chennai's neck, Siliguri corridor
- ② porous borders (eg) Myanmar, Bangladesh immigration issues (Recent 14th August, 2024 Government collapse)
- ③ Inner conflicts (eg) between tribes such as Kuki-Naga, Kuki Meitei conflict

- 4) Inter State border disputes
eg Assam Meghalaya, Assam Arunachal
- 5) hilly and Difficult terrain (eg) high rainfall in Assam recently
- 6) Prevalence of dissatisfaction and growing influence of ULFA (Assam), NSCN (IM) which are leading to false narrative against the Government.
- 7) Insurgency such as Manipur conflict, Basm refugees and Maoist attacks
- 8) Disarmament with AFSPA
- 9) Inner line permit (eg) also known as Quasi-visa (even for Indians required)

Measures taken to tackle the Issue

- 1) PM-DeVINE → for social and economic infrastructure development in the north eastern region.

② North East Infrastructure linkage
and road connectivity scheme (eg)
by DONER (Ministry and Department)

③ Collaboration with Myanmar

(Eg) ① Phi Tiddim Project

② India Myanmar Thailand Trilateral
Highway (from Moroh to Maesot)

③ Kaladan Multimode Project

④ Achaura - Agartala Railway Link

④ Aspirational Districts and Aspirational
Blocks Coverage (eg) [Reaching the
last mile of Budget 2023]

⑤ Purvodaya Yojana for Infrastructure
creation in North Eastern India, which
can better link with NEER.

Thus, North East Infrastructure development
is vital for India's Inclusive development
model

12.

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

In the era of climate change and growing water scarcity, how can micro-irrigation systems contribute to sustainable agricultural practices in India? (Answer in 250 words) 15

India has 18% of world's population and only 4% of water resources [Niti Dayog] and according to NASA India's ground water table is declining at the rate of 0.3 m/year

Climate Change and Water Scarcity era

① UNSG Antonio Guterres called transition already happening from 'Global warming' to 'Global Boiling'

(Eg) Earth already 1.1°C warmer than pre industrial level 0

② Niti Dayog's Composite Water management plan also called that 70% of India's water resources under threat and it will affect 600 million people.

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

③ Ocean Acidification and Ocean Warming

(Eg) Oceans absorb 90% of excess heat

(As per IPCC 6th Assessment Report)

④ Agriculture is responsible for 90% of Ground water Extraction in India

⑤ Threat to Food Security (Eg) Impact would be majorly on food ~~producing~~ producing countries.

⑥ Global South and SIDS at disadvantage

Micro Irrigation can contribute to Sustainable Irrigation practices by

① Precision Targeting (Eg) Sprinkler Irrigation

can reduce water utilisation than flood irrigation.

② Fertigation (Eg) also held by Economic Survey 2017 through Drip Irrigation

(3) Saving of financial capital and expenditure
(Eg) Micro Irrigation fund of Rs 5000 crore

(4) Reduced Salinization and Alkalinization

(Eg) India's ratio of fertilizer is 8:3:1 (N:P:K)
(recommended \rightarrow 4:2:1)

(5) lesser runoff, and thus reduced
reduced eutrophication (Eg) Marine life
would be safe like phytoplankton

(6) Mindful consumption against mindless
production (Eg) Mission Life, Pro Planet
People

(7) Technologically Aided Agriculture

(Eg) Extension services recommended by
Professor Ashok Gulati .

Thus UNSDG-14 also talks about judicious
water use, and it can be done by
use of Circular Economy like Integrated Farming,
Crop diversification and Millit production

which use minimal water .

13.

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

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

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

India's Railways currently contribute to 26% of freight transportation and target is to double it by 2030, with a minimum target of 46%-47%. (Niti Aayog)

Issues related to freight transportation by Railways and its low share

- ① Bulk freight transport by roadways
(Eg) more than 70% by roads
- ② High cost of road transportation
(Rs 3 per tonne, while Railways 1.5 per tonne)
- ③ Last mile connectivity access provided by roadways
- ④ Lack of multi modal transport hubs
like only few like Varanasi and Sahibganj

5) Logistical transportation cost high
(currently 14-15%) target to reduce it
to 9% in next 5 years (Transport Minister
Nitin Gadkari)

6) AT&C losses high in railways at 11%.

Strategies that can be adopted :-

- 1) Improving last mile connectivity
through multi modal transports like
Rail - Road - Air linkage (Eg) Varanasi
- 2) Utilisation of Inland waterways (Eg)
In France .
- 3) Reducing operating ratio in railways
(currently at 98.4% {Economic survey 2017})
- 4) Increasing PPP in freight transport
(Eg) Parkes and moves, Xpressbees,
Blue Dart etc .
- 5) Reduction in logistical cost (Eg)

Logistics Policy, currently ~~is~~ India at
38th position (improved significantly)

- (6) Integrating Bharatmala, Sagarmala,
Parvati Mala.
- (7) Uniformity in Gauges (eg) Narrow gauge
in hilly areas is required but a
Standard Gauge can be adopted in plains
- (8) Kakodkar Committee recommended to
transport freight through railways
gives highest dividend (bulk transport
at lesser cost)
- (9) Rail Sanatshakti and improving
operating cost through technological
intervention
- (10) National Rail Plan can be integrated
with National Infrastructure Pipeline for
better ease of transport.

Thus, railways are one of the cheapest
mode of freight transport, thus
their utilisation is desirable.

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
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15

India has jumped from 76 position to 67th position in World Economic Forum's Global Energy transition Index [from 2020 to 2023] and is currently the 3rd largest Renewable Energy market globally.

India, a frontrunner in Global Renewable Energy transition because :- can be seen from

① Target of 500 GW renewable energy installation [205 GW achieved recently]

- 86 GW contributed by solar currently
- 45 GW by wind energy

② 3rd position in wind energy installation

③ 4th position Globally in solar energy transition.

Factors that have enabled are :-

- ① Policy push (Eg) National Action Plan for Climate Change.
- ② Competitive atmosphere (Eg) Renewable Energy Credits, Reform, Auction, Trade [PATs], Green Credit Network
- ③ Promotion of Natural Energy transition rather than Climate Colonialism of west (Eg) Mission Life vs Carbon Credit and Carbon Market [Article 6 of Paris Agreement]
- ④ Subsidies and Government Financial help to bottom up approach
(Eg) PM KUSUM [Solar water pump]
PM Suryodaya and Surya Ghar Bijli Yojana.

6) Priority Sector lending status to Renewable Energy Sector

7) Production linked Incentives (eg) 30 by 30 target to Electric Vehicles (FAME & FAME 2.0)

8) Green hydrogen policy (eg) 5 million tonne production target by 2030

9) Global push for collaboration (eg)

- Global Biofuel Alliance pushed at G20 2023
- International Solar Alliance

10) Rural Economy and Decentralization

(eg) Edamthurai Village of Tamil Nadu

is a Green Village which supplies electricity to Tamil Nadu City

Thus, Decentralization, Decarbonization,

Digitalisation have pushed India to be

the 3rd largest Energy destination in Renewable Energy.

15.

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

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

15

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

India's Fertilisers and Pesticides ratio
of usage is 8:13:1 for N:P:K, however
recommended is 4:2:1.

Thus, Agriculture runoff containing fertilisers, pesticides contribute to Environmental ^{pollution} by

- ① Eutrophication in water bodies
(eg) nitrogenous and phosphorous pollution
leads to nutrient enrichment.
- ② Algal Blooms in water bodies (eg) Red tides in lakes.
- ③ Anoxic zones due to reduced Dissolved Oxygen and increased B.O.D and C.O.D in water bodies.

- ① Ocean Acidification and killing of phytoplankton
- ② Fishes population depletes because of increase in their metabolic Activity.
- ③ Increased Alkalinization in agricultural fields (Eg) leads to soil infertility.
- ④ Increased Salinization and capillary action leading to soil becoming acid (Eg) fields in Punjab, Haryana due to excessive HYV seeds and increased fertiliser use.
- ⑤ Air pollution due to release of methane (Agriculture major producer of methane emissions (CH₄))
- ⑥ Soil Degradation and Desertification (Eg) ISRO land atlas says that 30% of land Degraded.
- ⑩ Environmental and harm to humans because high fertiliser use can result in food being hazardous for use because of

bioaccumulation, biomagnification in food chain.

Measures to mitigate the Impact :-

- ① Use of fertigation (Economic Survey 2017) which is Precision Irrigation (eg) through Drip Irrigation application of fertiliser
- ② Nano Urea, Gold urea to reduce the quantity intake
- ③ Organic farming (eg) 44 lakh organic farmers in India, SIKKIM model
- ④ Zero Budget Natural Farming [Subhas Palitkar]
- ⑤ Crop rotation and Barbon Fertilisation (multiple crops (eg) Crop Diversification)
- ⑥ Crops such as Millets can be used to diversify from Rice, wheat (water guzzling)
- ⑦ Utilising other crops in PDS, MDM (eg) Millet, Sorghum etc.

Thus, PM PANNAM also aims at

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
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15

Himalayan Glaciers are receding

at the rate of 14m-15m per decade as per report by NASA, and thus Hindukush region as whole suffers from breaching Ecological Carrying Capacity.

Growing influx of tourists leading to man made disasters :-

- ① High footprint leading to deterioration of snow quality (eg) Plastic and Garbage on himalayan slopes
- ② Anthropological use has led to infrastructural development in ecological susceptible zone (eg) Silkyara tunnel collapse
- ③ Increased GLOF Glacial Lake Outburst

floods (eg) Sikkim 2024, Uttarakhand 2013

Measures that can be implemented to prevent such disasters :-

- ① Prevention - Mitigation - Preparedness
(eg) NDMA strategy of zone hazard mapping in himalayan ecosystem.
- ② Sustainable Tourism Fee (eg) done by Bhutan.
- ③ Limiting the onset of luggage and completely banning plastic (eg) Himachal Pradesh banned it much before.
- ④ Environmental Impact Assessment
(eg) Gadgil committee recommended for Ecotone in Western Ghats.
- ⑤ Awareness Generation (eg) sensitization and levy of fee.
- ⑥ National Action Plan for Climate Change

needs to be implemented

उम्मीदवारों को
इस हशिप में
नहीं लिखना
चाहिए
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write on
this margin

Measures to promote Sustainable Tourism

- ① Homestays to lesser interference by
risking big hotel projects as it can
increase source of earning.
- ② Utilisation of Tribal arts and promotion
of sustainable prod. products in markets
- ③ tourist fee and fine on those spreading
Garbage, plastics -
- ④ Permits can be thought of as it is being
done currently by Iceland.
- ⑤ Mitigation measures through marking
Eco Sensitive Zones and prohibiting
entry in such zones.

Thus, the 3rd Pole must be protected
by mission life and bio planet people
as Sustainable Development is Sine Qua
Non for Himalaya Ecosystem.

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

Superconductors are the materials operatable at extremely low temperatures which offer negligible resistance to the current flowing thus increasing Efficiency.

Superconductors fuel innovation in diverse sectors by

- ① Industrial electricity generated before working
(eg) reduces time, energy, finance thus providing innovation
- ② Competitive Edge (eg) technological advancement
- ③ Now, room temperature possible

making superconductors have been
discovered successfully ○

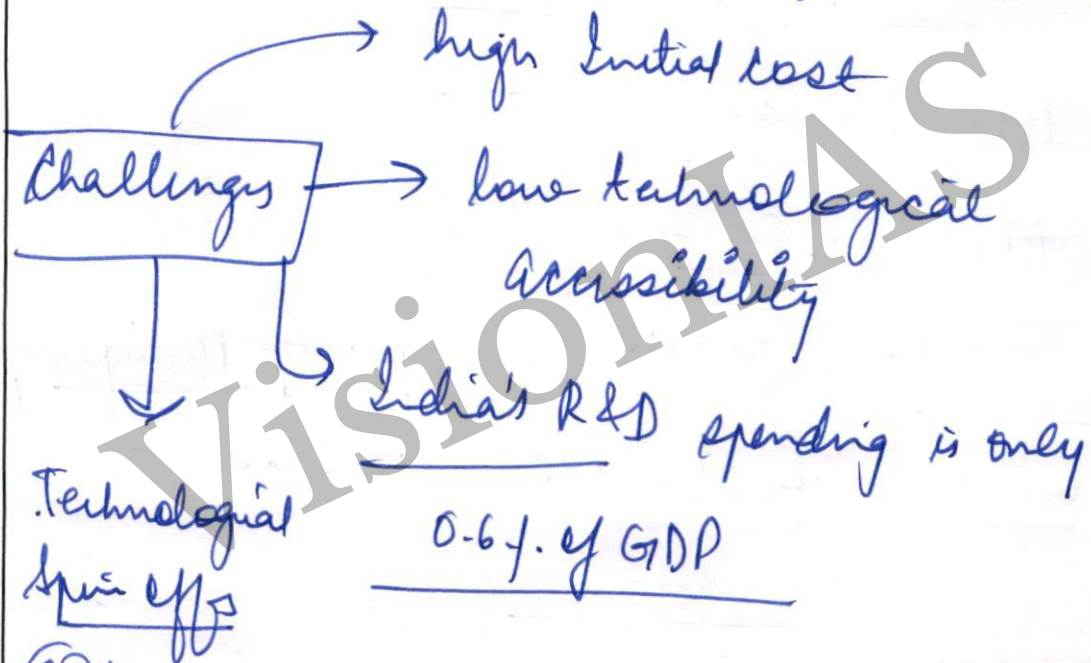
- ④ Faster Implementation (Eg) can address
problems of lag in communication
- ⑤ Space Sector ~~can~~ (eg) can be utilised
in International space stations, India's
upcoming Gaganyaan too
- ⑥ Medicinal Sector by faster surgical
operations as in Angioplasty, Plenoplasty
where time available is less
- ⑦ Robotic advancement (eg) Robotic
reaction and impulse like Humanoid
Robots need to use
- ⑧ Cryogenic Engines for faster
Efficiency, economy and Effectiveness

(9) Defence manufacturing → (eg)

emerging hybrid warfare and 5th

Dimension warfare like cyberspace

(10) Integration with SONAR, RADAR for fast communication and feedback loops



(eg) Unintended consequences with respect to Safety.

Thus, super conductors are helpful in utilising 'Economics of Scale' and faster use in transportation, industry can push 4th Industrial Revolution.

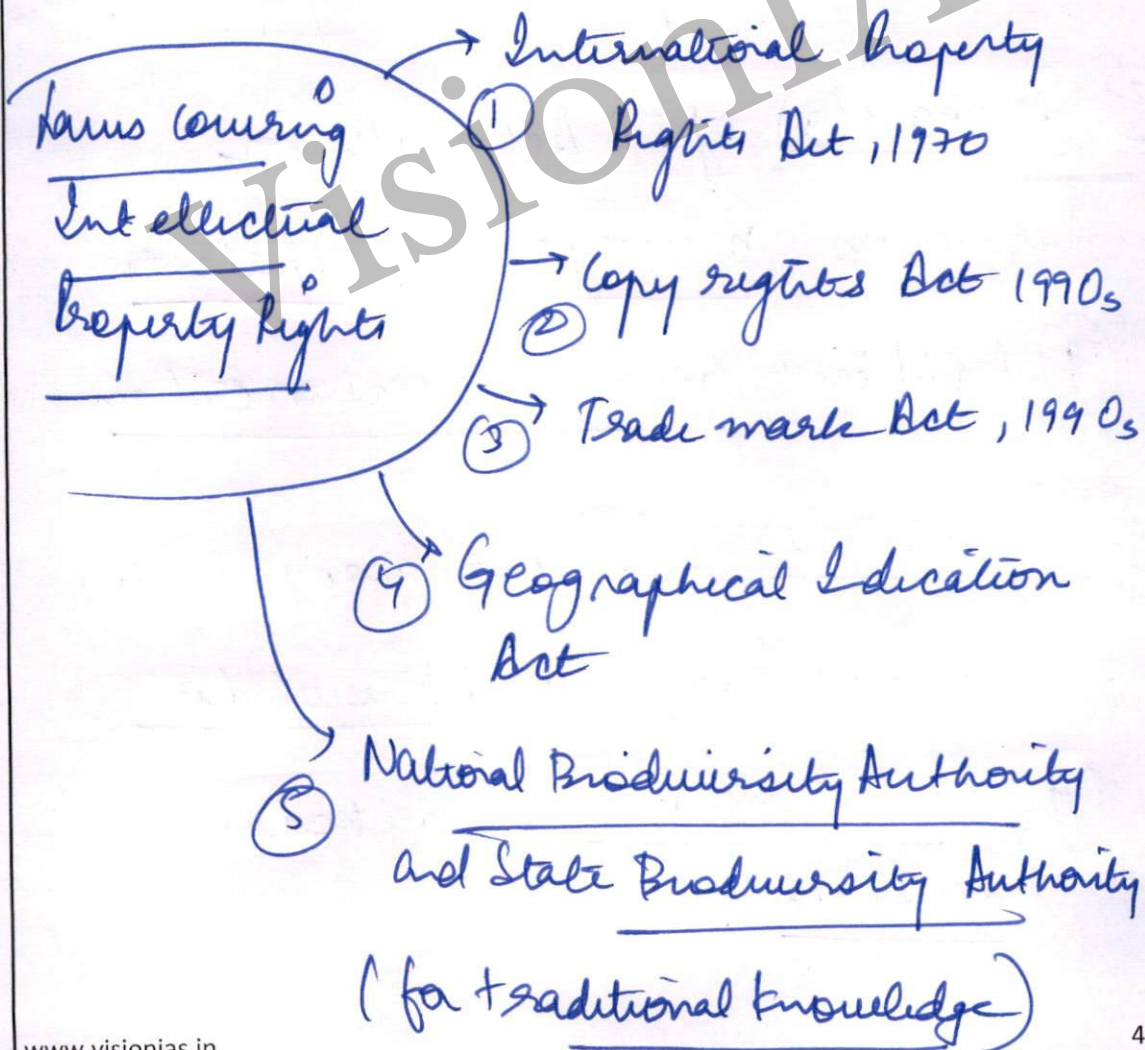
18.

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)

15

India stands at 40th position in
World Intellectual Property Rights Index by
WIPO out of 170 countries, thus remarking
that India is the 7th largest patent
filer in the world.



Numerous Enforcements hampers ~~commercial~~
commercialisation because

① Section 84 of IPR Act argues for compulsory licensing which many companies and even TRIPS, WTO are not in favour of

(Eg) it demotivates hardwork of private company like Rambaxy episode

② Section 3 (a) of IP Act calls for restriction on evergreening of patents

(Eg) significant new innovations criteria

③ Section 3 (d) of IP Act also prevents the patent for traditional knowledge

(Eg) Agriculture process, methods, seeds etc

- (4) disputes between countries (Eg) it is said
that India-USA trade relations have been
hijacked by IPR companies
- (5) Favours towards traditional knowledge
of farmers (Eg) MONSANTO potato ~~for~~
farmers case (Peprico).
- (6) Vouch for Access and Benefit Sharing
as per Nagoya Protocol.

Way forward :- (1) Traditional knowledge
Digital library and approvals by NBAs
and SBAs under Biodiversity Act.

- (2) Recent WIPO treaty on protecting
traditional has been success for India's
IPR push.
- (3) Need for adherence to Cartegena
Protocol [LIMOs] and Nagoya protocol

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)

Recent push for setting up Integrated Theatre commands based on Geographical theatres like Eastern (China), Western (Pakistan) and Maritime can lead to Integration of the three services and better coordination.

Challenges of theaterisation :-

- ① Criticism by Harsh V. Pant as Services head are concerned with 'Service Parochialism' (concern for their services)
- ② Existing command at Andaman and Nicobar suffer from consensus issues (Eg) Indian Airforce's concern of Domination of Army.

③ Lesser Equipments by IAF and Navy and
domination by India Army .

④ can lead to Insecurity among neighbours

(eg) China already has 5, and USA 11

Integrated Commands, it can also

result in ~~its~~ Balance of Power (in favour
of India) but Insecurity dilemma to neighbours

⑤ Only 2% of GDP allocated for Defence

\$83 billion expenditure (USA → \$912 billion
China → \$293 billion)

It can lead to Greater Integration
and Rationalisation of Manpower by

① Integration and coordination through
Chief of Defence Staff .

② Better Geographical management

(eg) recent Jammu Attacks occurred
because Army was diverted to
Indo - China border because of

2020 Graduan Clashes

- ③ Better availability and preparedness of manpower (Eg) Andaman tri Service Commando
- ④ SAGAR and net security provider in Indian Ocean Regions.
- ⑤ Recent push for Inter Service Organisation is also the step towards coordination ITC.
- ⑥ New post creation ~~pro~~ proposed of Deputy CDS and Vice CDS.
- ⑦ Can actualize move on from Sunderji Doctrine to cold start Doctrine (more proactive)

thus, ITC can also be the progressive towards defence modernization with steps can be taken towards National Security Strategy

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

Prime Minister Narendra Modi in
his 2023 Independence Day speech invited
the Gram Sadak of Border Villages
calling them as not last, but 1st Village

Treating border villages as 1st Villages

- ① Effective guards for Infrastructure
and Defense (Eg) China Building dual
use Xiakong Village near China
Blutan Border
- ② can tackle the deradicalisation in the
region (Eg) Vibrant Village Program
- ③ Leads to 'last mile connectivity'
and Reaching the last mile (Budget 2022)

④ Can act as a 'Suchaki' (eg) Kantilya highlighted its importance against the neighbouring country which he called natural enemy)

⑤ Better 'Economical Integration' and 'Developmental Deficit' lackling can be the important defence strategy

⑥ Inclusive Growth and Strategic assets (eg) during Siachin war, there was need for Infrastructural connect)

⑦ Increased connectivity through Infrastructure like 'Atal tunnel'

⑧ Helistic modernisation and addressing Unemployment (eg) earlier Stone pelting in Jammu Kashmir

Key measures taken by Government

- ① Ukrant Village program
- ② Back of Villages Program
- ③ Operation Maa and Sadhbhavana
by Army
- ④ Unrining Hearts and Minds in
Jammu Kashmir through
Developmental & Infrastructural policies
- ⑤ Social Infrastructural Creation
(Eg) PM DeUINE
- ⑥ Need to utilise hydro Diplomacy
(Eg) 15,000 MW Dam against
60,000 MW Policy of China

Thus, A Development which reaches
the last mile is holistic Development

SPACE FOR ROUGH WORK

AL

VisionIAS