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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. : 0657113

अभ्यर्थी का नाम/Name of Student : VIJAYAWARDHAN

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

25/8/24

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

केंद्र
Centre

Bhai Joga Mal

निरीक्षक के हस्ताक्षर
Invigilator's Signature

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

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

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

India is witnessing rapid growth in food processing sector. The CAGR is more than 10% each year, and is one of the sunrise sectors

Leading to food safety challenges in following ways

① Disregard to Human Health and safety practices. eg - use of chinese sugar syrup in place of Honey

② Further, the lack of information provided to consumers. is also a challenge. eg - Nestle using more sugar in child food.

③ Use of unsustainable and harmful
production methods which are
not hygienic

④ The increasing Nexus between
the Regulation and food processing
Industry due to increased lobbying

Thus, in the above ways
increase in food processing sector
is leading to food safety challenges
in India.

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

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

VisionIAS

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

Agri-tech startups

are crucial transforming factor that are enhancing farm productivity and market access in following ways.

① Innovative methods of production
- New methods like system of Rice intensification.

② Increasing market access through ease in transportation, access to transportation

③ Capacity Building of farmers through awareness about new products and methods

④ Provide benefit of scale to farmers.

Thus, in these ways, helping farmers.

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

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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

Land reform in India has been a crucial challenge in Indian polity since the post independence period. Recently, govt is Harmonising the digital revolution to achieve the above-mentioned goals. . eg- National digital land Records modernization Program

Role of Digitization of land records

① Moving from assumptive land title to conclusive land titling. This will help significantly in reduction of land disputes. [currently 66% ^{cases} are of land disputes].

② Digitized Records will help in increasing credit access, thus boosting ²

household expenditure on agriculture

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

③ Ease of Doing business will get promoted as land acquisition will become easy, through single point of access.

④ Further, it will provide in ease of land registration and standardisation across states.

This will help in effective implementation of land reforms in following ways.

① Centralised Data will help govt in providing support to landholders - like land pooling, fragment plot consolidation thus boosting their productive capacity

② It help to redistribute land eg degraded lands can be given to landless peasants. Govt through various schemes like SWAMITVA, National generic

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 हाशिए में नहीं लिखना चाहिए।
Candidates must not write on this margin

India has entered its Demographic sweet spot in year 2021 and will exist till 2055. To accelerate economic growth, India needs to harness this through manufacturing-led growth model. (Present only 18-1 share)

Need for manufacturing led growth model

- ① Present growth is Capital intensive which demands more investment in machines. This creates unemployment.
- ② To reduce dependency on Agricultural sector → as presently more than 45% work force is depend on it.

③ To increase Household income which will lead to worse consumption and rapid growth in economy

e.g. - China growth was led by Investment, which is declining now due to low consumption.

④ To unlock the manufacturing capacity of MSME sector in sectors of comparative advantage e.g. - textile sectors

⑤ Further it will help to Harmonize the Human capital of the Demography.

However to achieve the above goals, India needs to increase its expenditure on capability building (Amartya Sen approach) like education, Health. Further, wealth tax may provide additional expenditure capacity. India has potential to be next Manufacturing Power House, provided we play

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

Indian coastline is more than 7500 km. Given the increasing hazards like increasing sea level, Tsunamis, Storm surges, resilience of Indian coastal communities need to be strengthened.

This can be done in following ways,

① Capacity Building of coastal communities in terms of skill building, hazard identification, response mechanism.

② Utilising Nature-based solution
eg - Mangroove can be planted to reduce effect of coastal communities

(3) Increase in Early Hazard
warning and identification system.

- This requires increased invest.
ment

(4) Harnessing the potential of
private sector through public-
private partnership, e.g. Starlink
can be used to give warning.

(5) Where necessary, community
can be relocated to hinterland
to reduce their vulnerability.

Thus, in the above
measures coastal communities
resilience can be increased

7.

भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 शब्दों में दीजिए)

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

10

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

~~Green~~ Green credit programme has been launched under environment Protection act, 1986 to provide positive sustainable green protection while earning green credit.

It extends beyond carbon management to provide a more sustainable environment in following ways.

① Promoting movement in environmental conservation. The credit serves as an incentive to pursue an array of activities like afforestation, sewage treatment etc

② will augment the existing Mission life movement.

③ Lead to greater private sector participation in conservation efforts

④ will also identify existing degraded lands and undertake afforestation activities, thus promoting land conservation.

Challenges in its implementation

① Difficult to evaluate the green credit due to absence of any specific green taxonomy

② The species chosen for afforestation might not match the local biodiversity, thus affecting natural ecosystem.

③ Lack of awareness among the people and community at large.

Green credit programme will help India to achieve Net-zero target by 2070.. and thus should be imple...

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

Navigation with Indian constellation, NavIC is group of 7 satellites in geosynchronous and geostationary orbit, which provide satellite services for the Indian subcontinent and 1500 km beyond its boundaries.

Though other satellite system like GPS, GLONASS (Russia) etc are available, NavIC is essential due to following reasons,

- ① Security purposes. Provide independence in crucial sources which are essential in times of crisis - eg- America close proximity to Pakistan; Russia to China-

② Own Needs which are unique

India demands own satellite system due to need for push for innovation.

eg - India rising Digital economy

③ Use as a leverage to build influence and promote good will

in the region. eg. can be given to African countries

④ The increasing global warming leading to disproportionate impact demand satellite system suited to subcontinent needs.

Thus, for above reasons NavIC is needed.

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

Money laundering refers to converting illegal proceeds of crime into legitimate money in order to hide its illegality. The new frontier which are emerging in money laundering is Cyber-enabled financial crime.

New frontier

① Increase in Digital transaction as compared to earlier physical movement. eg. UPI transaction

② Use of AI in Data-analysis and refining of ways used in doing money laundering.

③ New emerging financial innovation like Non-fungible tokens, Cryptocurrency which reduces traceability

④ Use of Dark web to procure illicit services which help in Money laundering
ways in which govt can address this issue

① Increasing cooperation with bodies like financial action task force - implementing Anti-money laundering and counter-terror funding guidelines

② Including Designated Non-financial providers into money laundering jurisdiction

③ Increasing domestic capabilities in term of increasing skill base; reducing reliance on imports for critical equipment

money laundering is a menace which destroys the societal

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

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

Technology integration and adoption in the warfare has become an important objective of Indian army in year 2024

NEET-1 FOR TECHNOLOGY ABSORPTION

① changing nature of warfare - Traditional warfare is changing into Hybrid warfare, where the threats are becoming more diverse

eg → Russian cyber-attacks in Ukraine

② to harness the expertise of Private Sector They are becoming powerful Non-state actors who can supplement states capability eg - Cyberlinks in Ukraine conflict

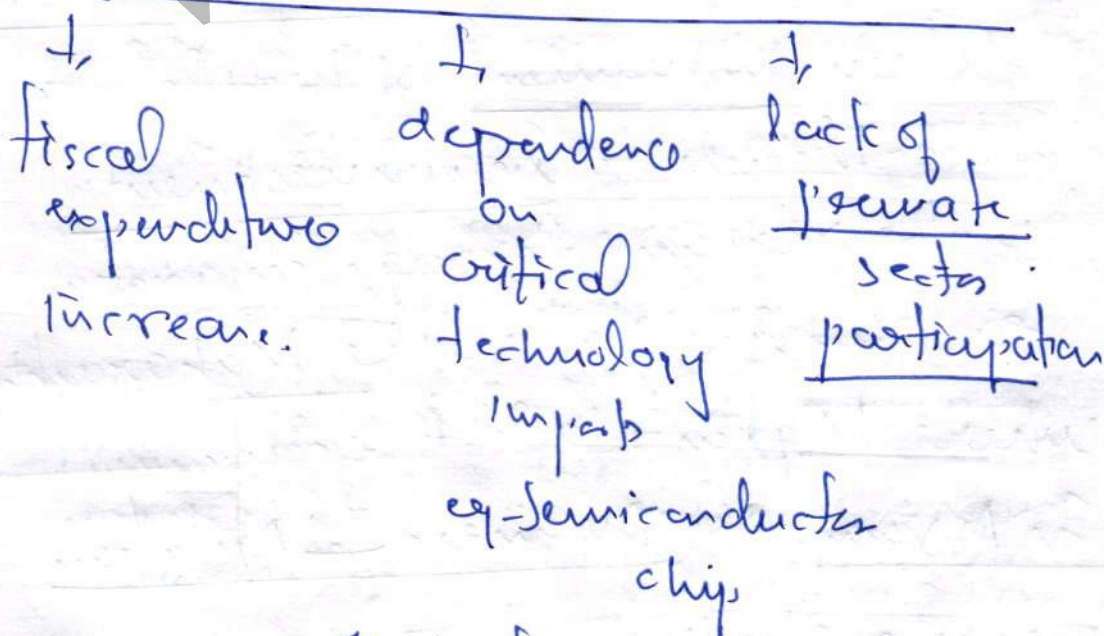
③ To detect agent - state and Non-state actor.

technology absorption bolsters states capacity. eg, cyberattack on Kunda-Kulum Nuclear power plant

④ To augment existing capabilities → promoting efficiency, deal with manpower shortage

→ eg → AI can help in decision making

Challenges in technology absorption



The Nature of changing warfare demands the integration of technology.

11.

भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटारे 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 हार्शिए में नहीं लिखना चाहिए।
Candidates must not write on this margin

North-eastern Region

is both region of tremendous possibilities and opportunities, while at the same time of concern due to its domestic challenges.

In terms of trade and Development of Industries, the region suffer from following issues

- ① The strong sense of Regional identity defers movement of people, which leads to less investment in the region through migration. eg - unlike states like Maharashtra where migrants add to economy, In Assam, the Assamese Identity cause challenge.

② Security challenges - The insurgen-
cies witnessed across time and space
- eg - Demand of greater Nagalim ;
ULFA, defer the creation of certain
and safe environment which is need-
ed for Business

③ Role of external state Actors like
Pakistan, China, illegal migration
from Bangladesh, Myanmar, creates
suspicion in the minds of natives.

④ Further, other factors like
lack of Basic infrastructure in terms of
connectivity, Poverty; presence of
organised crime syndicates ;
challenges of logistics movement (Siliguri
vicinity) etc defer the development
of trade and industries

However, govt has taken various measures to rectify the situation.

Domestic

① Increased investment in the region through policy support through schemes. eg - Udan Scheme; development of multimodal park in Joghpara, Bhubaneswar.

② To boost connectivity, development of infrastructure like SELA Tunnel, Pra Gati Shakti initiative; national waterway has been taken.

③ To create conducive peace environment, efforts have been taken like Peace agreements. eg - Recently with Bodoland.

Bilateral - Kaladan Multimodal project; Border Haats; cooperation with Japan etc. North east can act as Gateway to South east Asia provided it is developed.

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

Global warming is leading to more water scarcity in India. Currently, India is among top water-stressed countries (World Resource Institute). This is further compounded by the fact that it is largest user of groundwater in the world (25-1.)

In this context, micro irrigation system can contribute to sustainable agricultural practices in the following way

① Decrease in water-runoff. Since micro-irrigation techniques like sprinkler and drip irrigation release less water. This will decrease water usage

② If decreased soil erosion
as less water is absorbed easily
and only that is needed. This
prevents the undercutting of soil
as witnessed in traditional paddy
cultivation.

③ Reduction in usage of fertilizers
and pesticides. In addition to
usage of new innovation like
UKFA GOLD, the micro-irrigation
system releases less soil ^{fertilizer} as
compared to traditional methods.

④ Prevents growth of harmful
weeds and fungus which thrive
in excess water. This helps the
beneficial microbes and crops
which are sustainable.

⑤ Further, the use of micro-irrigation reduces usage of water through boreswells, pumps which rely on.

Heavy subsidies this reduction in fiscal burden, can be used in more productive sectors.

However, there are certain challenges associated with Micro-irrigation.

① Increase in expenditure as they are expensive. This negatively affects Small and Marginal Farmers, who rely on subsidies more than 85% in number.

② This demands other connectivity facilities like electricity, skill etc.

Micro-irrigation system has potential to solve India's water crisis, provide strong impetus is given

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
Candidates must not write on this margin

Indian Railways current share in freight transport is 27%. which govt aims to take to at least 50% by 2030. Though freight transport is dominated by Road sector, various measures can be undertaken to increase Railway share.

THERE ARE VARIOUS ISSUES IN WHICH MEASURES REQUIRED

① Diversification of Freight Basket

Currently Railways freight is dominated by Coal transport giving more than 45% of its Revenue. This can be diversified to include other sectors like consumer goods, cement; Cold storage etc like Agriculture

- ② The existing infrastructure needs to be rehailed. This demands the need to repair damaged tracks, improvement in signalling apparatus, further, Kamach can be looked into to promote market confidence.
- ③ In term of wagon, more efficiency is needed. This can be achieved through use of lightweight aluminium wagon [though recent tender was cancelled]; electrification of lines or use of more horsepower engines. This will bring down the logistic cost, increased delivery thus boosting its freight share.
- ④ Another issue which needs to be overcome is the development of multimodal connectivity. The 10a Grahshakti plan is a

right push in this direction. This will ensure the ease with which goods are covered across different regions of India, including different terrains.

⑤ Another most important aspect which needs to be undertaken is Revision of passenger fare rates. Currently, the Revenue from freight is cross-subsidized to cover fare subsidies. This will free up the fiscal burden, and can increase expenditure on other crucial measures.

⑥ Further, the unutilized assets like lands etc can be monetized to acquire more funds to undertake more investment.

Railway forms backbone of Indian economy. It is our prerogative to ensure that it remains sustainable.

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)

15

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

India is world's ~~largest~~ 3rd largest Renewable energy producer and is on its way to become global leader to achieve Paris Agreement goals.

FACTORS THAT HAVE AIDED INDIA IN BECOMING FRONTRUNNER

① Location and Resource base of the Indian sub-continent. The tropical location allows India access of sunlight round the year. Further the vast coastline of more than 7500 km and south west monsoon, boost its wind energy production. This has made India 4th largest solar producer

③ → Further the diverse terrain in terms of deserts, hills, mountains has led to ease in location of major projects.

eg → India's diverse terrain in Himalaya act as source for Hydro power; Further the vast stretches of Thar desert for solar projects.

② Govt Push towards Renewable energy

① In terms of Policy support → Scheme like PM-KUSUM; Mega solar Power Park scheme; National Bio-fuel policy, Pran surya ghar mukt. Bigha Yojana has given crucial push to present of Renewable energy.

② To augment the Domestic capabilities in terms of building

local Manufacturing capacity.

Schemes like Production-linked incentive for solar panels; MA-Suryakisan scheme; Suryamitra to build skill set.

② Even in terms of Investment, the inclusion into Priority sector lending of Renewable energy are accents to finance

④ International platform launched like International solar alliance, global Biofuel alliance etc.

③ Private sector has also shown higher interest in this, as many projects are being built in PPP mode.

However, certain issues like decreasing reliance on imports from China; attracting more investment and policy certainty needs to be undertaken to achieve Ranchant target by 2070.

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)

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

15

India is 3rd largest producer of fertilizers and pesticides and 2nd largest consumer. This is however, dominated by unsustainable consumption which results into Agricultural runoff leading to environmental pollution. This happens in following ways.

① Increased runoff leads to water pollution, where excess nutrients cause Eutrophication.

leading to phenomena like Algal blooms

This not only reduces the Biological oxygen demand, but also leads to proliferation of invasive species.

(2) Further, increased agricultural runoff leads to soil pollution, as the pesticides and fertilisers degrade soil by excess deposition of nutrients. It leads to soil acidification and removal of good bacteria.

(3) Further, it also causes the crucial species of birds and animals to die - as it leads to accumulation and Biomagnification at the food chain. This affects all the species which are involved.

MEASURES THAT CAN BE TAKEN TO MITIGATE THE IMPACT

(1) Promotion of sustainable Agricultural practices like zero-budget natural farming and organic farming.
→ This will decrease reliance on fertilisers and pesticides, thus leading to reduced runoff.

② Use of low water intensive crops.

This demands diversification of crops moving away from current Rice, Sugarcane to millet, horticulture. This will in the first place reduce demand of water.

③ Further, utilization of more water efficient cropping system like drip irrigation, sprinkler irrigation. eg-

In Israel, this has reduced water usage that lead to low runoff.

④ There is also need to generate more awareness among farmers.

This demand more testing laboratories aware about new innovation like urea gold. etc.

⑤ most importantly, govt have subsidies on power, and water usage needs to be change.

In light of changing climate Sustainable Agriculture is a must. This needs to reduce Agriculture P...

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

According to NITI Aayog, Himalayan states witness tourist influx of about 250 million each year, which is expected to reach 400 million per year by 2030. This has impacted their ecological carrying capacity, leading to man-made disasters.

IMPACT ON ECOLOGICAL CAPACITY LEADING TO DISASTERS

- ① Increasing tourist influx is leading to unsustainable rapid urbanization which includes more concretization leading to reduce surface runoff and absorption ^{more} eg- Uttarakhand is one of fastest urbanizing state.

② leads to increasingly degradati-
onal activities like deforestation,
soil erosion, harm to local biodiversity
which sustains it. eg- construction of
resort on slopes by clearing forest.

③ Rapid expansion leads to major
infrastructure projects, which demands
activities like Mountain cutting. eg
Silkyara tunnel.

④ Further, increase in Pollution through
plastic waste, Black soot discharge
from vehicle exhausts, water pollution
eg- Pangong lake in Ladakh is negatively
affected by growing tourism.

This leads to disasters
like Urban floods, flash floods,
cloudburst, landslide (Recent sikkim)
and increasing instances of wildfires
(Uttarakhand wildfire).

Further Joshimath sinking is best example

Measures that can be taken

- ① Environmental audit of tourist activities and putting greenness to deter and promote good practices.
- ② Strict implementation of Building by-laws in construction of Buildings.
- ③ Promoting the use of sustainable building materials which are eco-friendly like Bamboo.
- ④ Promoting other tourist destinations like South India to decrease the pressure or can also put tourism fee.
- ⑤ Forming a task force to holistically study the negative effects of tourism on Himalayan states.

Himalayan states are important from every aspect - Ecological, Cultural, Security, etc., thus it is our imperative to protect them.

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

In the current Digital world ~~is~~ revolved with the fourth industrial revolution, superconductor can act as Building block to fuel innovation in diverse fields of science and technology in following ways:

can building blocks

① Provides for manufacturing of consumer goods like mobile phones, TV, which are more efficient, consume less power and come with more features.

② Boost innovation in critical sectors like defence, space, renewable energy

→ In terms of space sector, used in
various services like Satellite
services. ~~Recent Starlink is the~~
~~best ex.~~ which are more fast

→ In terms of Renewable energy,
the energy transmission cost will
become Negligible, thus leading
to savings in cost.

→ In defence, can provide new
impetus to boost the production of
New generation fighter aircrafts,
submarines.

(3) On a more Broad level, can
lead to realization of universal
energy security for all.

However, Supercon
ductor innovation is still in nascent
stage and subject to subsidies

From following challenges

- ① Still in Research phase. Recent claims of south Korean scientists were refuted.
- ② Difficult to maintain at room temperature and required require great pressure to achieve.
- ③ Limited investment in Research and development and concentration in Developed world can defeat collaboration or innovation.

Superconductors of achieved can act as a changing force of human civilization just like electricity did; Nuclear energy did.

18.

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

While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words) 15

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

India is a member of World Trade Organisation and thus provides a strong regulatory framework for protection of intellectual property rights.

Further it has laws which cover almost all types of IP like the Patent Act, Copyright act; Geographical Indicators Act etc.

However Numerous enforcement, regulatory and Administrative Challenges remain :-

① Delay in filing and grant of patents: This is nearly double of time taken in USA, South Korea

(2) lack of skilled manpower to evaluate the credibility of patents filed. - eg- Bureaucrats and generalists are involved.

(3) Cumbersome and high cost filing process deters entrepreneurs to file in India, thus promoting filing in other jurisdictions.

(4) Concerning Corporate Practices like evergreening, which creates monopoly of certain corporates on specific products, limiting their commercialisation.

(5) Limited investment in Research and Development. - eg- In India limited to 0-7% of Budget as

compared to USA (27.); South Korea (54). Further, it is dominated by public sector.

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

⑤ limited investment in Product Commercialization after grant of Patent. eg- lack of venture capitalist support, Angel fund etc.

⑥ lack of infrastructure like dedicated laboratories to test the application.

The commercialization of IPK, is a significant step in reaping the benefits of Scientific Innovation. It is thus of crucial need to undertake measures to address above concern.

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

India is currently pursuing major defence reforms under integrated theatre commands to promote greater integration and rationalisation of Manpower

Though there are certain challenges.

① Intra-service Rivalry in terms of demand in more influence and authority. eg- Navy gets the least budgetary allocation among 3 services.

② Lack of prior experience and need to undertake such a massive exercise on a vast scale might lead to Resource allocation challenges.

③ The shortage of equipments, assets like fighter jets, obsolete technology, reliance on imports are other aspects which might affect it. eg - Indian air force has significant fighter jet shortages

However, it will lead to greater integration and rationalisation of Man power in following ways.

① Responding to security challenges holistically by utilising existing resources of three services.

eg. In western command, the threat from China Pakistan can be dealt with swift deployment.

② Experience from other great powers - Superpower like United States and some other and More

China have adopted integrated theatre commands which has boosted their alliance

③ Changing Nature of warfare.

especially the increasing Hybrid and grey-zone tactics. Here the lines of traditional and modern are getting blurred, which demands part response.

④ Further, the unproductive sectors of defence can be free up and monetized which will reduce the fiscal Burden. This can be diverted to increased Research and development expenditure.

⑤ Further, the Rationalization of manpower can be achieved by integration of new technologies, reduction of some redundant jobs in all services.

Integrated theatre commands were a long overdue.

This will help India to defence itself,

20.

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

Treating border villages as first villages not just geographically but also in terms of facilities can be a key strategy for enhancing border security. Discuss. Also, highlight the measures being taken by the government in this regard. (Answer in 250 words) 15

In Kautilya's Arthashastra it is mentioned that internal development of a state depends upon how well its boundaries are guarded. In this context, Border security assumes significance, where Border villages serves as first line of defence.

Significance geographically

The security and stability of Border villages, enhances the India's State presence and bolsters its claim in disputed territories. eg - China is rapidly settling people in border areas to assert its claim.

However, not just in terms of geography, but also in terms of facilities can be a key strategy.

① The presence of basic infrastructure like Roads and telecom cells can act as crucial force multiplier.

→ Roads can act as determinant of logistics movement. [eg- During Kargil war, Srinagar-Leh highway was targeted].

→ Basic telecom cells can increase communication capabilities in surveillance and reconnaissance.

② Further the Economic aspects of Border villages can supplement Security needs.

→ E.g. access to food, water can be supplemented.

③ The Border villages also act as significant source of cooperation and trust building. eg- Border haats in across India, Bangladesh borders

④ Moreover, presence of Basic facilities
present from migration of Population
to Uninhabited, leading to formation of
GHOST VILLAGES. [This is witnessed
across Kargil border adjacent to
Pakistan].

In this context govt has taken various
measures

① Vibrant villages Programme - Through
this program, govt is aiming to
saturate the villages with basic
facilities like Road, Health, etc

② Mission Sachchawana of Indian army
is undertaken to promote confidence
and trust among the habitants.

③ Comprehensive Integrated Border
Management Program, provides necessary
necessary boost to tighten security across
border.

Further, many other
steps like increasing BSF jurisdiction,
development of Bridges has been taken.

SPACE FOR ROUGH WORK

VisionIAS