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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. : 01360854

अभ्यर्थी का नाम/Name of Student : SANJEEV KUMAR

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

25th August - 2024

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

केंद्र
Centre

DELHI - Karol Bagh

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	महत्वपूर्ण अनुदेश 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।	Important Instructions 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.
1	(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें। (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।	(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates. (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
2	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।	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.
3	परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।	Do not make any direct/indirect appeal/threat to the examiner.
4	उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।	Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.
5	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।	Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.
6	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।	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.
7	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।	Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.
8	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।	If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.

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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)					



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

Indian food processing industry is growing at more than 10% growth rate as sunshine industry.

ways by which the rapid growth of this leading to food safety challenges

① Adulteration of foods $\Rightarrow$ due to inter-mixing of chemicals.

eg. causing food poisoning.

② Recent report by FSSAI indicated 12% Indian species failed to meet the quality standards.

③ Junk food booming $\Rightarrow$ that leads to lifestyle diseases.

eg:- Diabetes, over-weights etc

④ Lack of nutritional goods $\Rightarrow$ due to proportion of soft drinks.

⑤ Environmental pollution $\Rightarrow$ due to plastic packaging and no "polluter pay principle" implementation.
eg: NO EPR

⑥ Informal sectors $\Rightarrow$ as 90% of the MSMEs are informal, that avoids the regulatory control.

⑦ Lack of testing facilities $\Rightarrow$ leading to no check on food fortification in proper ratios.
eg: rice (Vitamin B12, folic acid)

Thus, FSSAI needs to invest on infrastructure to keep proper check on food adulteration.

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

Shanta Kumar Committee noted that 67% of the Indian population get free-ratione under PDS. It provides through NFSA, PM Garib Kalyan Anna Yojana, etc.

Fair Price shop (FPS) transformation is an evolving process

① e-pos shops are emerging from traditional shops. It keeps real time tracking of sells.

② usage of one-nation, one-ration card to help migrate works availabing free rations.

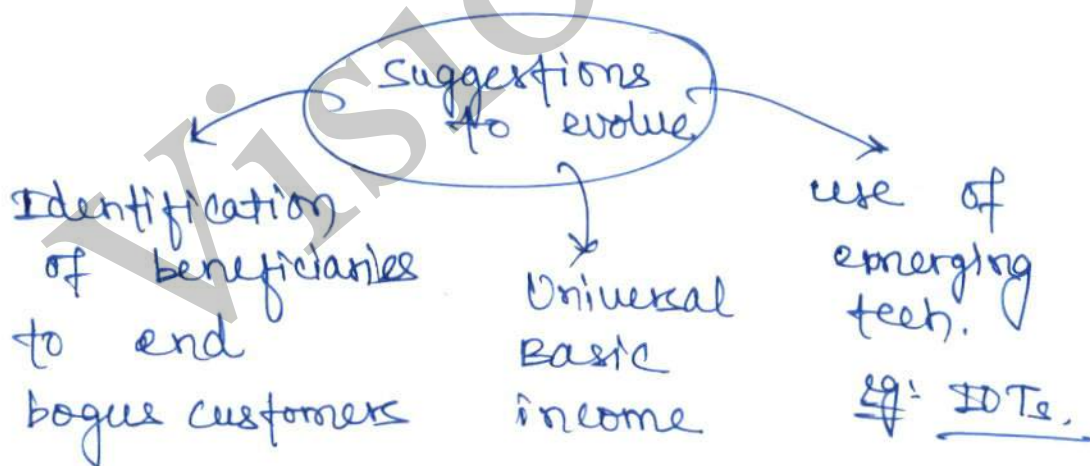
③ Allowed choice to choice FPS by

the customers at any location.

④ Aadhar card - Ration card linkages →
to ensure transparency and ending
the ghost beneficiary.

⑤ Pilot projects on Food Coupons →
are recommended by SR committee.

⑥ Need to integrate Artificial
intelligence to keep check on
usage of rations by FPS.



Thus, PDS is the lifeline of poor
serving 82 crore citizens to
fable malnutrition.

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

Indian agriculture contributes 18% of the GDP while employing 4.0% of the population. It needs agri-tech to evolve.

ways through which agri-tech startups can help farmers

① Input levels → to get right amount of seeds, fertilizers and waters.

eg: Precision agriculture startups to use tilling machines (sensor based).

② Micro-irrigation techniques → such as drip irrigation, sprinkler, gun etc

③ Disease control → using new tech such as CROPTIX that

predict diseases, weed using AI.

④ sen-sagri $\Rightarrow$ to use sensor based farming in livestock management and crop management.

⑤ Output level $\Rightarrow$ to get weather updates via sandesh pathak.

eg: Cutting using AI-based machines.

⑥ Forward-backward linkages $\Rightarrow$ to get market access.

eg: e-NAM, AGMARKNET, etc.

⑦ other agri-tech $\rightarrow$ e-choupal
 $\rightarrow$ m-kisan APP
 $\rightarrow$ Agriwi
 $\rightarrow$ Saagu-Bagu (Telangana)

Thus, Indian agriculture need to be modernized using Arthok Dalwai Committee recommendations.

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

India through its 4th phase of land reforms implemented Digital India land record modernisation program (DILRMP).

Role of digitization of land records

① Transforming from presumptive titling to conclusive titling in terms of the land records.

② land pooling ⇒ becomes easy for the government to re-develop areas.

eg: Amaravati - capital creation is done using this.

③ Better price-control of sales and re-sells of the lands.

④ Reduces the land disputes as
Niti Aayog noted it takes 20 years
to solve such cases in court.

⑤ Reduces court pendency cases
as World Bank noted 80% cases in
India are related to land disputes.

⑥ Increases transparency via Bhu-adhar
hence, reduces the fraudulent
sales.

⑦ land leasing for the tenant
farmers and security of tenure.

⑧ co-operative & contract farming
promotion.

Thus, DIRMP aims to transform
land reforms that initiated via
1st constitutional amendment act.

5.

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

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

10

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

Current average age of India is just 28 years ~~was a~~ vs China (38 years) and Japan (48 years). This holds significance for reaping demographic dividend.

India needs to adopt a manufacturing led growth model -

① Shift from capital intensive industry to labour intensive industry.

② Tap the dis-guised unemployment from the agricultural sector to the manufacturing sector.

③ Small-scale industries as being suggested by Prashant Kishore in Bihar to reduce stress migration.

④ Jobless growth reduction $\Rightarrow$ as the
unemployed youth in India accounts
83% as per ILO report

⑤ focus on MMS $\Rightarrow$ as they
account 40% of manufacturing output
and 22% GDP contribution.

⑥ friendshoring opportunities tapping $\Rightarrow$
to get benefit of "China plus one"
policy by western nations

⑦ service-led growth $\Rightarrow$ as suggested
by Raghuram Rajan to tap the
energy of demography.

Thus, the government initiate to provide
internship to youth (1 crore) is welcome
step. But Economic Survey suggested to
provide 78.6 lakh jobs per year till 2035,

6.

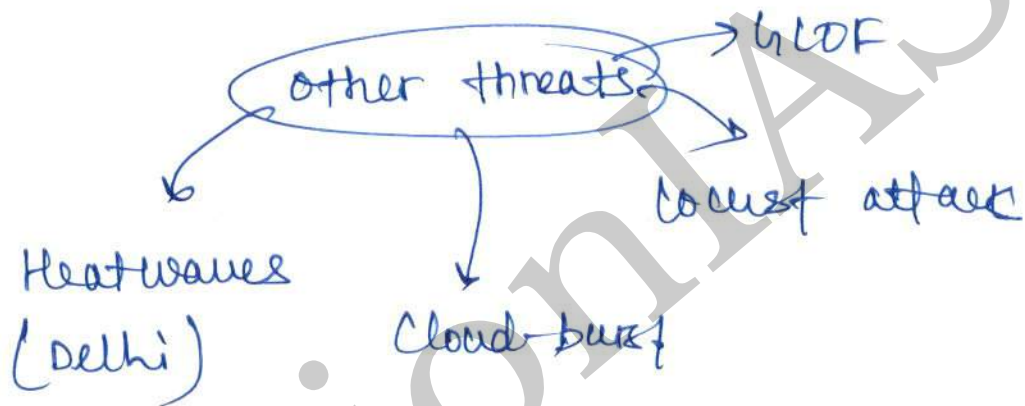
जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words)

10

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

India is witnessing the natural hazards due to climate changes. As, it accounts 15% landslides, 12% floods and 59% earthquakes.



Resilience of Indian coastal communities be strengthened to tackle the hazards

① structural supports $\Rightarrow$ by making flood proof buildings.

eg: to tackle cyclones like Biparjoy.

② sea-level rise $\Rightarrow$ this need to

• be tempted by shifting towards high- upland regions.

③ Early warning system → via multiple medias such as social media, TV and SMS warning.

eg: like Delhi warns over thunderstorms via SMS etc.

④ Vulnerability analysis and risk assessment ⇒ to help out women, children, senior citizens first.

⑤ Preparedness before hand in case of any crisis.

⑥ use of technology ⇒ to aware people.

Thus, coastal led development using sagarmala with focus on environment sustainability is needed.

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

Recently, India launched Green credit programme both at national and international level.

eg: Global Green credit programme at COP-28 (Dubai).

Green credit programme extend beyond carbon management

① Credit availability → for the renewable projects.

eg: solar energy, or wind energy etc

② Carbon sequestration → using methods like blue-hydrogen under national green hydrogen policy.

③ Investors → can get loans for

• infrastructure developments from banks.

eg: Nuclear energy, tidal
energy

Various concerns about its implementation

① No funds beforehand $\Rightarrow$ ie projects need to be developed first, then loans.

② quantity limit $\Rightarrow$ as it puts <25 MW hydro projects only.

③ only ₹ (Rupee) loans $\Rightarrow$ it denies the loans in foreign currency that can impact the foreign investors' interests.

Thus, green credit program is a good step in fulfilling Panchamrit goals & to achieve Net-zero by 2070.

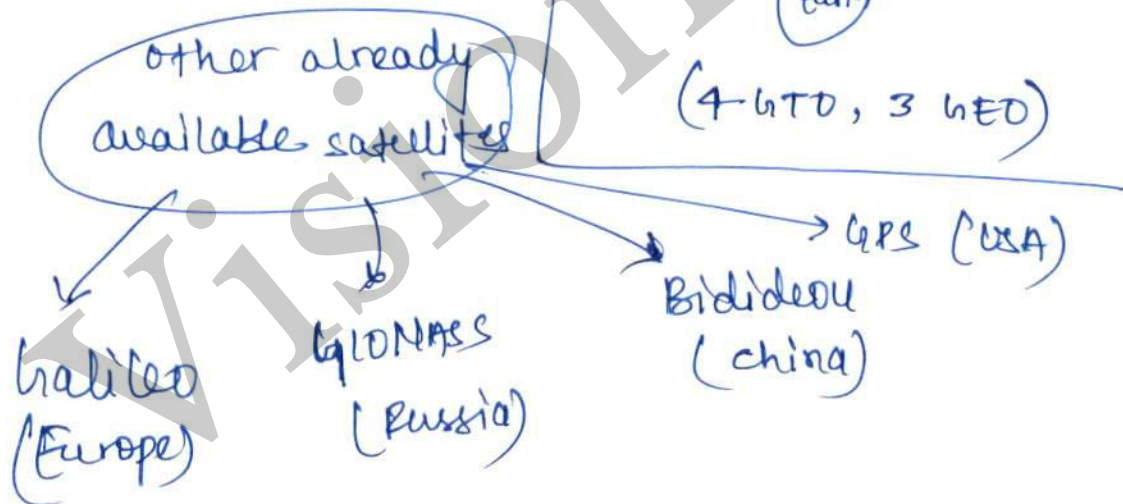
8. जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)
 What is the need for NavIC when existing satellite navigation systems are already available?
 (Answer in 150 words)

10

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

NavIC is an indigenous ^{GPS} type satellite for the navigation purposes in India. It covers 1500 km beyond border of India.

eg: Total 7 satellites in the orbit.



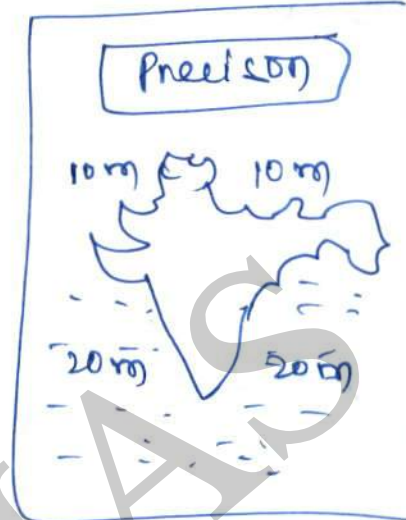
Need for NavIC when others are already available:-

- ① Security reasons → India can't rely on the foreign nations when

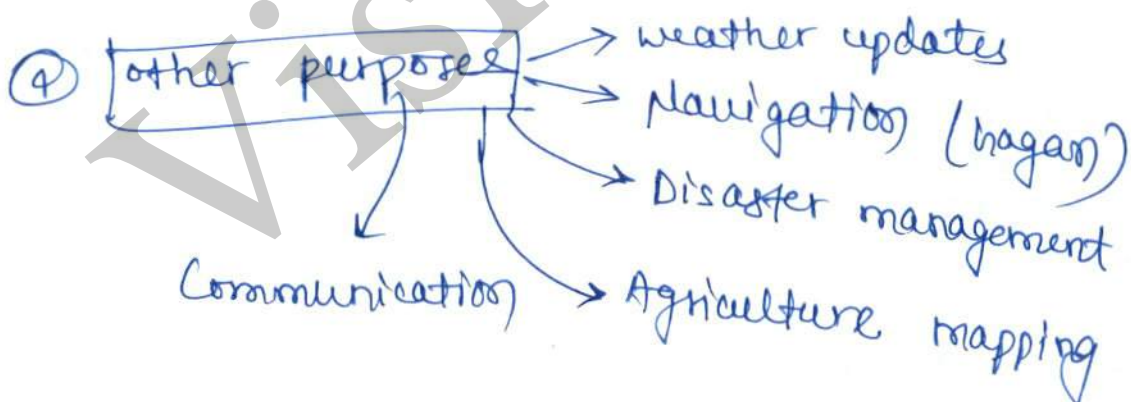
Comes to getting the satellite data.

Eg: USA denied access during Kargil war to trace Pakistani infiltrators.

② More precision than GPS $\Rightarrow$ as it provides 10 m over land areas and 20 m on ocean region.



③ Fishing Community $\Rightarrow$ recently ISRO developed 'Nabhmitra' to help communication between fishermen in the sea.



Thus, NavIC is the state of art creation of ISRO to become global super-power in space.

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

Recent Cyber attacks via wannacry and Pegasus are threatening. The rise of money laundering using deep web and dark web on rise.

Money laundering refers to the conversion of black money into white money just like laundry of clothes. (3 steps)

eg: Placement, layering, integration.

Cyber-enabled financial crime has emerged new frontier for money laundering.

① Block-chain technology ⇒ that are super-protected and used by hackers to deal in financial markets.

② Rise of crypto-currencies ⇒ that

are outside of governmental control.

eg: Bitcoin, Ether etc

② shell companies ⇒ using online based fraud company

④ casino - via online ⇒ to invest in illegal betting market.

⑤ found tipping and tax-heavens are other ways to do money laundering.

Government can address in following ways:-

① Strict Implementation of PMCA Act - 2002 on war footing.

② using Enforcement Directorate rationally

③ cyber suraksha Kendra and using

CERT-IN

eg: use hackers to track such crimes ethically.

Thus, Vienna convention and UNCTOC need to be followed.

10.

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

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

10

India is the 2nd largest army
in terms of soldiers accounting
around 15 lacs. Use of technology
is the need now.

Need for technology in defence sector

① Logistical supports → to provide supply
of food, clothes, ammunition.

eg: Drones.

② Emerging tech uses → to deal with
new challenges

eg: Nano-tech sensors to
detect infiltration.

③ Medical support → in case of
emergency.

eg: live-telemedicine
in Siberia, etc

④ Training and real time experience → using AI.

eg: Virtual devices etc.

⑤ war-fighting → with the replacement of soldiers with robots in more risky regions.
eg: kashmir valleys.

Challenges that India can face

① Privacy → of soldiers especially women, eg: voyeurism, data leaks etc

② security → as any technology can be hacked as per Elon Musk.

③ Power Supply → 24/7 needed to use smart fencing and sensors.

④ skilled manpower → who can operate it.

Thus, Indian defence sector should collaborate with Israel forces to get an edge.

11.

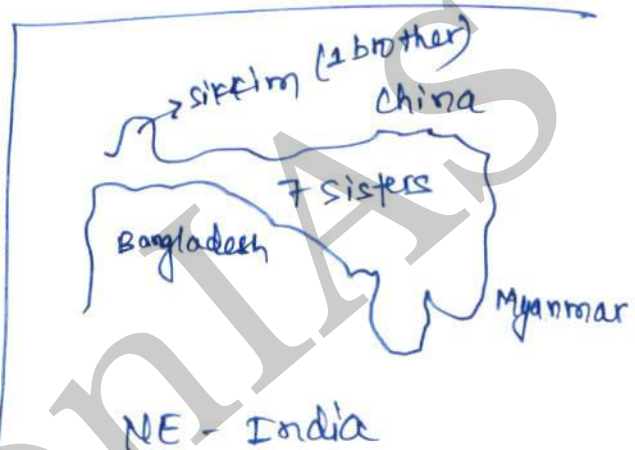
भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)
 What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of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

15

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

North-Eastern Region accounts 20% border of India with neighbouring countries, holding 6% of India's population. It shows its importance.

Issues faced in the development of trade and industries



① lack of connectivity due to no road or railways connectivity.

eg: even today, many Arunachal Pradesh region has only air-access

② Sensitive region due to North-east insurgency

eg: NISC, Bodoland, Chakma, Mara-Lai

③ Ethnic violence → that disrupt the trade opportunities.

eg: recent manipur violence between Kuki - Meities.

④ Climatic conditions → such as heavy rainfall in the region due to S-W monsoon.

eg: Meghalaya's Cherrapunji.

⑤ Lack of investment by the private sector.

Measures taken to tackle these issues

① Ministry for development of NE-regions and creation of DONER.

② North-east council - 1971 → led to federal discussion by the states and centre.

③ Japan's official development aid (ODA) →

in the region with the help of JICA.

- ④ Act east policy → to bridge the gap between south Asia and south east Asia.

eg: baladan multi-modal connectivity
IMT trilateral highways etc.

- ⑤ special status → have been given under Article 371A-J.

eg: A-371A → for Nagaland etc.

- ⑥ Other schemes such as :

(i), Krishi Udaan → for agricultural logistics help

(ii), smart cities in NER

Thus, Centre is bridging the gap between mainland and North-east that will boost trade and connectivity.

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

India has 18% of the world's population and just 4% of the fresh water resources. It indicates seriousness to preserve it.

Growing water scarcity

① Rising sea level $\Rightarrow$ due to climate change.

② melting of glaciers in the Himalayas.

eg: IPCC data suggest by 2100, all the glaciers in Hindukush will melt

③ Scanty rainfall $\Rightarrow$ due to change in monsoonal patterns.

eg: North India witnessing droughts.

④ Rising green houses gases $\Rightarrow$ causing water scarcity and land degradation.

Ways in which micro-irrigation systems contribute to sustainability:-

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

① Water use efficiency $\Rightarrow$ as drip irrigation's efficiency is more than 80-90%.

② Fertigation in timely manner $\Rightarrow$ to all the crops via drip method.

③ Equal amount of water to all $\Rightarrow$ reduces the unequal growth of plants.

eg: Sprinkler irrigation.

④ Energy savings $\Rightarrow$ due to low use of electricity, as people shift from flood irrigation.

⑤ Increases productivity of the crops $\Rightarrow$ due to high efficiency.

⑥ Reduces the environmental damages
such as eutrophication and
harmful algal bloom.

⑦ Reduces the weed growth and
hence the plant damages.

eg: gun irrigation method.

⑧ Reduces the chances of alkalinisation,
salinisation of the fields.

eg: prevent fertility loss via
sub-irrigation.

Thus, micro-irrigation along with
PM KISAN and PM Krishi Sishai
Yojana need to be implemented
to ensure sustainability.

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

India is the 4th largest railway network in the world but only 10-20% freights are transported through railways.

Issues pertaining to freight transportation

① Higher user fees $\Rightarrow$ due to high operating cost of railways (98%) that led to cross-subsidization.

② Delays in delivery $\Rightarrow$ due to high congestion in Indian rail sector

③ Lack of hinterland connectivity $\Rightarrow$ to the far-flung areas.

eg: North-east region

④ lack of multi-modal connectivity → to the sea-ports, roads, airways

⑤ Train safety issues → as goods are either stolen midway or railways face accidents.

strategies that can be adopted to overcome the issues & increase its share.

① creation of more DFC → i.e. dedicated freight corridors like western and eastern corridors.

eg: connect Delhi-Aizawal.

② lowering the charges → so that small business man prefer to use railways.

③ creation of more tech based models → to ensure safety of trains.
(like kavach)

④ Creation of dedicated railway stations for the freights only.

eg: in Mayurbhanj, Parulia or Jashedpur for coals.

⑤ Port led connectivity with industry and with railways.

eg: Kaladan or sittur port led to ease to business between north-east and mainland.

⑥ Increasing budget allocation for the railways eg: special packages for the freights.

Thus, Railways freight hold key place in India's "Viksit Bharat" dream

by 2047. Bibek Debroy and Khanna Committee recommendations should be followed.

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 renewable energy producer in the world accounting almost 40% of total energy of India.

Factors that have aided India in making impressive strides in renewable energy

- ① Nation green hydrogen policy → aimed to make India a global hub for hydrogen by 2030.
- ② Nuclear-energy cooperation → with many countries.
eg: Civil Nuclear deal with USA (2005-8)
with Japan, Australia, Canada etc.
- ③ Bio-CNG → compulsory to add Bio-CNG in LPG and PNG from next year.

④ E-20 (Ethanol 20% policy) → by 2026
boosting ethanol use in the energy
sector.

⑤ Solar schemes → such as PM KUSUM,
PM Saubhaya to create solar
energy at grassroot levels.

⑥ Hydro-energy boosts → as JL Nehru
termed dams as new temple for
India.

eg: Nardar Sarovar dam etc

Global front-runner steps

① International solar alliance → India
and France established ISA to
connect the world solar grid.

eg: One Sun - One World

② LT-LEADS → India aimed to

electrify all the railways by 2030.

eg: also, thrice in production of nuclear energy by 2032.

③ Net zero - 2070 and Panch-annit goals →

that aims to boost India's renewable energy to 500 GW and upto 50% renewables.

④ EV and Hydrogen based buses-trains →

are getting launched with the help of Scandinavian countries.

eg. Deal with Denmark

Thus, renewable energy can transform India's image globally as a responsible developing nation unlike China.

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)

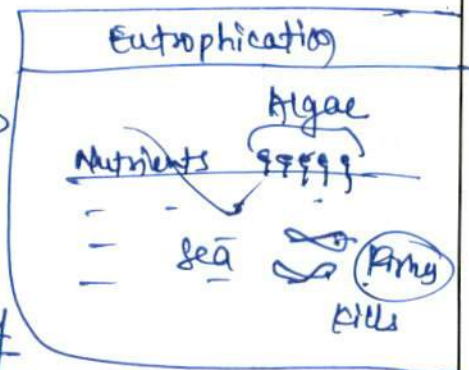
15

Environmental pollution refers to the decrease in bio-diversity of the region. India is on the verge of this crisis.

Ways through agricultural runoff containing fertilizers contribute to environmental pollution

① Eutrophication → due to influx of nutrients from agricultural runoff

② Harmful algal bloom → led to red tides which increases toxicity of waters.



③ Shellfish poisoning → that kills fishes and even harm humans when consume it

- ④ Invasive alien species in the water body that impact biodiversity
eg: Water hyacinth.

- ⑤ Alkalinisation, degradation, desertification, salinisation of the soil that reduces the fertility.

- ⑥ change in agricultural productivity that leads to degradation in food quality.

Measures can be taken to mitigate the impact of agricultural runoff :-

- ① change in agricultural methods need to shift from traditional to new ones.

eg: Precision farming,
Natural farming,
organic farming etc.

- ② use of micro-irrigation techniques

which reduces the eutrophication.

eg: drip, sprinkler, gun etc

③ Bio-fertilizers → made up of organic living beings such as micro-organisms.

eg: Anaerobena, spirulina etc

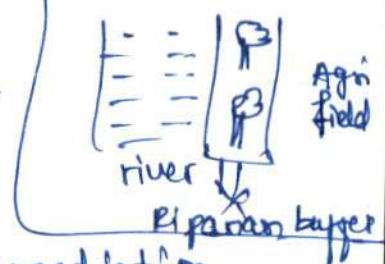
④ Nano-fertilizers → usage should be increased such as "Kalol" produced.

eg: No runoff as 90% are absorbed.

⑤ Point source treatments such as using riparian buffer.

eg: buffer of trees.

(Bio-remediation,
Phyto-remediation etc)



Thus, Use of new technology can help to reduce the agri-cultural runoff.

16.

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

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

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

15

Recent Shimla tourists influx pictures surfaced on internet that was worse than Bengaluru traffic. It indicates the vulnerability of Himalayan states.

growing influx leading to significant man-made disasters

① Ecological carrying capacity outbreath leading to ecological damages.
eg: landslides in the Shimla.

② land subsidence as seen during Joshimath due to over-extraction of waters from ground.

③ Pollution as use of plastic controls creating marine problems.

④ himalal lake outburst flood $\Rightarrow$ in
the states due to rise in
temperature (vehicle pollution).

eg: Sikkim cholomak flood.

⑤ Earthquake prone regions of Himalayas
lies in zone - IV $\Rightarrow$ over-construction
and urbanization leads to infrastructural
damages.

⑥ Cloud-bursts $\Rightarrow$ became normal
eg: chamoli, kedarnath etc

Measures that can be implemented to
prevent such disasters

① Early warning system $\Rightarrow$ to all the
Himalayan states.

② Using hangotri tourist model $\Rightarrow$ to
stop excess tourists by limiting
per day tourists.

③ Alaskan model ⇒ by promoting trash-bags in the car when entering such zones.

④ Vulnerability zone analysis ⇒ & aware peoples with capacity building measures.
eg: Mock-drills for earthquakes.

⑤ Preparedness ⇒ in any crisis situation by building relief shelters.
eg: structural buildings.

⑥ using AI and other technology ⇒ to raise awareness among tourists.
eg: social-media guidelines.

Thus, Himalayan states need to be protected with Alaskan tourist model.

17.

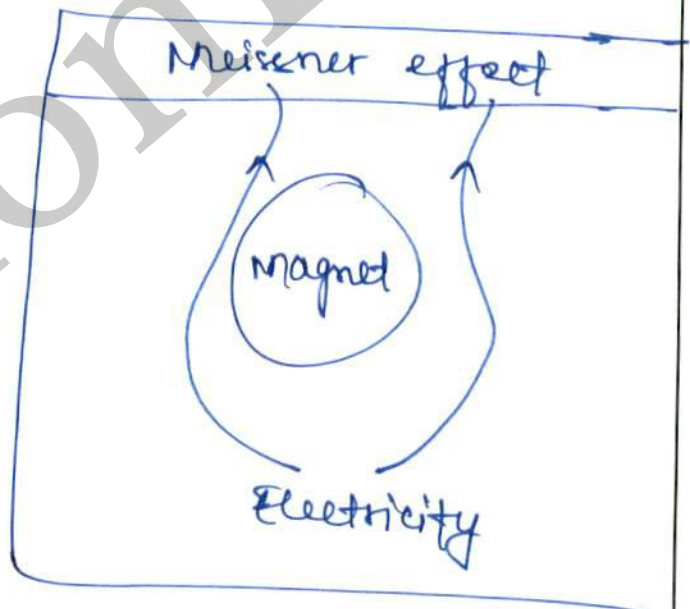
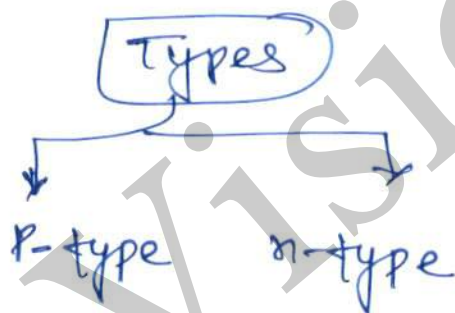
सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)
How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

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

Super-conductors are the devices which transfers the energy without any loss at ^{below} critical temperature. ($< 273\text{K}$)

eg: at sub zero temperature they tend to show the Meissner effect which diverse from magnetic fields:-



ways in which super-conductors fuel innovation in diverse fields

① Magnetic levitation → it can give rise to Maglev trains which

• will not waste any energy.

② Medical diagnostic $\Rightarrow$ to conduct
Magnetic Resonance (MRI) scans
without any damages.

③ Electricity transmission to long
distances $\Rightarrow$ without even converting
its high and low voltages.

④ Quantum computers $\Rightarrow$ to develop
the quantum dots, quantum
communication, etc

eg: Super-imposition and
(Position)

entanglements will become easy.

⑤ Space sector $\Rightarrow$ in sending
data to space without any loss.

eg: launching missions
like Chang'e, NISAR etc.

⑥ Defense sector $\Rightarrow$ to develop missiles and rockets using super-conductivity

eg. Agni-6 missiles

However, there are Challenges in achieving super-conductivity at room temperatures :-

① Recent South Korean claim to make super-conductors at room temperature was proved wrong.

② Achieving such low temperature $\Rightarrow$ made it no usage in daily lives.

Thus, Super-conductors can fuel innovation when scientists find the way to make it at room temperatures.

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)

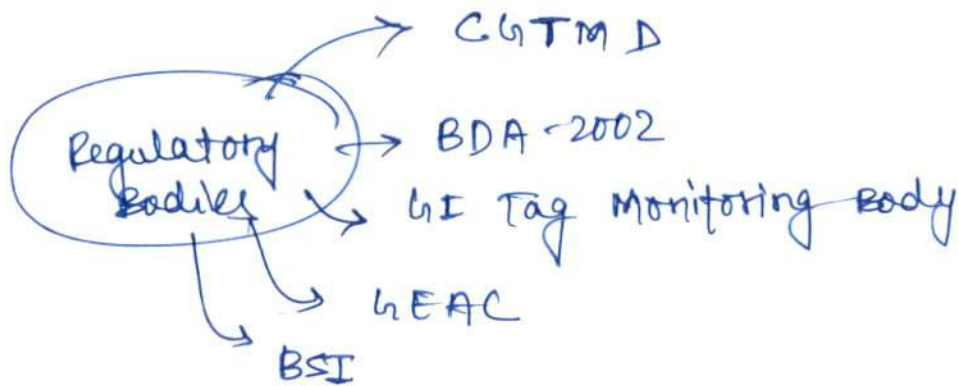
India is the signatory of TRIPS
agreement of WTO that ensures
the compliance of IPR guidelines.

Indian laws for IPR

- ① Trade marks Act ⇒ to protect
the company unique products.
- ② Copyright Act ⇒ to protect individuals
unique styles.
eg: Copyright for books.

- ③ GI Tag-1999 ⇒ to promote indigenous
products.
eg: Makhana (Bihar)

- ④ Intellectual property rights ⇒ to protect
Innovations.
eg: Nano-sensors etc.



These create challenges and hamper the commercialisation of IPRs in India.

- ① Multiplicity of bodies $\Rightarrow$ led to delay in granting the protection rights.
eg: ANMARK, FASAC for food.
- ② Commercial challenges $\Rightarrow$ due to adoption of compulsory licensing.
eg: during COVID-19 vaccines without permission of companies.
- ③ Evergreening is not allowed $\Rightarrow$ that hampers profit interests.

• of the companies (after 20 years).

④ strict laws regarding traditional
use of resources under biological
diversity act-2002.

⑤ Collusive corruption $\Rightarrow$ in the lower
levels to grant IPR rights.

⑥ Lack of proper monitoring and
regulatory authorities.

eg: No proper inspections.

Thus, IPR regimes need a revamp
adhering to the principles of paris
and WTO. It needs to be
balanced to promote ease of doing
business in India.

19.

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

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

15

Integrated theatre commands (ITC) refers to integration of all 3 services via a 4-star rank officers who manage the control.

Challenges in creating ITC

① Reluctance of all 3 forces as they have to work under other authorities.

② Lack of Political will to revamp the military.

eg: Agniveer faced criticism, so govt is on backfoot

③ Infrastructural challenges such as

• creating new offices and posts.

eg: Sena Bhawan is getting
created in Netaji Nagar, Delhi

④ Chief of Defence Staff ⇒ has been
already created that also holds
similar task.

ways in which ITC can lead to
greater integration and rationalisation

① Better co-ordination between all
the 3 services ⇒ in case of any
future wars with china or Pakistan.

② Management of resources ⇒ and reduce
its wastages.

eg: Arms and communication.

③ Reduces multiplicity of forces ⇒
on one border.

eg: on chinese border, both

ITBP and Assam Rifles are deployed currently.

④ Faster decision making during crisis → as Kargil war saw such delays in decisions.

⑤ Nuclear commands → as the advisory body along with CDS. It can ensure "no-first use" nuclear doctrine of India.

Thus, Integrated theatre commands is recommended by Sherkattar and Madubhar committee. It will ensure resourceful use of 3 services.

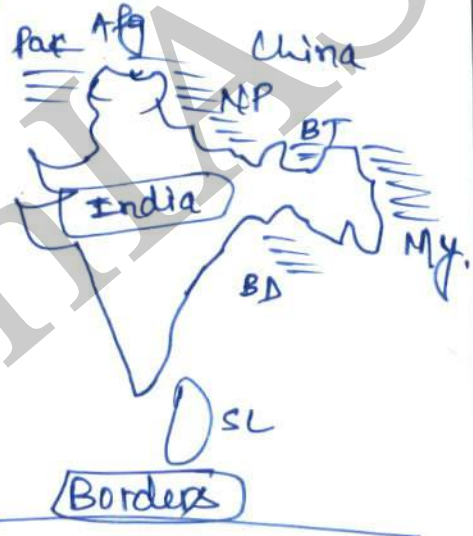
सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

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

India is bordered by 7 countries on its northern side amounting 15000 km of land borders. Also share 7500 km of marine boundaries.

Treating border villages strategically for enhancing border security



① Reverse migration → due to job opportunities in the first villages.

② Road connectivity → round the years especially in the himalayan states.

eg: Ladakh, Pangong Tso, kalawan, Tawang etc

③ Multimodal connectivity → with

available airstrip in case of emergency.

eg: in Arunachal Pradesh village

④ Social facilities $\Rightarrow$ such as education, health, are key to ensure good relationship with friendly neighbours.

eg: "Roti-Beti ka rihita with Nepal" - "Sushama Swaraj"

⑤ High tech connectivity $\Rightarrow$ such as 5G internets and electricity - 24/7.

Measures being taken by the government in this regard

① Border Village programs $\Rightarrow$ especially for Himalayan states to provide world class facilities.

② Infrastructural development $\Rightarrow$

in the Himalayas.

eg: EIA was exempted for 100 km
nearing borders areas.

③ Small-scale industries → through
PM Mudra and PM SVANidhi schemes
in such region.

④ Electricification of all the villages
by 2022.

⑤ Udaan scheme → for the regional
connectivity especially in far-flung
regions.
eg: Leh airport using Viability
gap funding

Thus, Borders hold key for international
security. India using smart fencing,
Smart walls under BOLD-OUT to
ensure safety.

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