



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. : 45885442

अभ्यर्थी का नाम/Name of Student : ISHITWA ANAND

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

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

केंद्र
Centre

Delhi - Keroi Bagh

H. Kohli
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 आरख, 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)					



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.

VisionIAS

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

Food Processing Sector (FPI) in India accounts for 13% value of total exports of India & gives employment to 12-13 million population

- ① Value of exports have increased multifold in recent years
- ② Schemes like PM-Formalising of Micro-Food Processing Industries are major cause
- Rapid growth of Food processing Sector
- ③ Sectors → Honey processing
→ Horticulture processing
→ Meat processing
- States: Processed meat of Buffalo: India - 4th largest / Fisheries - 2nd largest / other areas are horticulture

Food Safety Challenges

① Downstream Challenges

1.1 Issue of Adulteration → (eg)

Urea used for making milk

1.2 Diversion of subsidies for non-
agriculture manufacturing

② Accessibility → lack of market
integration challenges accessibility

③ Affordability → Processed foods
are sold generally higher prices
→ not affordable for general population

④ Mainly export oriented → leads to
lack of nutritional security in India

Tea → Vitamin D deficiency - 35%
Shunting - 34% Wasting - 19%

↳ Extrinsic based fortification

Initiatives for addressing nutritional
challenges

↳ Availability of e-Rupi / e-chaupal
for preventing diversion & prevent
adulteration

Thus, it ensures the goals of SDG:2
No HUNGER

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)

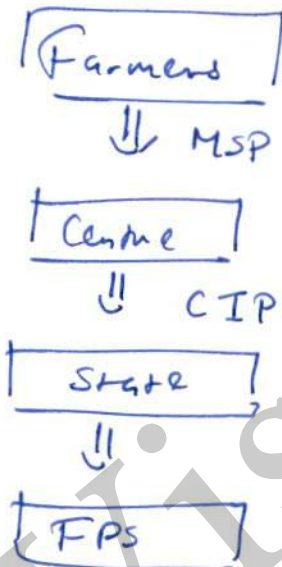
Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

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

Recent incidences of non-functioning of PDS' fair price shops has hooked for transformation systems

Fig Flow chart of PDS



→ The issue is after the grains have been forwarded by state to Fair price shops

Issues → high charges
Low quality grains
Replacing grains

The NSA, 2013 → ensures the food security of 67% of the population → around 80 crore.

Evolving FPS transformation

① Given by committees as the Sharda Kumar Committee

Step by step evolving process :

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

- ① Integration of FPS as the focal point of grain dissemination through Targeted Public Distribution System
- ② Ration Cards → for identifying actual beneficiaries & eliminate ghost beneficiaries
(eg) Around 32% get benefit who are not entitled to
- ③ e-Technology → e-PDS → (eg) Arun PDS of Arunachal Pradesh → manages the integration of Fair-Price shops
↳ Database management → for checking actual dissemination of grains
- ④ One Nation, One Ration Card → to allow the migrant beneficiaries to attain benefits of Fair Price shops

Thus, imperative to utilise e-technology for targeting actual beneficiaries. Also blockchain can be used for decentralized management of grain data

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
Candidates must not write in this margin

Agri-tech startups have helped to increase the farm productivity via efficient climate-smart agricultural practices & also established linkages through FPOs for market access

Enhancing Agricultural Productivity

① Micro-irrigation Practices

↳ use of Partial Root drying, Drip irrigation etc for enhancing productivity

② Scientific Techniques

↳ use of Hydroponics, Aeroponics

eg) Startups in Vizhinjam Kerala
↳ increased productivity by 45%

③ Integrated Nutrient Management

↳ Drone based fertilizer spreading

- ④ Better quality seeds → Monsanto's
• Bt-cotton seeds → increased cotton
Production

Enhancing Market Access

- ① Integration with FPOs & local
co-operatives
↳ eg Mahagrapes agri-startup
in Maharashtra → seedless grapes
- ② Use of e-technology → eg Digital
dracker for linkages
- ③ Grading & sorting through custom
centres.

Case Study → Sathyadri Agri-tech Startup

- ↳ Facilitation of linkage transports
- ↳ Better agri-governance policies
via stakeholder engagement
- ↳ Largest exporter of processed
fruits in region

Thus, Agri-tech startups have a
major role to play in achieving
goal of \$100 bn dollar agri-exports

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

Land Reforms in India have been plagued majorly due to non-availability of authorised & correct land records

eg) Land Ceilings Act → could not materialise due to Benami Transfers & subsequent non-availability of actual land records

① PM SUAMITVA : digitizing the actual land records for ease of land transfers

Digitization of land records in India → ② Benami Project of Karnataka

③ Digital India Land Record Modernization Plan (DILRMP) as aid in monitoring land records

Role in effective implementation

① Determining criteria for Medium,

Small & Marginal farmers in India

↳ How it helps? → Only benefits given to those who are really in need
→ Reduce PSC lending norms for big farmers & aid small & marginal farmers (i.e.) 89% small & marginal

(2) Land Ceilings Act → state laws
↳ digitization can identify true owners of lands → helps in monitoring

(3) Tenancy Act → forced evictions by landlords → ∴ no formal records & only verbal agreement
↳ Digitization can aid in litigation of disputes

(4) Land Pooling → for developing the economics of scale
↳ needed to ensure Climate smart agriculture

Thus, digitization helps in ensuring India's transition to a sustainable & inclusive agriculture & land management

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

Demographic Dividend was described first by David Bloom as the potential of growth generating due to change in population structure of a country.

i.e. Working age group (15-59) larger than dependent population

⇒ # India's Demographic Dividend

① From 2005 - 2055 → maximum during 2041

② Peak in 2038 → 61% of Population in bracket of (15-59) years old

③ Growing skilled population

Adopting manufacturing led growth

Issue: Manufacturing sector stagnant at 17-19% of GDP

↳ Only Sr. Indian having formal skill training

① Manufacturing led growth leads to multiplier effect

(eg) China's economic boom due to this

② Need for high Gross Capital Formation → currently on 27-27% of GDP

↳ Capital assets will aid in production

③ Develops export-oriented goods
↳ leads to accumulation of foreign exchange

④ Skilling of population → manufacturing sector is a huge revenue for employment generation

↳ currently 28% of population

→ One District One Product model

Manufacturing models → Towns of export excellence

↳ Capital goods production

Thus, we must ensure re-skilling of population for manufacturing sector to ensure the reaps of 'demographic dividend'

6.

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

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words) 10

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

India has a huge coastline of 7517 km & around 5100 km / 7517 km is vulnerable to one or more natural hazards

→ Arabian Sea Cyclones → due to warming caused by climate change
(eg) Cyclone Biparjoy

→ Increased Coastal Floods → due to deluge caused due rising levels of sea

Growing natural hazards

→ Rising sea level → India's east coast is emergent coast → leads to high vulnerability → chances of community as well as the economic disruption of ports & harbours

Strengthen Resilience

⇒ stepped holistic approach required

① Step 1 : Understanding Risk

→ Vulnerability Assessment of the Coastal Communities

→ Hazard Location of cyclones

→ Monitoring sea-level changes

② Step 2 : Inter-agency coordination

Integration of

- Coastal guards
- National Crisis management communities
- Local communities

③ Step 3 : Structural mitigation

By Use of Croynes, Breakwaters



Fig - Croynes

④ Step 4 : Climate Change Assessment

→ To understand potential challenges

Utilisation of Early Warning Systems

& Message based communication technology

Important to ensure this for India's

Maritime vision : 2030

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)

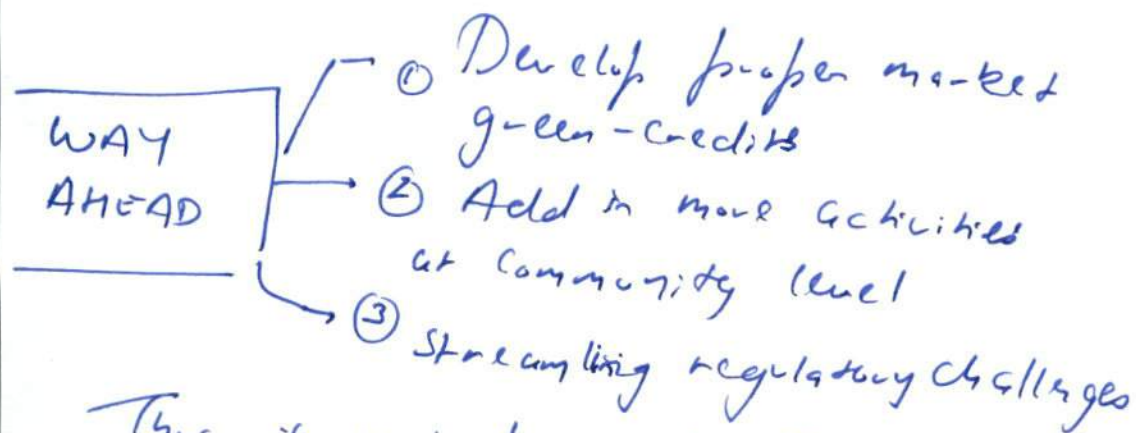
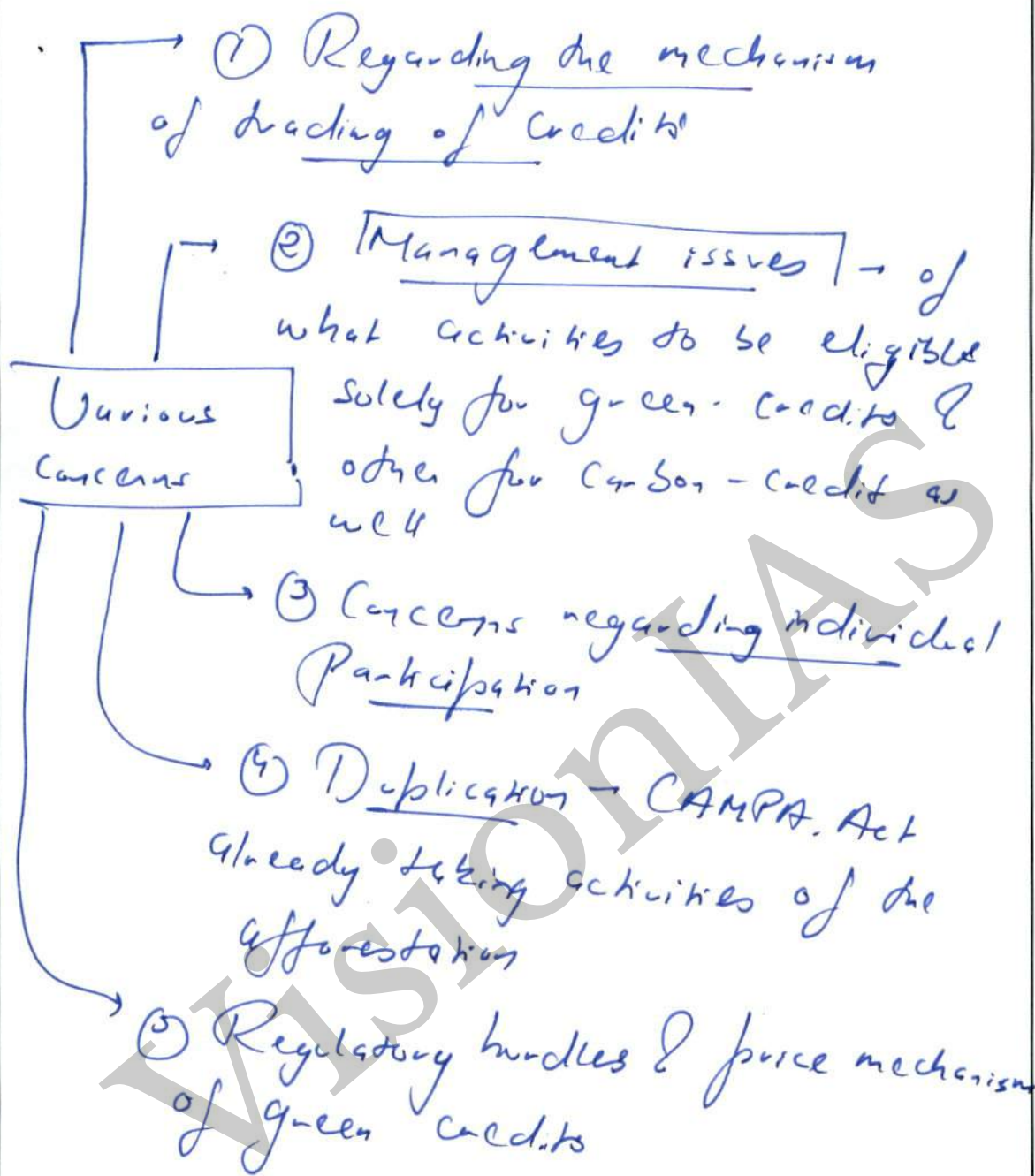
How does the Green Credit Programme extend beyond carbon management to promote a more sustainable environment in India? What are the various concerns about its implementation? (Answer in 150 words)

10

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

Recently Green Credit Programme was initiated to ensure sustainable practices for future environment → given by ICFRE & rules laid by MoEFCC

- ① Green credit includes voluntary activities like: afforestation, water conservation etc
- ② It is also eligible for carbon credits but not vice-versa
- Extend Beyond Carbon Management → ③ Carbon credits → compliance for companies etc but Green credits can be taken by individuals as well
- ④ More holistic in nature
∴ incorporates resilience development like water harvesting



Thus, it is in line with SDG: 15 Life Above Land & SDG: 14 Life Below water

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 हदिए में नहीं लिखना चाहिए
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Navigation for Indian Constellation in an Indian made, indigenous satellite system → earlier known as IRNSS

↳ 7 satellites → 3 Geo-stationary orbit
↳ 4 Geo-synchronous orbit

↳ Range : Indian Continent & 1500 km beyond the borders

Need for NavIC :

① Kargil war, 1999 → USA had declined to give Military Positioning services to India
↳ this led to huge casualties
↳ required need for indigenous GPS system

- (2) Attain Strategic Autonomy - in times of war, disputes, clashes by India using Military or Restrictive Positioning services to monitor LAC areas like Depsang & Demchok plains
- (3) Reduction in costs - for obtaining services of other system
- (4) Standard Positioning Service - for civilian use - based on indigenous data points
↳ better accuracy & integration upto smetras
- (5) CAGAN project - by ISRO & Airport Authority of India - enables targeted take-off & landing usage
- Global systems
- ↳ GPS - USA
 - ↳ GLONASS - Russia
 - ↳ BeiDou - China
 - ↳ Galileo - European Union
- Thus, NavIC has utilisation for India's 'Atmanirbhar Bharat'.

9.

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

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

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

PMCA, Act (Prevention of Money Laundering Act), 2002 defines money laundering as the process of making proceeds from illicit activities made to appear legitimate.

① [Cyber-enabled financial crime]

① [Terror financing] → use the use of harams & cyber-methods like dark web

(eg) used to finance ISIS activities

② [Non-state Actors] → conducting crimes via cyber-enabled crimes

(eg) Extortion by Hamas → earned \$150 million from cryptocurrency

(3) Triping & road-dripping of money laundered due to malware attacks on softwares used to detect the issue.

(4) Cyber attacks for stealing sensitive information → (eg) Pegasus attacks
↳ Later used for money laundering offers

(#) How can government address

(1) Implementation of National Cyber security strategy → to understand the Risks

(2) Inter-agency coordination → Financial Intelligence Unit alongwith Financial Action Task Force (FATF)

(3) Global Cooperation → Alongwith governments like Double Taxation Avoidance Agreements

Thus, changing methods of money-laundering require holistic drapping.

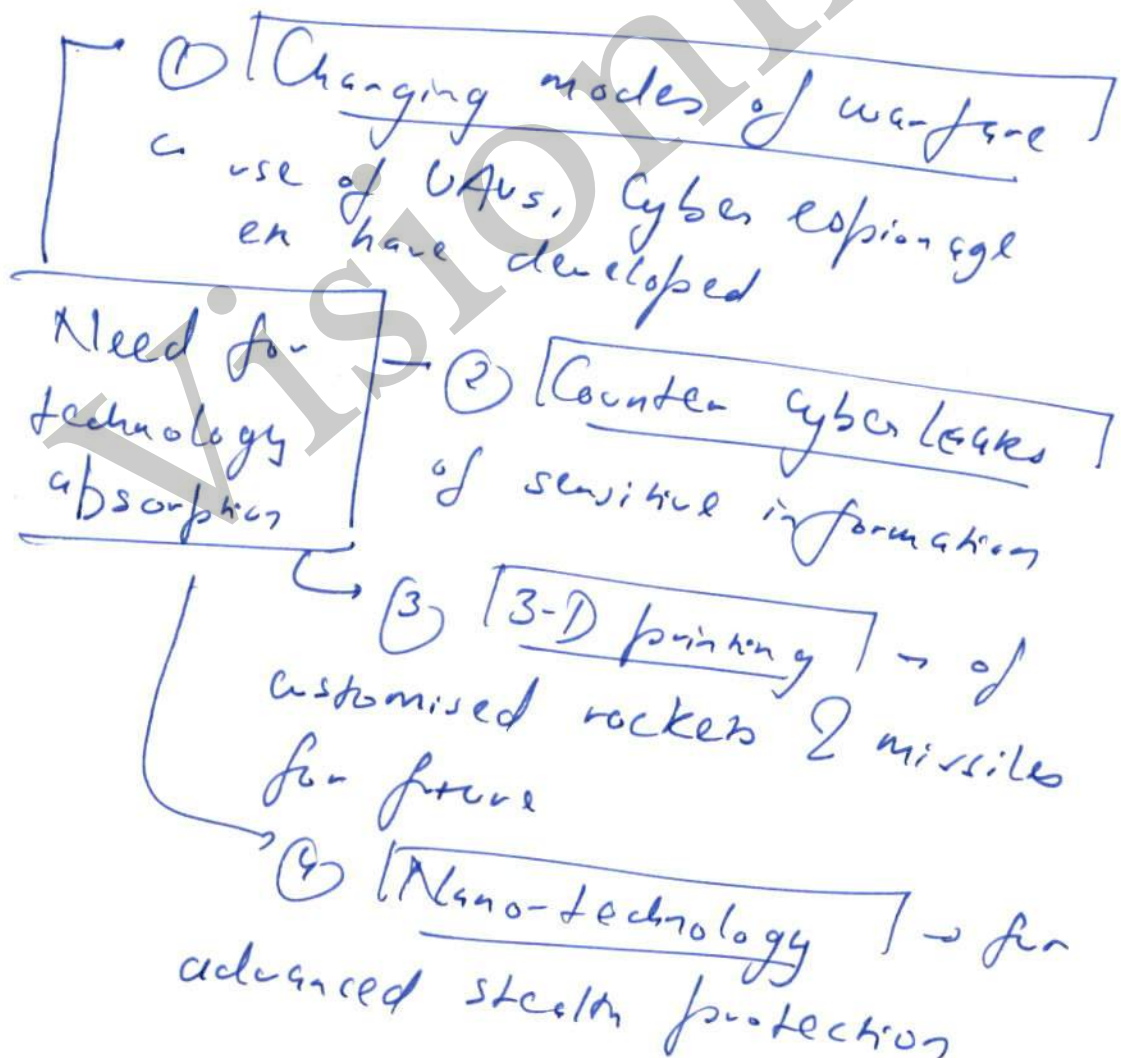
10.

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)

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
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Mission iDEX (Innovation for Defence Excellence) aimed at assimilation of technology in the defence sector of India.



⑤ Technology aids in better co-ordination

Key Defence sector → use of Geo-spatial technologies to manage adversarial threats

⑥ Percolation of technology to subversive non-state & state actors → need for defence forces to also get equipped

Challenges that India can face

① High capital investment → already Defence budget is high → any increase can attract challenges

② Support from developed world
Key MCO 9B reaper drones from USA
↳ challenge of maintaining autonomy

③ Skill training of armed forces

④ Low indigenous production → new schemes like idex & Viability Gap funding started

↳ India must ensure technological development in defence sector

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

15

As per Economic Survey,
total investment in North East Region stood at meagre 2%.

- Issues faced
- ① Complex Geography → of high & porous terrains
 - ② Ethnic Conflict Prone region
↳ Conflicts between Kuki & Meikis in Manipur
 - ③ High Tribal Population
↳ Majority of tribes like Mizo, Mishmi, Dajla, Achan etc
↳ hinders industrial development
 - ④ Issues of insurgency
↳ Unrest Nagling movement in Nagaland & ULFA movement

in Assam etc → challenge the process of industrial development

⑤ Issues of Shifting Cultivation

- ↳ Shifting cultivation practiced
- ↳ issues like trade development not catered by tribal leaders

⑥ Non-implementation of tribal rights

- ↳ issues of governance deficit in the region
- ↳ could have developed Minor Forest Produce base agro-clusters for export development

⑦ Issues of Natural Hazards

- ↳ Major earthquake prone region
(e.g.) Sikkim, Arunachal Pradesh etc
mainly in Zone V or Zone VI

↳ Landslide vulnerability → Arunachal Pradesh

⑧ Vicious cycle → only connected via Siliguri Corridor → lack of transport development → trade hampered

Measures that have been taken

- ① Mega Food Park for North-East region in Nalbari, Assam
- ② Mission Organic Value Chain Development for North-East region (MOVCDNER)
↳ organic farming for export development
- ③ Promotion of Tribal Products - North East Region (PTP-NER)
↳ Trade development in tribal products by TRIFED
- ④ Industries → Digboi refinery
↳ Bongaigaon refinery
- ⑤ Security → Security Related Expenditure
Special packages → (₹)
₹ 1500 crore for Backland development
Thus, North-Eastern region must be integrated to ensure goal of 'Atmanirbhar Bharat'

12.

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

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

उम्मीदवारों को
इस हिसाब में
नहीं लिखना
चाहिए
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Water scarcity, explained by Falkenmark Index can be defined as the availability of water less than 1000 cm³/per person.

India: Currently 1400 cm³/person is now water stressed but if not managed then it can soon turn into water scarce country.

Climate Change & Water Scarcity
(Explained via Mihir Shah Report)

① Loss of water in aquifers → due to over-extraction of water that reduces water table

key Punjab → 70% groundwater exhausted

② Reduced hydrostatic pressure
due to climate change → high heat leading to capillary action → salt efflorescence → not allows rainwater to percolate → water scarcity

③ Rainfall variability
key → North-western & western India
↳ about 50-60% rainfall variability

④ Changes in precipitation regime
→ fewer days of high rainfall
→ leads to huge surface runoff

⑤ Climate Injustice
Case study → Conindpuri, Delhi
↳ most vulnerable groups suffered

Micro-irrigation systems:

① Drip irrigation system → ensures slow droplets of water

↳ leads to better absorption of water molecules

↳ can be incorporated with 'Fertilization' for reduced fertiliser usage

(2) Inhibit salt pan formation → in dry regions of India

↳ leads to better soil fertility

(3) Prevent weeds & pest attacks

↳ (eg) In Karnataka → micro-irrigation prevented pest attacks

(4) Replenish groundwater → (eg) Bhungroo initiative in Gujarat

(5) Tackle Hydro Salinization →

lack of holistic management of both surface & groundwater management

(eg) Through Restrictive Drip Irrigation & Partial Root drying

Thus, NICRA (for climate resilient agriculture) envisions micro-irrigation as most potent tool.

13.

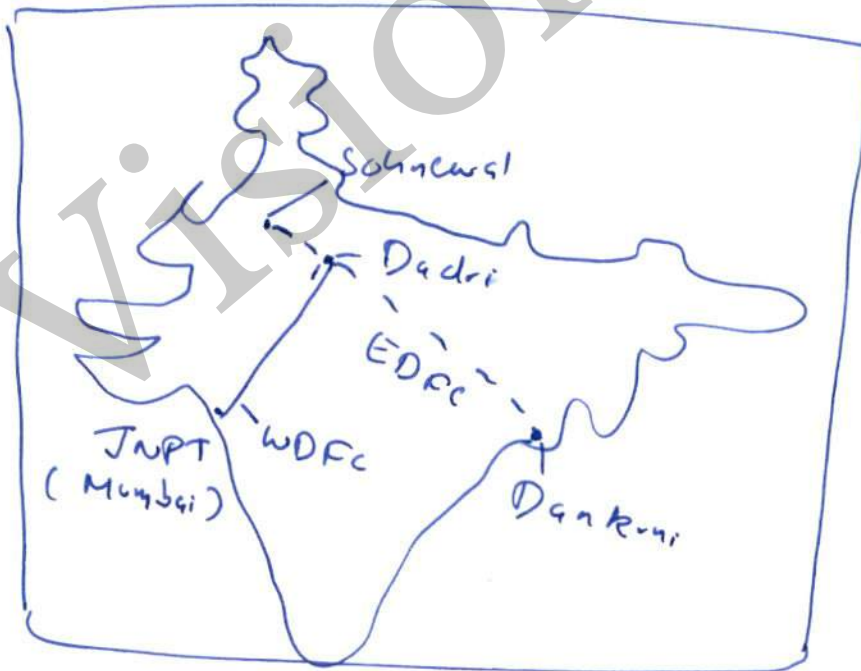
भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल ढुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

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

उम्मीदवारों को इस हिसाब में नही लिखना चाहिए
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Recently, the Eastern Dedicated Freight Corridor (EDFC) has been completed from Sohnewal in Punjab to Dankuni in West Bengal

Fig Freight Corridors



Issues in freight transportation

① Challenges of freight corridor

↳ dedicated channels are not viable due to reduced movement of other vehicles

② Time Delays → Indian Railways plagued with high congestion → leads to ease in transportation

③ High Freight cost → about 85% of freight movement is via roads & 10% by rail → high costs hinder movement of freights

④ Issue of cross subsidization → of the freight trains

⑤ Loackages → in insurgent areas like the red-corridor (Chattisgarh, Odisha region) → smuggling & stealing of freight

Strategies to develop freight movement :

① Dedicated Freight Corridors → by Indian railways → to speed up

movement of goods & also avoid leakages

(2) Logistic depots → for ensuring multi-point connection of goods

(3) Freight Value Chains - From raw material to processed goods

(Eg)

Raw ⇒ Kisan Rail ⇒ FPC ⇒ Market
Fruits (cold storage) ⇒ Value Chain

This can ensure multi-spatial development of region

(4) Lower freight costs → cross-subsidization method to be lenient

Thus, these policies can aid in schemes like One District One Product & Port-led development through development of 'RAILMALA'

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

15

India has achieved its intended National Determined Contributions (NDCs) well in advance of 2030 & also is on way to fulfill Panchamrit goals.

Ministry of New & Renewable Energy
Goals of 500 GW via
Renewable sector is priority

Renewable Energy sector → Current capacity - 194 GW

↳ Total share in energy generation is around 22-1.

↳ Percentage of total installed capacity = $\frac{194}{462} \text{ GW} \rightarrow \text{around } 40\%$.

Factors of transition

① Availability of Resources

→ Solar energy - 750 GW potential of India

↳ Till now only 84 GW → long way
of margin to develop

→ Wind Energy → large coastline → till
now 46 GW developed out of total
potential of 700 GW (100 metres height)

② Global Initiative development

- International Solar Alliance championed
by India After 2015, Paris conference
- One Sun One World One Grid
Initiative by India (OSOWOGI)
- Recent initiative of Global Biofuel
Alliance by India

③ Domestic Policies

- PM KUSUM → agri-voltaic development
- Solar Rooftop Scheme
- Offshore wind Energy policy
- E20 → ethanol 20% blending programme
- SATAT → alternative Biogas as a
fuel

④ Development in Nuclear Power

- currently 2% of total installed capacity
- Recent loading of Prototype Fast Breeder Reactor (PFBR) in Kalpakkam
- Operationalization of Kakrapar reactor of 700 MW
- Bharat Small reactors - in budget 2024-25

⑤ National Green Grid → to supply energy from deficit surplus to deficit region.

⑥ Green Hydrogen Policy → for transitioning hydrogen based economy

Thus, India has been vociferously advocating for global energy transition which aligns with its aim of 'One World, One Earth, One Future'

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

Recent incidences of algal blooms in Kerala & Lake Retba in Senegal turning pink are indicators of environmental pollution

Fertilizers & Pesticides Contributing to environmental pollution :

① Eutrophication of lakes → also called as aging of lakes
→ causes increased phytoplankton grow in lakes → leading to algal blooms → lakes become polluted & devoid of biodiversity

② Dead zones → phosphate & nitrogenous fertilizers lead to high proliferation of planktons → this

reduces the dissolved oxygen (DO)
in the water bodies → leading to
dead zones

(3) Coral Bleaching → high pesticides
& fertilizers pollution causes corals to
die → corals get stressed
(eg) In tropical waters → corals near
Goa, Kerala

(4) Groundwater pollution → leads
to poor health challenges
↳ agricultural runoff → contaminated
water infiltrates into soil
(eg) Fluoride Pollution / Phosphatic
pollution

(5) Decline in Agricultural productivity
↳ also leads to health challenges
via bioaccumulation & bioamplification
of fertilizers & pesticides

(#) Measures that can be taken :

- ① Integrated Nutrient Management
- ↳ reduce fertiliser usage (PMPRANAM)
 - ↳ use natural fertilisers like neem oil, Castor oil
 - ↳ use ideas of zero-budget natural farming → use beejamrit.

- ② Integrated Pest Management
- ↳ Cultural control → non-application of endosulfan, Carbofuran, DDT
 - ↳ biological control → natural pest control method like wasps, earthworms
 - ↳ mechanical control → traps & pest coils

- ③ Micro-irrigation → to reduce the surface runoff

Thus, controlling environmental pollution is a constitutional mandate as per Article 21 & Article 48A.

16.

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

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

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

15

Carrying capacity can be defined as the maximum tolerable limit of any environment

① Threat to Carrying Capacity of Himalayan States by Tourists:

① Construction activities → like hotels, resorts to accommodate tourists → leads to land subsidence

eg Jashimath Land Subsidence

↳ Caused due to rock piping & rock blasting of vulnerable rock topography

↳ Cracks have developed in the walls of many houses due to subsidence of weak topography

② Water Crisis

→ Many Himalayan states facing the issue of water crisis (eg) Uttarakhand & Himachal Pradesh

(eg) Shimla Water Crisis

↳ local rivers have drained up because of reduced water flow
↳ to meet demands of tourists → high water usage

③ Solid Waste Management

→ Causes of insect infestation & also High Altitude pollution

↳ (eg) Valley of Flowers compound area

↳ touring areas → tourists often throw away packets & gears in the open leading to disasters

④ Deer busts

↳ Recent Goat outburst in Sikkim

Even though a structurally occurred but
mountain bound lakes collapsed due to
tourist activities leading to change in
local topography

→ ① Analysis of local topography
via Environmental Impact
Assessment → (eg) Mishra Committee

Report on Toshington
warned the issues

Measures
to be
implemented

→ ② Regulating tourist
flows → (eg) Shimla

highways overcrowded from
tourists

→ ③ Local deconcentration of
communication → cars, trucks
to not be allowed at high
altitudes

Thus, Himalayan ecosystem is fragile
& must be protected from future
future mishaps.

17.

सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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Recently, news of LK-49 a super-conducting material developed by South Korea, shook the scientific fraternity.

① Materials that do not possess any resistance while transmitting energy.

What are superconductors

② Such materials exist but below absolute temperature i.e. -273°C

③ They do not cause transmission losses

④ LK-49 : could not certify the claim of superconductivity at room temperature

Superconductors : Super material!

① Field of Information & Technology

- (eg) Can be integrated to computer system for IoT compatibility
- (eg) Internet expansion fields - idea of LiFi can be enhanced

② Field of Nanotechnology:

- Can be used for heat transfers & capacitors in technology
- reduce electricity transmission losses

③ Field of biotechnology

- Targeted drug delivery systems can be enhanced
- Superconductors can be used for Brain Link development
(eg) Neuralink of Elon Musk → can be used for it

④ Field of Defence technology

- used in weapon development

↳ increased stealthy development on battle tanks

③ Field of Renewable Energy

↳ used for Battery Energy Storage systems → no losses of energy

↳ developed as Grid mechanism

↳ Used in Green Hydrogen Mission for splitting of hydrogen & oxygen

↳ Used in batteries of electric vehicles → to enhance usage of energy

Thus, superconductivity has immense potential application in diverse fields. Need to develop it to ensure scientific supremacy in space technology, nano technology etc.

18.

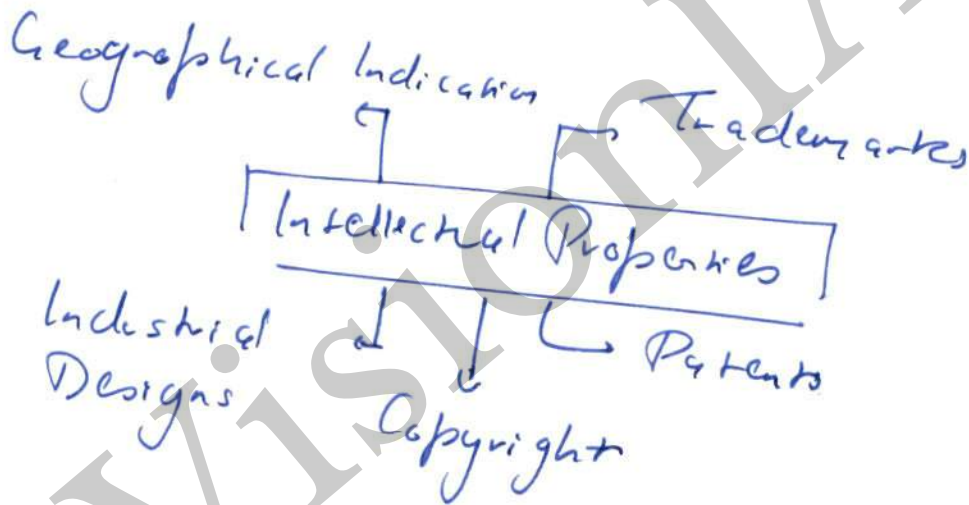
यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तार वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

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

15

Intellectual Property can be defined as the creation of mind, intellect, artistic expression etc.



Various IPR laws in India

① Patent Act → grants permission for 20 years to patent holder
↳ field of novel invention etc gives Patents
↳ issues of greening of patents

② Geographical Indication Act

- ↳ grants IPR for 10 years
- ↳ unique, local indigenous product of a region

③ Copyrights Act

- ↳ to artistic expressions → applicable for entire lifetime + after 60 years of death of copyright holder

④ Protection of Plant Varieties & Farmers Rights

- ↳ developed to protect IPR of developers (breeder), researcher & farmers

- ⑤ IPR treaties on genetic resources & traditional knowledge with WIPO

Challenges of IPR :

- ① Enforcement challenges → issues of delay in enforcement

↳ lack of enforcing agencies → leads to delay in litigation & protection

② Regulatory challenges → such as protection of IPR rights

↳ issues of Compulsory licensing &

Patent evergreening i.e. minor tweaks in existing product

③ Administrative challenge

↳ issues of bispirocy → (eg) Lengthy

Court battle on neem's property rights

↳ Delay in patent grants

(eg) Avg days - 300 - 1000 days

In USA - patent given in 1/2nd of Indian time

Thus, need to strengthen IPR regime for a developed ecosystem & integrate zeal of innovation

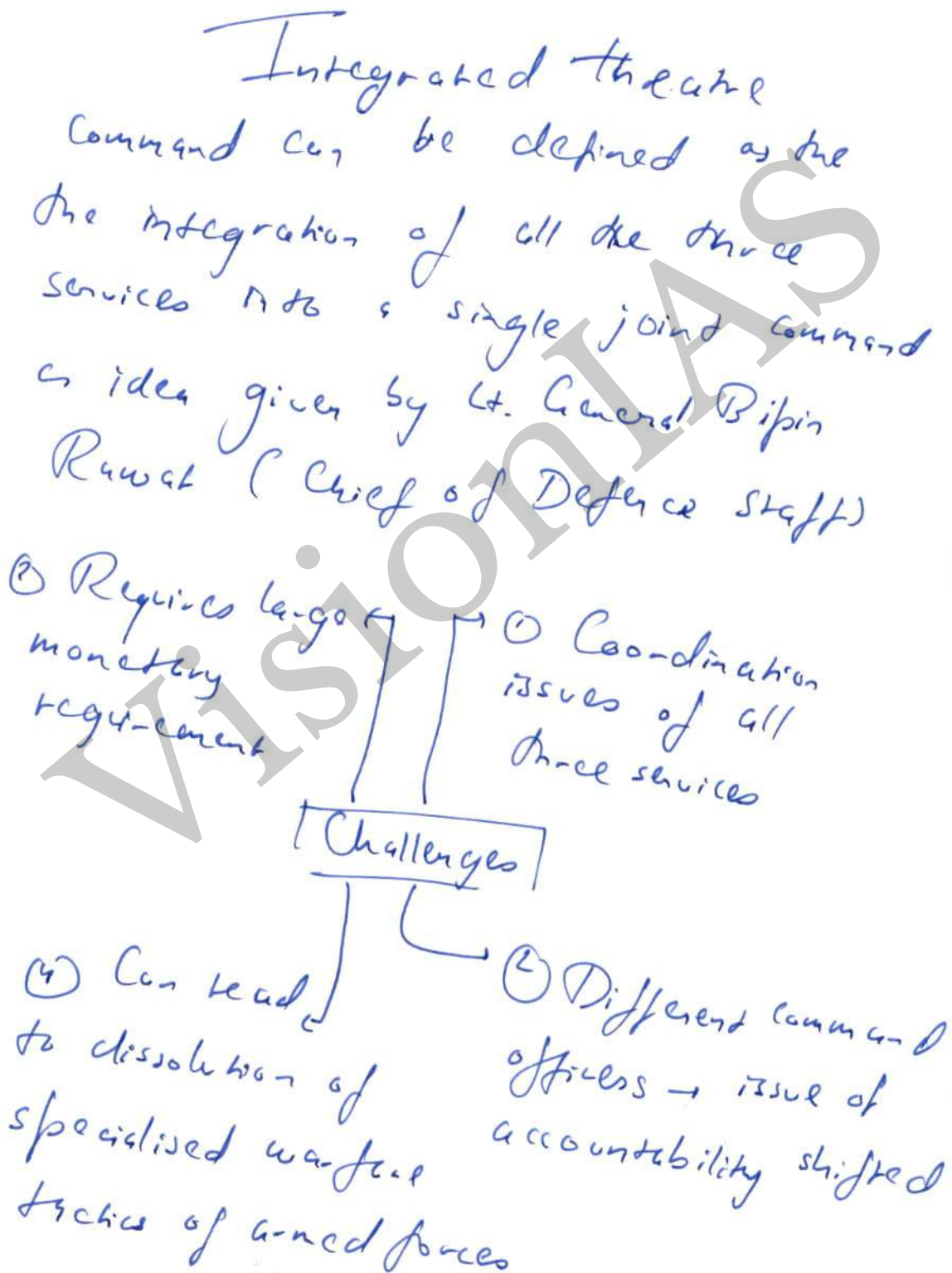
19.

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

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

15

उम्मीदवारों को इस खण्ड में नहीं लिखना चाहिए
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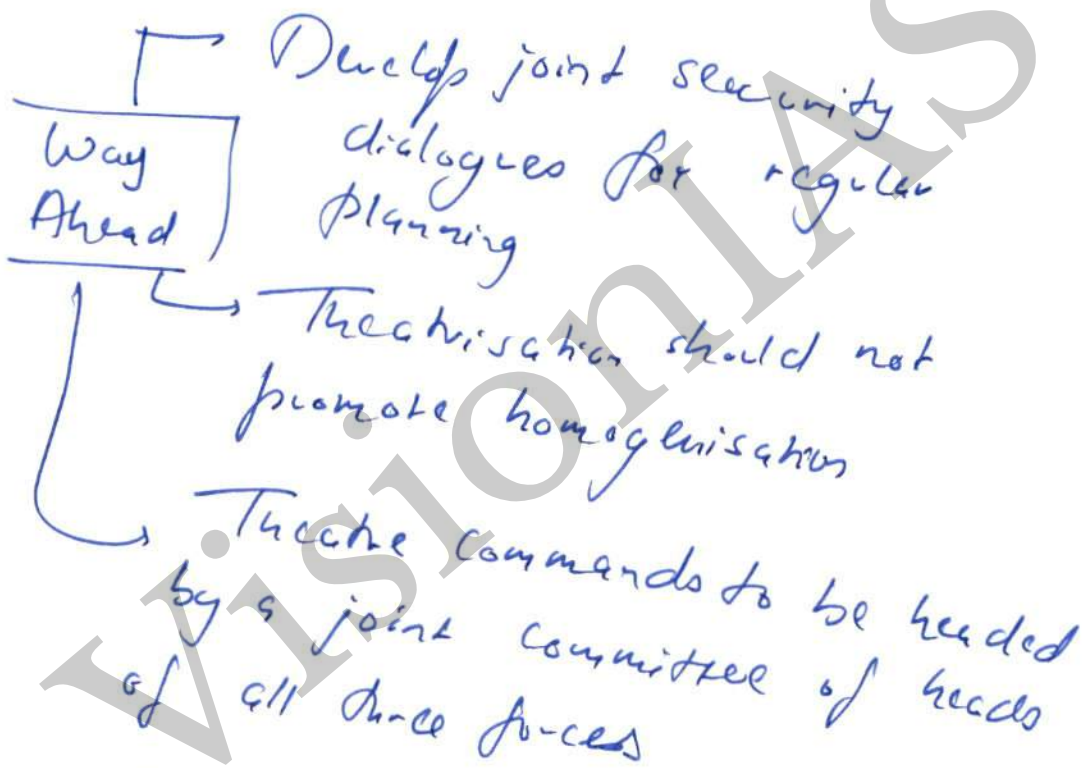


How can Juxtaposition help

- ① Comprehensive & Collaborative agreement
 - ↳ Rationalisation of resource
- ② Better, holistically planned defence strategy
- ③ Use of force in a Co-ordinated manner
 - ↳ better offensive-defensive capabilities as per Dougl doctrine
- ④ Management of internal security challenge is better planned & mitigated
 - Multiple locations of armed headquarters
- ⑤ Integration under one joint

Command will enable the
efficacy of defense strategy

⑥ Diverse specialities & perspectives
will enable innovation in combat
operations of armed forces



The 'one Nation, One Force' is
a concept that shall foster
planned defence activities

0.

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

उम्मीदवारों को इस अक्षिप में नहीं लिखना चाहिए।
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The Vibrant Villages

Programme & Border Area Development

Programme aimed at holistic development of the border villages of India.

① Facilities of sanitation, healthcare important to ensure development

Border villages as first villages

② Infrastructural developments
eg Road Requirement

Plan-1

③ Sadhbhawan initiative
is developing trust

④ Village forces to be established for community.

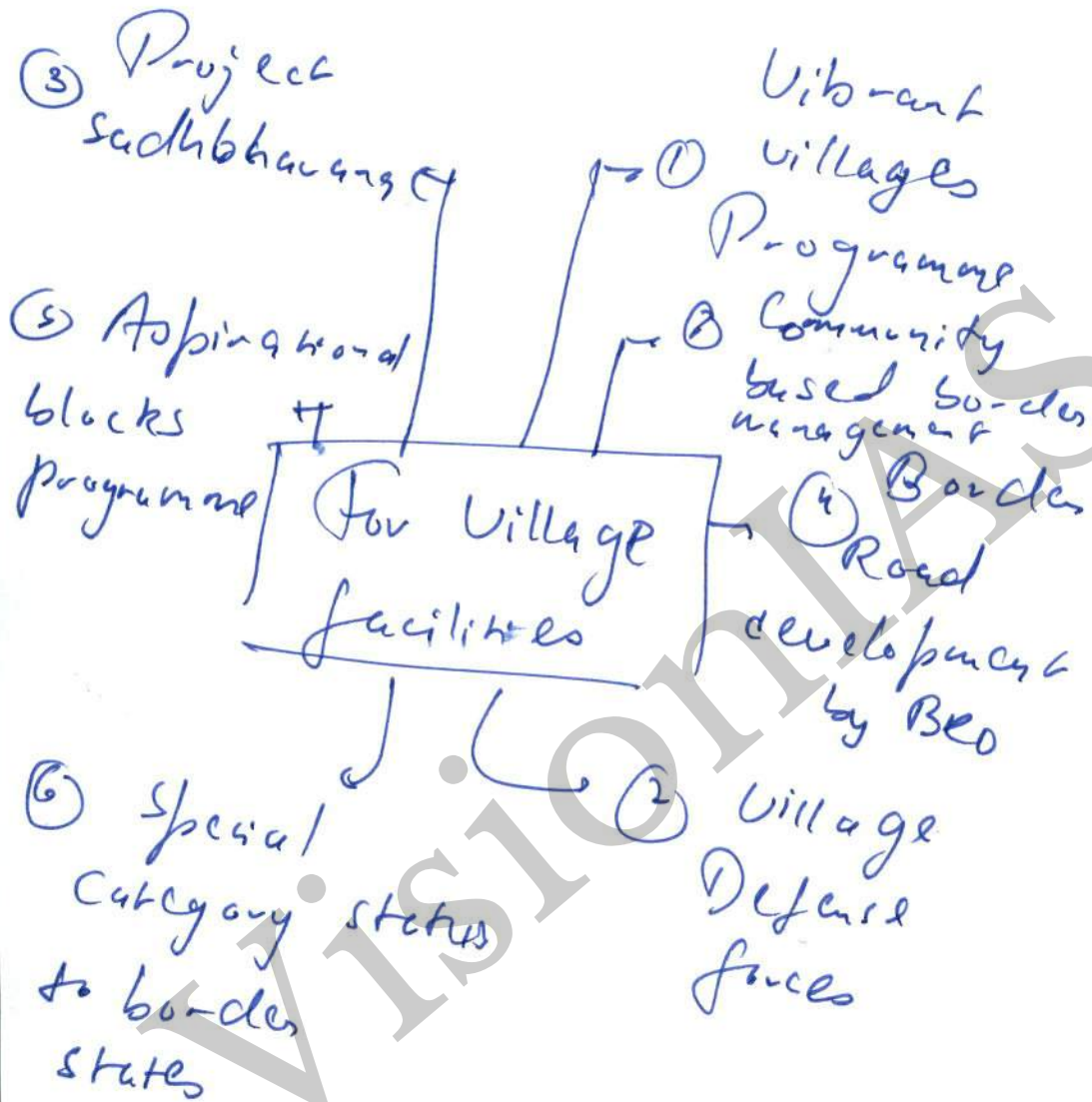
Lack of facilities

- Lack of communication network
- Lack of sanitation
- Lack of food security
- Challenges of employment
- Challenges of border fencing
↳ leading to ethnic local conflicts

What is government doing?

- # For geographical integration
- ① Border Check Posts
- ② Bold - AIT to prevent infiltration
- ③ Laser monitoring & fencing
(Madhav Godbole Committee)
- ④ Comprehensive Integrated
Border Management (As per

• Madhukar Gupta Committee



Thus, border villages serve as the first line of defense as well as 'first line of community connect'. Ensures 'Sankshit & Samridhhi Bharat'

SPACE FOR ROUGH WORK

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VisionIAS