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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. : 01238931

अभ्यर्थी का नाम/Name of Student : TRILOK SINGH

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

ENGLISH

तारीख  
Date

25/08/2024

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

केंद्र  
Centre

VISIONIAS

LAL KOTHI JAIPUR

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

[Signature]

	<p style="text-align: center;"><b>महत्वपूर्ण अनुदेश</b></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;"><b>Important Instructions</b></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)		
<b>सकल योग (A+B) / GRAND TOTAL (A+B)</b>					



**सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)**

निर्धारित समय: तीन घंटे  
Time Allowed: **Three Hours**

अधिकतम अंक: 250  
Maximum Marks: **250**

**प्रश्न-पत्र संबंधी विशेष अनुदेश**

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

*Please read each of the following instructions carefully before attempting questions.*

There are **TWENTY** questions printed both in **HINDI** and in **ENGLISH**.

*All questions are compulsory.*

*The number of marks carried by a question/part is indicated against it.*

*Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one.*

*Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.*

*Keep the word limit indicated in the questions in mind.*

*Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.*

## EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1.

खाद्य प्रसंस्करण उद्योग का तीव्र विकास किस प्रकार भारत में खाद्य सुरक्षा संबंधी चुनौतियां उत्पन्न कर रहा है? (उत्तर 150 शब्दों में दीजिए)  
How is the rapid growth of the food processing industry leading to food safety challenges in India? (Answer in 150 words)

10

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

India's food processing industry is a sunrise industry with a CAGR of 22.1. It is expected to boost India's agricultural GDP.

Rapid growth of food processing industry

(1) Creation of FPOs and farmer unions through support from schemes like PM-SAMPADA and Agriculture infrastructure

- we fund (AIF)

(2) Local units created under one district one product (ODOP) (Red Rice of Uttarakhand; Kandh-anal turmeric)

(3) SNAs and role of corporate sector also fuelling growth.

## Leading to food safety challenges

(1) Using additives and pollutants in food. (a) Recent case of MDH and Nestle adulteration.

(2) Rapid growth of FPOs not accompanied with safety mechanisms → leads to flouting of norms at local FPOs

(3) Many FPOs not labelling proper info leading to allergens and health concerns in consumers.

Way ahead → FSSAI to play proactive role by promoting "Samprada Poshan Swasthya Tevan"

AGMARK by APEDA necessary for such products

Localised interventions like "Gudh Ke Lige Yuddh" of Rajasthan Government.

Safe and robust FPOs will

help achieve twin objectives of doubling farmer income and nutritional security

2.

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

Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

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

Fair Price shops are the backbone of the Public distribution system. They are defined as the "outlets to deliver grains to people" under National food security Act 2013. (NFSA)

FPS transformation is an evolving process

(1) Use of technology → The implementation of One Nation; One Ration Card (ONORC) scheme has led to use of e-POS machines

(2) Overhauling of infrastructure → The dilapidated structures of fair price shops is being improved.

(3) Renaming of FPS as "Jan Poshan Kendras"

to connect better with masses.

- (4) Decentralization of FPS in remote areas to achieve the goal of Accessibility for food security.

Why FPS are being transformed

- (1) Achieve the SDG 2 (No Hunger) goal.
- (2) Improve the accessibility; affordability and quality in food grains delivery.
- (3) Improve nutritional status as NFHS-5 has highlighted (Stunting - 35%; Wasting - 12%; Underweight - 13.2%)

The Union and States need to follow the Shanta Kumar Committee recommendation and best practices (like e-upajyan) of Madhya Pradesh to aid FPS transformation.

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

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

10

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

## Economic Survey of India

highlighted the role of Agri-tech startups in enhancing the farmers' access to technology and income increase.

Startups helping in enhancing farm productivity

(1) Provide real-time info and scientific advise to help increase yield and productivity.  
(Eg) → Stellabs app provides field; climate information to farmers.

(2) Help in livestock management and enhancement of products.

(Eg) → A Startup has launched chips which are attached to livestock's ears and help in cattle farm management.

(3) Provide Agro-advise in local languages to farmers Eg - E-Sagu app in Telangana.

(4) It also gives integrated information about government schemes and farm management Eg - ITC Claupal portal.

(5) Help in farm machinery renting. eg, Chetigaadi app.

### Role of Startups in enhancing market access

(1) They help take the products directly from farm to plate eg, Ninjakaart app allows sale of produce.

(2) Help in providing niche services and targeted customers eg, A2 Milk app provides Gir cow products.

(3) Help in government connect and better price discovery.

The Startup culture has helped Agriculturalists become Agripreneurs

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 हार्शिए में नही लिखना चाहिए  
Candidate must not write on this margin

The SVAMITVA scheme launched on 24<sup>th</sup> April 2020 is revolutionizing the digitalization of land records and pioneering Land Reforms 2.0.

Role of digitization of records in land reforms

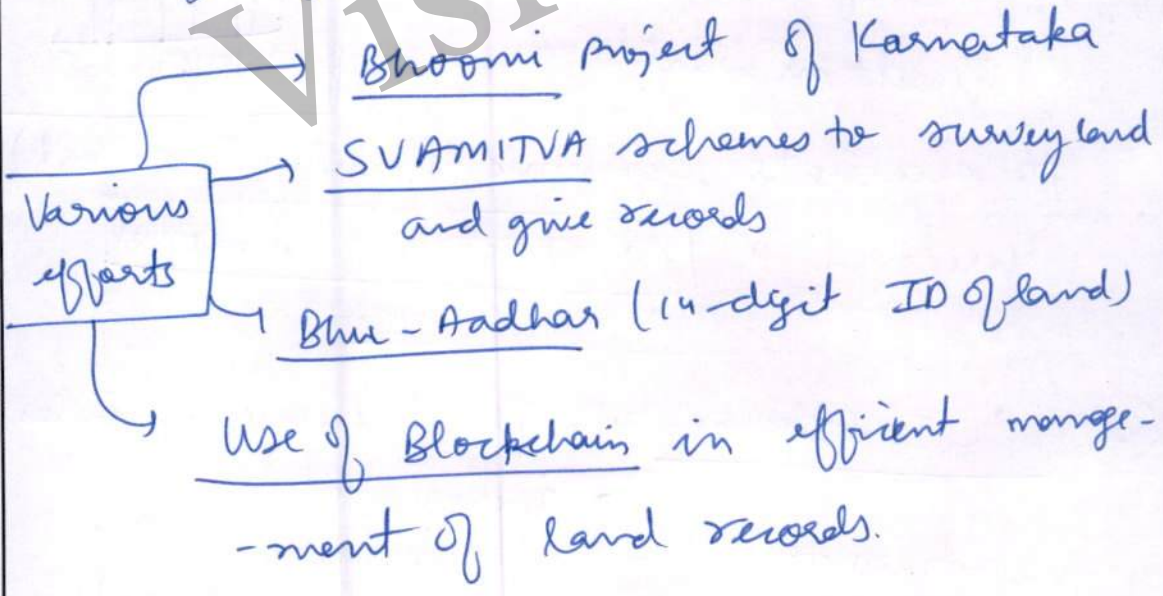
(1) Going from Presumptive to Conclusive titling of land. eg, The Digital India Land record program (DILRMP) is a Central sector scheme which will give land records and reduce disputes.

(2) Enabling tenancy reforms → The land records digitalization will help in tenancy legalization.

(3) Promote Ease of doing business.  
(EoB) → The Industrial Information system <sup>(995)</sup> provides information to businesses on land records clusters.

(4) Help in land pooling → Digital records will accelerate the process of land pooling.

(5) From land to the tiller to "Credit to tiller"  
→ Digital records help as collateral in getting credit.



Digital India will help in creating a prosperous "Amdata".

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 ह्रासिए में नही लिखना चाहिए  
Candidates must not write on this margin

With manufacturing having only 12% of workforce (Economic Survey 2024) and India's demographic dividend peaking in 2042, there is a need for reforms.

### India's demographic dividend

→ India will have 59% of workforce as working age highest in world.



to accelerate economic growth (5 trillion \$) we need a manufacturing-led model

(1) PLI scheme → The scheme provides

incentives to

- increase jobs
- Enhance capability in manufacturing
- Import substitution

13 sectors (Pharma; Mobile; Food; textile).

It will help boost manufacturing.

(2) Make in India → It dreams to enhance share of manufacturing GDP to 25% (from current 17%).

(3) Reskilling; Skilling and Upskilling of workforce → National Apprenticeship scheme  
→ ITIs and PM Kaushal

(4) MSME growth as they are Vikas Yojana backbone of manufacturing → PM-MUDRA (limit increased to 20 lakhs) and Udyam portal.

(5) Creating Overarching infrastructure :-  
→ Mega textile Parks under PM-MITRA  
→ Semiconductor assembly lines (Foncorm) project in Maharashtra

(6) Attracting FDI → Increasing 200% in many sectors (Food Processing)  
↓ Enhance through DLI and SEZ scheme  
↓ Samsung plant in NCR

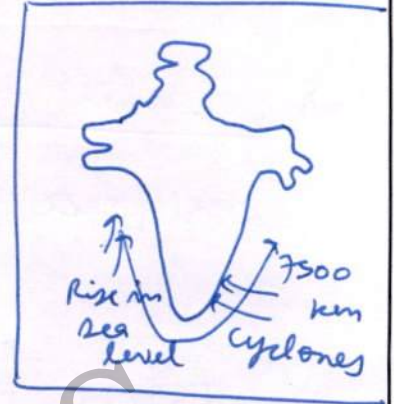
(7) Credit → Through Funds of funds and Bank credit.

The Manufacturing led model will help India achieve the dream of "Build local to go global"

6. जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)
- How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words)

उम्मीदवारों को इस हाशिए में नदी लिखना चाहिए  
Candidate must not write on this margin

India with a coastline of 7500 km and Climate Change vagaries knocking on it's door Present a challenge for coastal areas.



Natural hazards resulting from Climate Change

- (1) Rise in sea level → Inflow of saline water  
↓  
Hurts agricultural communities ← Reduced fresh water
- (2) Irregular Storm Surges (called Kalakaddel in some areas)  
reduce the fishing activity.
- (3) Increased Cyclones in Arabian sea  
due to high sea surface temperature cause life; property loss.
- (4) Extreme rainfall events leads to landslides (Recent Wayanad incident)

(5) Increased water diseases in the local population.

This calls for efforts to enhance resilience of communities.

(1) Invest in Disaster risk reduction in coastal areas (Sendai goal)

→ Arm people with Early warning systems like India Snake & Sagar Vaani App.

→ Build shelters on high risk areas for evacuation

(2) Focus on livelihoods

→ Kudumbashree NGO is promoting alternative options like tourism; jetties.

→ Seaweed farming; ornamental culture under PM-MATSYA Sampada.

→ Availability of credit to start business.

(3) Enhance social indicators by extension of PM-Ayushman Bharat and Jal Jeevan.

(4) Climate resilient varieties use like Pokkali rice of Kerala (Salt tolerant)

This will help in enhancing

the resilience of coastal 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)

Green Credit program was launched by India at COP 28 to promote voluntary services which are eco-friendly. SCFRE is the implementing agency.

Goes beyond Carbon management

- (1) It promotes activity like water management; afforestation which will help create sustainable environment.
- (2) It invites participation from both individuals and corporates which helps in localized success.
- (3) Promotes green financing.

(4) Narrow approach of carbon sequestration changed to adopt holistic development of natural systems (Rivers; saplings; soil management)

### Various challenges

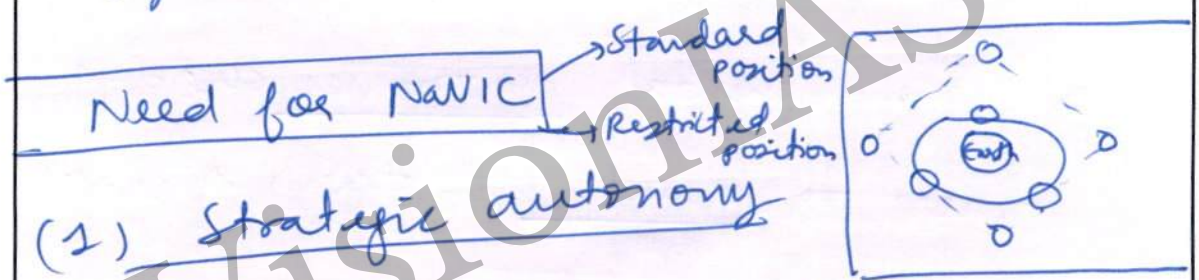
- (1) Can lead to greenwashing as there are no stringent measures.
- (2) Environmental outcomes are difficult to quantify in terms of credit.
- (3) GCFFRE lacks the ground level support to robustly implement this.

States and local governments can collaborate to help make this program a success and help in achievement of LT-LEDS

8. जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)  
 What is the need for NavIC when existing satellite navigation systems are already available?  
 (Answer in 150 words)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
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Navic stands for Navigation by Indian Constellation. It is a set of 7 satellites (3 geostationary and 4 geo-synchronous) to provide an indigenous regional navigation system. (IRNSS)



(1) Strategic autonomy

→ India's dependence on foreign navigation systems hurt it when USA refused information in Kargil war. (Defence needs it)

(2) Agricultural development → India's

45% workforce is in this sector. Effective use of technology needs NAVIC

(3) Enhancing the resilience of fishing

communities (information given)

- (4) Promoting logistical efficiency to achieve cost reduction goal to  $\frac{8.1\%}{\text{GDP}}$ .
- (5) Promote the growth of geospatial sectors in India.
- (6) E-commerce promotion in India requires the efficient work of NAVIC.
- (7) Use in space technologies; education promotion (Geofencing app to capture teacher attendance).
- (8) Enable E-governance growth.

The drive of NAVIC and GAGAN can help India in accelerating the national development and achieve "Viksit Bharat by 2047".

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

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

According to UN Office of drugs crime; 2-5% of global GDP is laundered every year and it has been accelerated by use of Cyber-technology.

### Cyber-enabled money laundering

(1) Use of new methods in the 3-stage process of money laundering. → Crypto mixers are used; NFT trade used for money laundering.

(2) Darknet emerging as the biggest platform for launderers + Sale of drugs  
 ↓  
Smurfing done → Sale of Arms and sensitive data  
 (Deposition of amount in many accounts) → Happened with Jan Agent Dhan users

- (3) spoofing of invoices digitally to layer the real source of income.
- (4) Super processors used to reroute money in shell companies.

Government's proactive steps to address this

- (1) Prevention of Money laundering Act 2002 (PMLA) has made money laundering a separate offence.
- (2) FIU-IND (Financial Intelligence Unit) provides information about such crimes.
- (3) CERT-IN alerts about such networks.
- (4) Following of FATF regulations in this regard.
- (5) NO MONEY for terror pledge to stop use of technology in crimes.
- (6) Creating global collaboration (like in UN GP ML & Interpol)
- (7) Enhance indigenous technology to track such crimes.

Money laundering as a

menace can be ended by curbing cybercrime and fostering global partnership.

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 increased use of technology by Armies around the world (use of AI by PLA, China) necessitates India to shift to a tech-savvy force.

### Need of technology absorption

- (1) Complex Warfare → Warfare has taken new forms (Cyber; Drone use by Pakistan; use of AI systems).
- (2) Adversaries have already taken lead like Civil-military fusion of China.
- (3) Challenge of Non-state actors who have access to higher technology.
- (4) India's role as Net Security provider (NSP) and two front challenge (Pakistan and China needs technology use)

## Challenges in adoption

उम्मीदवारों को इस बाशिर् में नही लिखना चाहिए  
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- (1) Low resources → 50% of defence budget in pensions and delayed procurement.
- (2) Lack of civil professional integration due to security concerns reduces talent pool.
- (3) Overburdened DRDO → without active private sector engagement; DRDO can only achieve limited
- (4) Increased import dependency (as highlighted by SIRRI <sup>Access</sup> report)

## Initiatives to overcome these

- (1) Technology development fund (TDF) created for resource availability (funds)
- (2) DAIPA agency to promote AI integration.
- (3) Private sector support → Indrajaal drone systems by private company; Tata in manufacturing.
- (4) SRIJAN Portal and Defence Corridors (Madurai Lucknow) to reduce imports.
- (5) Integration of civilian talent through IIT collab and Indian Institute of Science (IISc)

11.

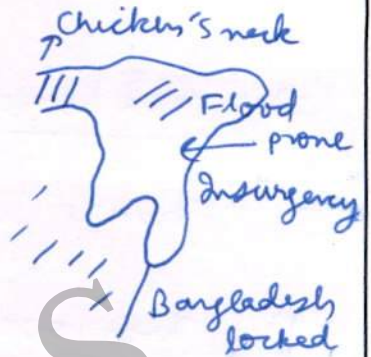
भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)  
 What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of India? Comment on the measures that have been taken to tackle these issues. (Answer in 250 words)

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

15

The North-Eastern Region's contribution in the Indian economy has been miniscule due to various factors.

Issues faced in development of trade and industries



- (2) Conducive environment is missing
- Regular insurgency through porous borders.
  - Rent-seeking and extortion by local groups like NSCN; ULFA; NDFB.
  - Cross border violence between states (Assam Meghalaya dispute)

- (2) Logistical barriers → The only connect of North east to the mainland is a narrow Siliguri corridor.
- Even water transport is difficult as no coastline exists.

- (3) Issues in Land acquisition - The 6<sup>th</sup> schedule governed areas have autonomy over land and this complicates land acquisition.
- (4) Skill of the People - It is deficient and does not match industry standards.
- (5) Climate - The Brahmaputra flooding region acts as a deterrent for industries
- (6) Credit availability - The share of North East is low in MUDRA; PSL loans which hurts entrepreneurship.

Measures have been taken to address this

→ (1) Creating peace through dialogue and Suspension of operation agreements. eg. Naga Peace and Bodo peace.

(2) Solving logistics issue by →  
→ Building infrastructure → Bhuban Bridge  
→ water transport through International Cooperation → Kaladan project and Sittoung port  
→ Akhaura-Ajantala Railway access

- (3) Enhancing land availability through launch of North East Special Infrastructure development scheme (NESIDS)
- (4) Creating overarching infrastructure through PM-DEVINE and state initiatives
- (5) Skilling of people through the PM-Kaushal Vikas and Jan Shiksha Sansthan
- (6) Focusing on One district one product  
 - Nagaland Organic Cardamom  
 - Resource-based manufacturing.
- (7) Women entrepreneurship promoted through SHG programs.
- (8) Representation of North East startups promoted through Media engagement.  
 - Shaktank India
- (9) Big corporates investing.

The equitable economic development of North East will help India achieve "Viksit Bharat" goal

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 नही लिखना चाहिए  
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Climate change has exacerbated

water stress around the world. India with 17% of world population and only 4% water resources is particularly vulnerable.

Climate change and Water scarcity

- (1) Water stress in cities - 30 cities of India to have Ground Zero by 2030 (WWF report)
- (2) Depleting Groundwaters in Rural areas due to increased demand (Heat waves)
- (3) Climate change induced extreme rainfall (short but intense) has led to regional disparity in availability of water
- (4) Freshwater Salinisation due to rise in sea level reduces fresh water <sup>29</sup>

Micro-irrigation systems are the techniques which involve precision irrigation delivery and enhanced water savings. Ashok Dalwai Committee has said on its merits :-

- 40% savings in water
- 45% increase in productivity
- 50% increase in farmer income

How they can help in sustainable agriculture practices

- (1) Help conserve water and restore the depleted water table.
- (2) Reduce soil runoff and the associated problems of leaching and Eutrophication of water bodies.
- (3) Help reduce fertilizer subsidy (64000 crore) as fertigation (application of fertilizers with micro irrigation will help in saving both.

(1) Promote dryland farming - It

will help in enhancing agricultural yield in such areas. (Millet and Pulses)

Case Study

- Sanchore area of Jalore has seen success in Agriculture due to Micro irrigation (Naamdag project)

But it faces some challenges

→ High initial cost

- Lack of skilled people at village level to keep maintenance

- Trampling by livestock

Various initiatives by government to promote this

(1) PM-Krishi Sinchayee Yojana mandates use of micro-irrigation system.

(2) KCC Credit Card used to give loan for installation.

(3) Krishi Kendras to provide skilled professionals

(4) Partnership with other countries like Israel

Micro-irrigation systems will help in bringing Green Revolution 2.0 as well as enhance farmer income.

13.

भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल दुलाई 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 हार्शिए में नहीं लिखना चाहिए  
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Indian railways operating ratio has been found to be 97 (Spends 97₹ to earn 100₹). It is low because of poor freight earnings of railway.

Issues in freight transportation

(1) Cross-subsidy regime → This has led to subsidizing of passenger ticket while inflating freight costs which discourages businesses. (Only 20% share as compared to 60% of road)

(2) Increasing accident cases → The cases of accident like in Balasore highlight safety issues.

(3) Delays in freight due to named crossings.

(4) Access to remote areas is missing and hurts the local businesses which prefer road.

(5) Outdated coaches and loeries are used for transportation.

(6) Reduced movement in Wildlife corridors also leads to reduced freight share.

Railways launched a 2030 Plan in which it has pledged to enhance freight share various measures:-

(1) Mission Avataram - It has 7 missions to increase freight share and quick delivery (Mission PACE). Also to rationalize freight cost.

(2) Creation of Multi Modal Logistics Park (MMLP) will help in increasing railway share.

(3) use of LHB coaches and new loeries.

(4) Direct integration with sectors

like → KISAN Rail

→ Industrial Corridors (like ~~Lithuania~~  
to Kolkata)

→ PM-GATI Shakti three corridors

→ Energy; Mineral; Cement → Port connect

→ high traffic density

(5) Eliminate named crossings and  
establish KANACH systems through all  
circuits. (Anil Kakodkar Committee)

(6) Integration with BHARATMALA and  
SAHARMALA will also help in  
increasing freight share.

(7) Greening railways → Electrification by  
2030 as businesses prefer green choice.

Railways is the spine  
of India's economy and its role can  
enhance India's journey to 3<sup>rd</sup> largest  
economy.

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

15

India in its Panchamrit goals has pledged to enhance the renewable energy share to 500 GW by 2030. This is due to :-



Various factors aiding India's strides

(1) Geography of India → The tropic of Cancer passes midway through India.

→ Solar Energy → Direct Sun rays; 325 sunny days in area like Rajasthan and 6-7 kWh density.

→ Coastline of 7500 km aids monsoon winds and that enhances wind energy (Tamil Nadu highest)

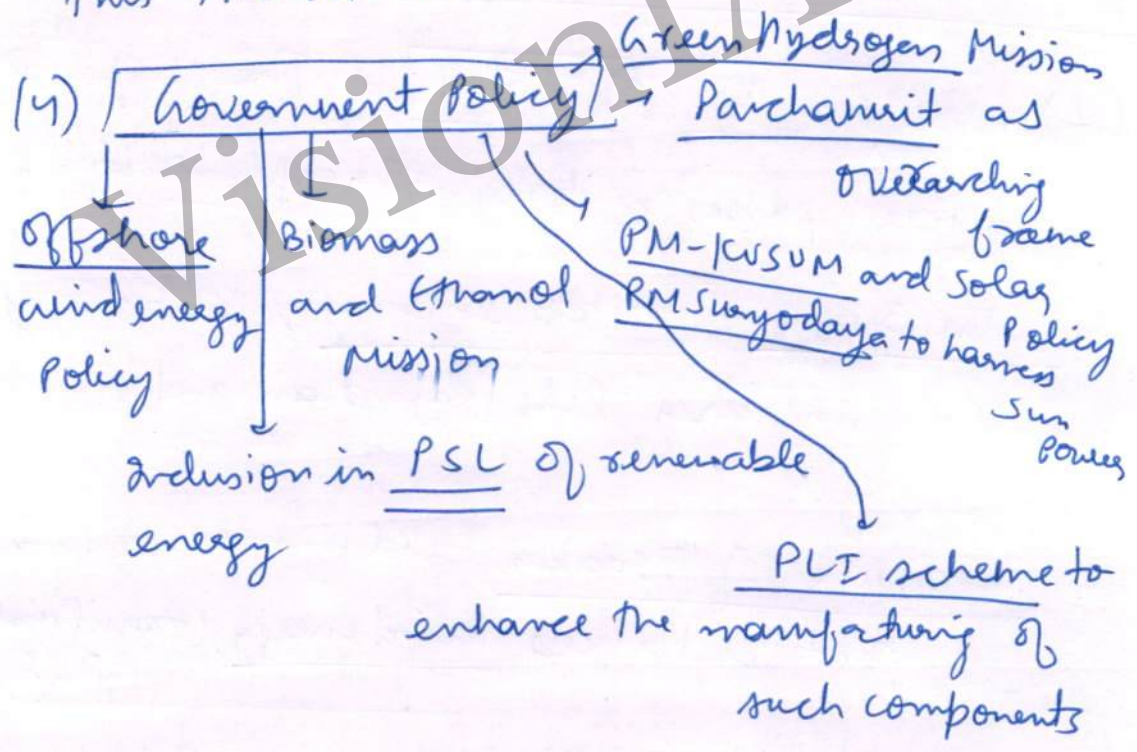
→ Active geology of Himalayas → It has led to geothermal energy production

→ River wealth of India → Aids in

Hydropower.

(2) Kerishi Pradhan (Agriculture dominant economy) leads to → Easy availability of biomass (GoBAROMAN scheme and SATAT)  
→ High foodgrain production helps in Ethanol (use of broken rice; maize)

(3) MSMEs of India → They help in the manufacturing of components needed for this transition.



(5) Availability of land → Barren and culturable wasteland being used for energy

(6) Robust Scientific institutions → Indian

Institute of Science (IISc) ; IIT network ;  
National Institute of wind technology ; BARC

(7) Strategic Partnership with Private

→ Adani has highest investment in  
Solar energy  
→ offshore <sup>wind</sup> plants by many corporates

India as frontrunner in global level

(1) 170 GW already achieved and  
has highest rating on SDG 7 (Clean  
and affordable  
energy)

(2) Global institutions by India like  
International Solar Alliance (ISA)  
and Global Biofuels Alliance.

(3) India as top 10 in both solar and  
wind energy.

Recent initiatives like  
Anusandhan foundation and indigenous  
solar panel production will help India  
achieve Green growth (Saptarishi  
Pravara)

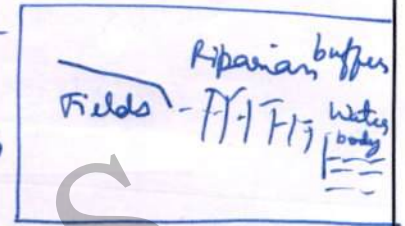
15.

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

India is the largest user of fertilizers and is a agriculture dominant economy which has led to serious downsides like river pollution.



Indiscriminate use of fertilizers due to high subsidy. Agriculture runoff due to free electricity and water availability leads to over-irrigation which leads to runoff.

How does it contribute to environmental pollution

(1) Groundwater pollution - A C&WB

report highlighted uranium; iron pollution in groundwater. This is partly due to leaching.

(2) River pollution → The runoff reaches the water bodies, leads to Eutrophication

and can also release harmful algal blooms (HABs)

(3) Livestock health → This is affected due to high chemical intake (Biomagnification)

(4) Wetlands depletion due to the runoff is leading to marshes shrinking

(5) Air pollution → This is an indirect effect of Algal blooms releasing toxic gases

(6) Soil depletion and land degradation due to skewed use of fertilizers. (N:P:K  $7:3:1$ )

Various efforts by government:-

(1) Use of eco-friendly fertilizers like Nano Urea (500ml instead of 45kg bag)

(2) PM-PRANAM also promotes natural and less polluting options

(3) Innovative techniques like Fertigation to reduce the fertilizers use.

(4) Barriers between fields and water bodies by creating Riparian Buffers which absorb pollutants.

(5) ZBNF and promotion of organic farming through MISSION RAFTAAR

(6) Renewing free electricity; giving 24x7 metered supply (as in Punjab) and shift to Rain water conservation.

(7) Community involvement to regularly clean water bodies to prevent algal blooms (Ganga Prakash)

These measures will help in following a ~~one~~ integrated approach to balance food security and environmental health.

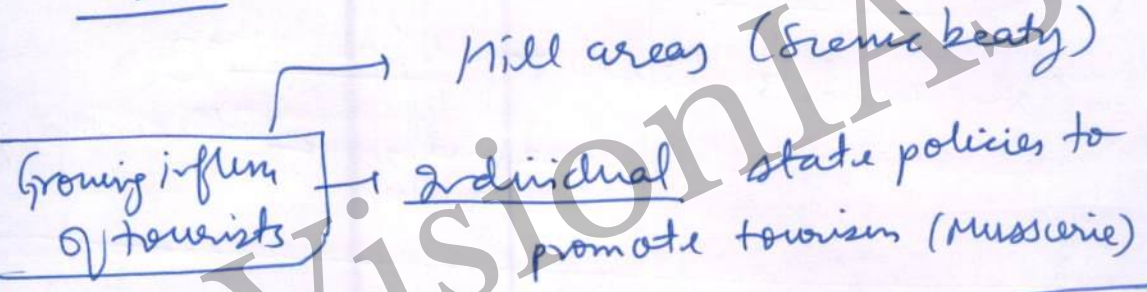
16.

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)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
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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 ecological carrying capacity of many hill areas has been breached due to unsustainable tourism.



It has led to man-made disasters

(1) Creation of infrastructure to accommodate these tourists involve side-cutting of hills and mount blasting which make region unstable.

- leads to landslides (22.6% area is prone)
- leads to land subsidence (Joshimath example)

(2) Increased waste → Himalayan Clean Audit report highlighted 92% is plastic. It clogs drains and can cause flooding even in short rain.

(3) Power needs → It has led to creation of hydroelectric projects which can lead to landslides. (Tapovan example)

(4) Rampant growth of restaurants and resorts leads to deforestation  
Landslides ← Slope instability  
Earthquake

---

Various measures to prevent disasters

---

(1) Ravi Chopra Committee → It has suggested abandoning of methods like side-cutting, blasting and no infrastructure in peri-glacial zones.

(2) Limiting the footfall of tourists by creating a integrated pass system or developing alternative tourist places.

(3) Topography based transport  
PARVATMALA (POpenways use)

- (4) Developing renewable energy options like geothermal to reduce the need of large hydro projects.

### Promoting Sustainable Tourism

- (1) Eco-tourism policy of Sikkim
- It has banned the use of plastic to reduce waste.
  - It has limited the number of tourist guides (trained only)
- (2) Himachal Pradesh banned the use of packaged plastic water.
- (3) Ladakh using homestays to reduce the need for creating large resorts.
- (4) Volunteer groups like Healing Himalayas help in awareness and waste cleaning.
- (5) Dharamshala declaration → to promote eco-tourism according to local needs.

India's "Atithi Devo Bhava"

motto needs to be integrated with

"Prakriti Rakshati Rakshitah" to live

harmoniously

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

Superconductors are materials which exhibit zero resistivity at very low temperatures. Recent claim of superconductivity at room temperature (273 K) has again brought it in focus.

Working principle



→ The Superconductors when cooled below the critical temperature expulse the magnetic field and this enhances the current flow (Meissner effect)

Fueling innovation in diverse fields

(1) Space technology → Superconductors are used in space equipments to

provide uninterrupted flow

(2) Medical field → The Superconducting materials help in diagnosis. (e) CT Scan uses a superconducting coil.

(3) Supercomputers → Fast calculations require efficient use of superconductors.

(4) Transport systems → They use some superconducting material to enhance speed (High Speed Rails)

Challenges → Needs huge investment  
→ Can't be established at room temperatures  
→ Needs skilled workers.

India's initiative of Research Anusandhan foundation is helping

in growth.

- Integration with National Supercomputing and Quantum Mission.
- Promote Skill through Atal tinkering Labs (ATLs)

This will help in realising the motto of "Jai Jawan; Jai Kisan; Jai Vigyan and Jai Anusandhan"

8.

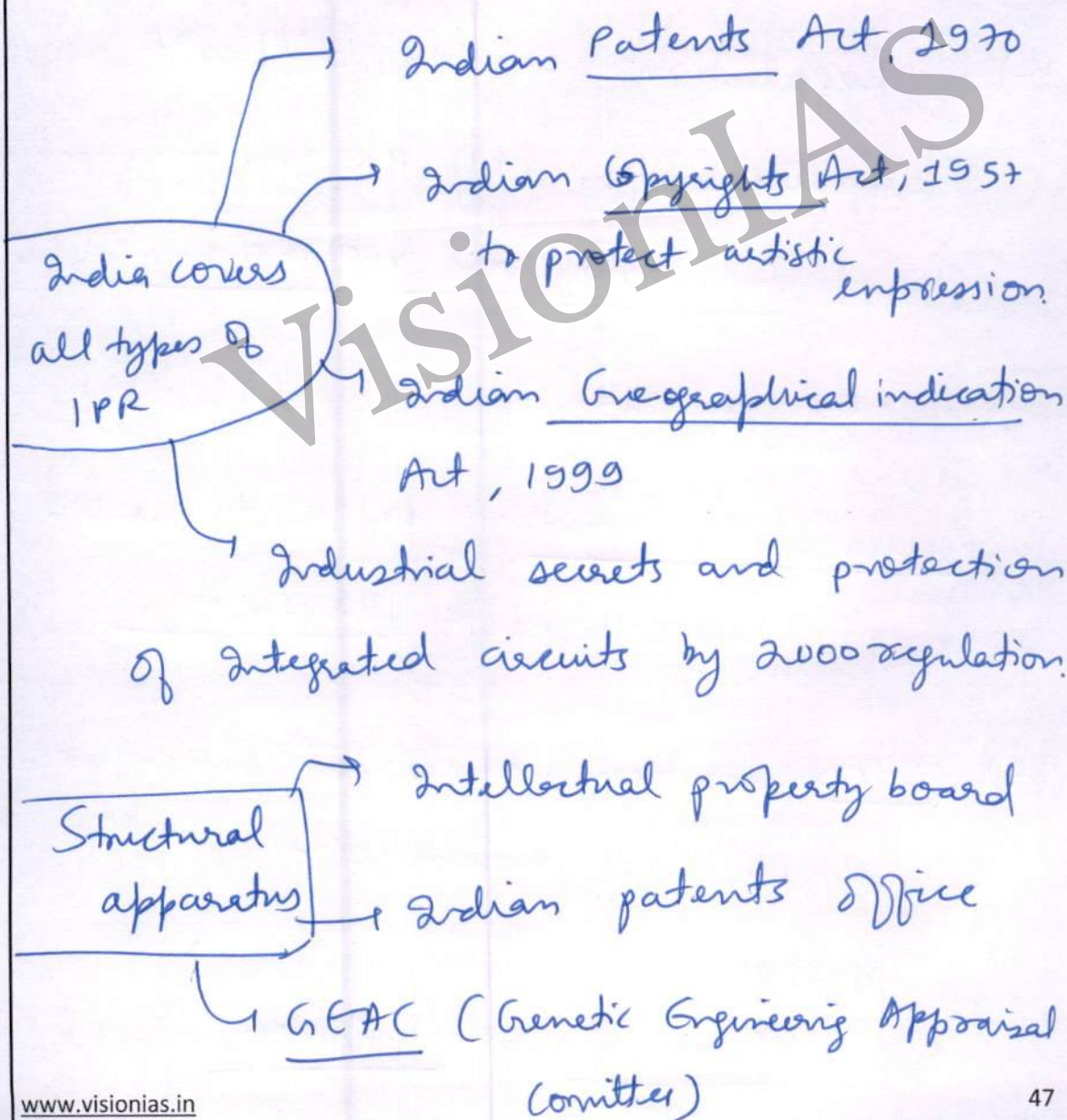
यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तर वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

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)

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India has a robust IPR protection regime in line with the WIPO obligations.



## Enforcement; regulatory and administrative challenges

- (1) Intellectual property board lacks the resources and manpower to enforce rules
- (2) Regulatory checks are skipped due to collusive corruption
- (3) Regulation becomes difficult as commercialisation of IPR can encroach upon indigenous and traditional knowledge.
- (4) Indian Patent Office suffers with Regulatory cholestrol → Delays in granting patents as opposed to Foreign Offices
- (5) IPAB has been abolished which leaves no appellate mechanisms for the disputes
- (6) Evergreening and Biopiracy issues present a challenge.

Government has taken various measures to smoothen this:-

- (1) Shifting of Intellectual Property Board from Ministry of Education to Ministry of Commerce.
- (2) NIPUN Bharat → It will create IPR awareness in school students.
- (3) Fasten the patent granting process by integration of technology → India emerged as 3rd largest Patent holder.
- (4) Creation of TKDL (Traditional knowl-  
-edge digital library) to avoid confusion  
and accelerate commercialisation

These measures along with recent WIPO treaty will help in India's rise as a "Knowledge superpower"

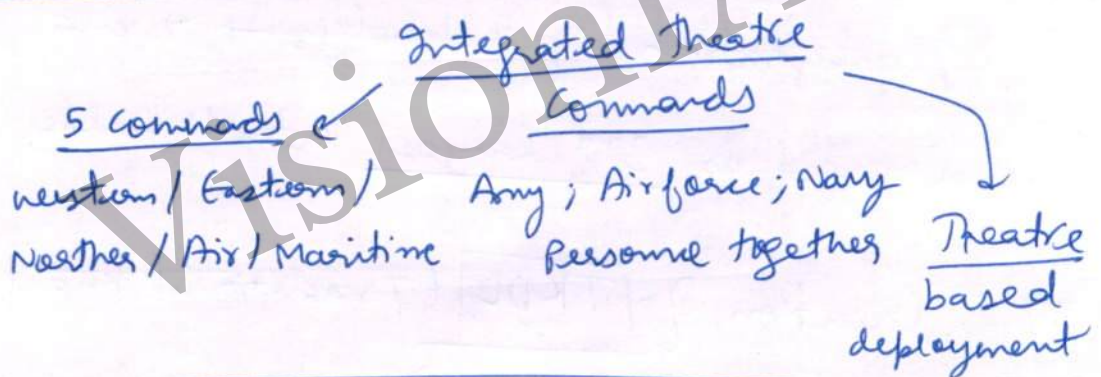
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एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों 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 idea of integrated theatre commands was first suggested by the DB Shekatkar Committee to enhance the synergy and dynamic nature of Indian forces



Challenges in creating theatre commands

(2) The inter-services friction causes a barrier in creation → Airforce is apprehensive of thinning of its already low squadrons and giving the command to Army

(2) Resource Crunch → Around 50% of defense budget is spent on pensions. This poses a challenge in expanding the requisite infrastructure needed for theatre commands.

(3) Diverse terrain of India → From undulating hills to marshes, deserts are a challenge to joint deployment.

### Benefits of Theaterisation of Commands

(1) Pooling of resources → This will help address the operational deficits of all three forces. (Chinook of Army used by Airforce and Custom Drone of Navy by Army)

(2) Better use of talent → As the nature of warfare gets dynamic; technical knowledge of navy and airforce can be utilized by Army on the LAC front.

(3) Quick deployment → In a crisis,

Artillery; air support is summoned after which hinders counter attack. Integration of small functional units will help in quick action

(4) Better synergy and joint habit will enhance battle preparedness

Various steps taken to realize theater commands

- (1) Creation of CDS (Chief of Defense Staff) to encourage inter-services cooperation.
- (2) Department of Military Affairs also created.
- (3) AGNIPATH scheme will reduce pension burden and provide more resources
- (4) Joint exercises to simulate theater experience - Recently done in Pokhran and Sea Vigil

Theatre commands will enhance the capability of our brave forces further in safeguarding national borders.

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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Recent announcement of  
Vibrant villages program highlights  
the need to shift from security view  
of border villages to developmental view.

Treating border villages as functional villages

(1) Build infrastructure to fill develop-  
-mental gaps and gain trust.

(2) Winning hearts and minds - like  
(WHAM)  
conducting regular panchayat elections  
helps in reducing alienation feeling.

(3) Skill development and enhancement  
of secio-economic indicators

(4) Treating them as mainland  
Panchayats and divolve subjects

## How it enhances border security

- (1) It leads to decline in domestic recruitment of terrorists. (MNA report)
- (2) Overground workers' growth can be curbed.
- (3) Trust and legitimacy of people helps in smooth operation of forces (reduces local hindrances like stone pelting)
- (4) Helps build local intelligence setp to help in counter-insurgency.

Government has been proactive in its efforts to enhance village development.

- (1) Political measures - Repeal of Article 370 and holding of Panchayat elections has helped in trust building
- (2) Extension of central schemes like Gram Swaraj, NRLM to J&K.

(3) Vibrant Villages Program (-VVP):-

It is a centrally sponsored scheme to revamp border villages in Ladakh; Himachal; Uttarakhand; Arunachal Pradesh and Sikkim.

- Give 24x7 electricity and drinking water
- Provide skill development to youth
- Promote entrepreneurship especially among women.
- Economic development through One Village One Product"

(4) Village defence councils → To train villagers to act in self-defence.

(5) Programs like Operation Sadbhawna of Indian Army and decentralisation of subjects to panchayat.

Hence; Gramodaya in border villages will not only lead to Samodaya but "Surakshit Bharat"

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