



**VISIONIAS**  
INSPIRING INNOVATION  
**ABHYAAS MAINS**

**सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2424)**

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. : 0489815

अभ्यर्थी का नाम/Name of Student : Nagendra Babu Kumar

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

English

तारीख  
Date

27 Aug 2023

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

केंद्र

Centre

Bhaai Joga Singh  
Public School

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

Dishant

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

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

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

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



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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 सुरक्षा के विभिन्न आयाम क्या हैं? इन आयामों के मद्देनजर खाद्य सुरक्षा सुनिश्चित करने के संदर्भ में भारत की स्थिति का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

What are the different dimensions of food security? Examine India's status in terms of ensuring food security with regard to these dimensions. (Answer in 150 words)

10

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इस बाशिरे में  
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Food security is the availability and affordability of quality food. As India ranks 107/116 countries in World Hunger Index understanding dimensions of food security is important.

Dimensions of food security and India's status in them:-

① Production and Availability of food:-

India has increased cereal food production to about 315 MT in 2022 and is providing to about 67% of the population through National Food Security Act (NFPS).

② Affordability of food -

India provides subsidised food at MSP shops for those above 67% people.

### ③ Nutritional security -

Though 35.4% of children are stunted and about 19% are wasted along with 59% being Anemic women, India has started POSHAN abhiyan and food fortification programmes to overcome the issue.

[2g] Fortifying salt with iodine and rice in iron etc.

Thus, we need more concerted efforts to overcome 'hunger' as well as 'hidden hunger' through crop diversification, MSP basket and FPDs basket diversification to involve farmers to ensure overall food security. This will ensure the goal of 'health for all' in India.

2.

ब्लॉकचेन और चैटजीपीटी जैसी आधुनिक प्रौद्योगिकियां कृषि को अधिक कुशल और संधारणीय क्षेत्रक में बदलने की अपार क्षमता वाले शक्तिशाली साधन हैं। भारत के संदर्भ में चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)  
Modern technologies such as blockchain and ChatGPT are powerful tools with immense potential to transform agriculture into a more efficient and sustainable sector. Discuss in the context of India. (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नही लिखना चाहिए  
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Agristartups like Cheli use the technologies like Blockchain to capture the data and ensure its safe storage and usage in real time decision making.

### Technology in Making Agriculture efficient

- ① Artificial Intelligence is used by P&M to ensure precision farming is taken place with optimal utilization of water, fertilizers and machine implants.
- ② e-Choupal, a platform by ITC is using blockchain technology to store the data of agricultural produce and storage to reduce the wastage.

- ⑧ Drones are used in surveying the land and insurance claims to ensure that proper usage of resources are done under PM Basal Bima Yojana.

### Sustainability in Agriculture

- ① Data Analytics is used to test the soil quality and ensure optimal usage of fertilizers to maintain soil fertility and reduce environmental degradation.
- ② Sensors and Drip irrigation to reduce water wastage.

Thus, technology has been a game changer in agricultural sector. The push by government for Agri startups through Agriculture Accelerator Fund is a step in the right direction to effectively use technology in the Agri-startups.

3.

वैश्विक अर्थव्यवस्था में वि-डॉलरीकरण की प्रवृत्ति में हालिया तेजी के लिए कौन-से कारक उत्तरदायी हैं? क्या आपको लगता है कि डॉलर का प्रभुत्व जल्द ही समाप्त हो जाएगा? (उत्तर 150 शब्दों में दीजिए)  
What factors have led to the recent acceleration in the trend towards de-dollarization of the global economy? Do you think the dollar will lose its dominance anytime soon? (Answer in 150 words)

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Dollar got entrenched into the global economy as reserve currency in 1970s and about 60% of global reserves is held in dollar terms.

De-dollarization is the process of reducing the use of dollar as reserve currency as well as for trade transactions. The factors that has accelerated de-dollarization are:-

① Sanctions - USA's sanctions on countries like Iran, Russia is making these countries choose other currencies for trade.

[Eg] Russia is preferring yuan and Indian Rupee in trade transactions.

② Currency usage trade agreements - where countries like UAE and India has agreed to trade in rupees and Dirhams.

- ③ Changing geopolitics - where BRICS is thinking of coming up with BRICS Currency to counter western domination and reduce dependence on dollar.

However, Dominance of dollar may not end anytime soon. Because:-

- ① It is still a major currency in the reserves (60%).
- ② China though want to end dollar domination, it trades about 700 Billion USD with more than 3 Trillion dollar reserves.
- ③ Sudden change will lead to economic crisis as trade disruptions and currency risks of volatility are associated.

Hence, the process should be gradual. In a multilateral world, currency should also be equitably distributed in the reserves and transactions of trade.

4.

विकसित देशों द्वारा भारत पर खाद्य सब्सिडी व्यवस्था में बदलाव करने के अत्यधिक दबाव के बावजूद, भारत के लिए निर्धन व्यक्तियों हेतु अपना नीतिगत समर्थन बनाए रखना एक उचित कदम होगा। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

Despite significant pressure from the developed countries to alter its food subsidy regime, there is merit in India trying to retain its policy support for the poor in the country. Discuss. (Answer in 150 words)

10

The de minimis principle at WTO limits the food subsidy to 10% for developing countries with flexibility in the form of peace clause in Extraordinary situations to breach the limit.

Developed Countries decry the food subsidy regime in India and demand to reduce it as they consider it is trade distorting. However, India has merit to retain the policy:

- ① To provide support to farmers to promote production and ensure the increasing population which has reached 1.2 billion.
- ② To address the issue of poverty and hunger. As about 15% of the population are poor, the provision of food subsidy

assumes importance.

Also, India is placed in serious Category (107/116) in world Hunger Index.

③ Human Capital and food security - As the Constitution through DPSPs impose duties on the state provide assistance to the vulnerable sections.

[Eg] Antyodaya Anna Yojana to the poorest among poor.

④ Concept of Sarvodaya where all forms of injustices on all people should be overcome.

Hence, balancing the WTO commitments with domestic imperatives are need of the hour. India being a sovereign country, it has the authority to decide and the decision should be for 'Sabka Sath, Sabka Vikas'.

5.

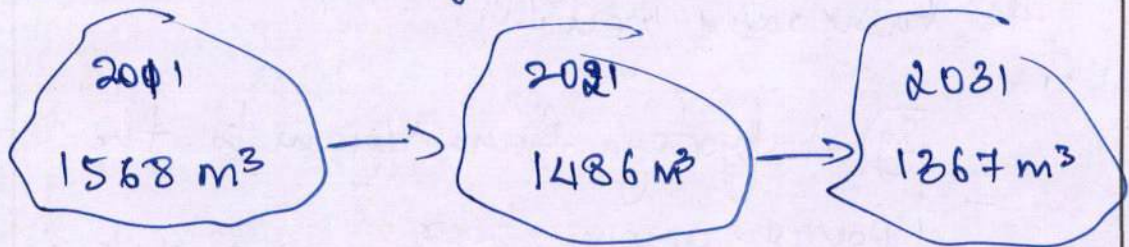
भारत की जल संबंधी जरूरतों को पूरा करने की दिशा में सरकार द्वारा कई पहलों की शुरुआत की गई है, परंतु जल की उपलब्धता और जल की गुणवत्ता जैसे मुद्दों पर अभी भी नीतिगत हस्तक्षेप की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

Several initiatives have been taken by the government towards addressing India's water needs, but the issues of water availability and water quality still warrant prioritised intervention. Discuss. (Answer in 150 words)

उम्मीदवारों को इस क्राशिए में नहीं लिखना चाहिए  
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The reports of government say that from about 54% of blocks in India face critical water stress and availability of ground water is reducing.



Along with that there are problems associated to this water availability:

- ① Reduced production.
- ② Increased soil salinity.
- ③ Soil erosion and loss of fertility due to flood irrigation.

Issues of water Quality

- ① Lack of E-flow in rivers such as Ganga and industrial-domestic effluents has increased BOD of gauge waters in several

stitches.

- ② Heavy metal contamination in terms of arsenic, nitrates etc.
- ③ Coastal water intrusion leading to water salinity in coastal areas.

However, India has taken several initiatives

- ① PM Kishu Sanchay Yojana to ensure 'Har Khet ko pani' and 'per drop more Crop'.
- ② Household water availability in taps through Jal Jeevan Mission.
- ③ Rain water harvesting through Jal Kranti and support to traditional water bodies promotion.
- ④ States like Telangana coming up with Mission Kakatiya and Maharashtra's Jalshivar Yuktta projects.

Thus, India needs to ramp up the attitudinal change among people to reduce waste water and ensure circular economy in terms of waste water usage.

6.

आर्कटिक में हिमनदों के पिघल कर संकुचित होने के लिए उत्तरदायी कारक क्या हैं? पारिस्थितिकी तंत्र पर आर्कटिक हिमनदों के पिघलने के संभावित प्रभाव का वर्णन कीजिए। (उत्तर 150 शब्दों में दीजिए)  
 What are the major drivers of glacial retreat in the Arctic? Describe the potential impact of the retreat of Arctic glaciers on the ecosystem. (Answer in 150 words)

10

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Arctic Circle encloses the region of Arctic which is bordered to the countries in Arctic Council which is retreating at fast pace.

The major drivers of glacial retreat in Arctic are:-

① Global warming and Arctic amplification-

Earth's climate has warmed by  $1.15^{\circ}\text{C}$  whereas Arctic climate by  $3-4^{\circ}\text{C}$  since 1980s.

② Increased use of Arctic route to trade.

As ice breaker vessels using nuclear power has increased to trade through Arctic Ocean.

③ Changes in Ocean Current Circulation i.e., AMOC circulations have slowed down which impacts on the Arctic climate.

- ④ Positive feedback loop - where melt water absorbing more heat and melting much more ice.

The potential impact of these actions on glaciers in Arctic on ecosystem are:-

- ① Rising sea levels - from about 1.5 mm in 1990s to 3.4 mm in 2020s.
- ② Loss of biodiversity in Arctic region like seals and bears.
- ③ Increased use of Arctic for trade routes, leading to loss of more ice.
- ④ Possible impact on monsoons and increase in extreme events like floods and forest fires like Bush fires of Australia and Amazon fires.

Thus, urgent action is needed to tackle these issues. Race for Arctic should be slowed by countries like China, Russia etc. to ensure sustainable development.

7.

अंतरिक्ष पर्यटन, जिसे सीधे तौर पर एक साइंस फिक्शन फिल्म के रूप में देखा जाता था, अब बिना किसी बाधा के वास्तविकता बन रहा है। अंतरिक्ष पर्यटन से संबंधित चुनौतियां क्या हैं? इन चुनौतियों से निपटने के लिए क्या उपाय किए जा सकते हैं? (उत्तर 150 शब्दों में दीजिए)

Space tourism, which was viewed as something straight out of a science fiction movie, is now becoming a reality albeit not without hindrances. What are the challenges associated with space tourism? What measures can be taken to address these challenges? (Answer in 150 words) 10

Space Tourism in movies like  
Mortian, Interstellar has been realised  
in the recent space tours by Virgin Galactic  
and that of by Jeff Bezos.

However, there are still challenges associated:-

- ① Only for few minutes of adrenaline rush and not a prolonged one as of now.
- ② Costly Exercise as it was done by some of world's richest persons that perpetuates inequalities.
- ③ Emissions due to rockets and aeroplanes is much more than other vehicles leading to climate effects.
- ④ Possibility of loss of life as crash landings of many rockets are witnessed.

[Eg] The crash landing of the crew module  
Carrying Sunita Williams.

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- ⑤ Commodification of common good and  
possibility of contracting disease causing  
pathogens in space.

Measures to be taken to avoid the issues

- ① Increase the fuel efficiency and ensure  
responsible space tourism
- ② Technological advancement to reduce any  
risks and training manpower in  
space activities.
- ③ Thorough checks to avoid pathogens  
from space.
- ④ Collaboration by various players rather than  
competition of cut-throat nature.

Thus, with inclusivity and equitable  
participation, we can ensure the space tourism  
remains safe and good is commonly used  
rather than becoming elitist arena.

8. वैश्विक स्वास्थ्य विशेषज्ञ व्यापक रूप से मानते हैं कि CAR-T सेल थेरेपी का विकास कैंसर के उपचार में एक बड़ी सफलता हो सकता है। CAR-T सेल थेरेपी, CRISPR-Cas9 तकनीक में व्याप्त कमियों को कैसे दूर कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Global health experts widely believe that the development of CAR-T cell therapy can be a game changer in the treatment of cancer. How can CAR-T cell therapy overcome the limitations of CRISPR-Cas9 technology? (Answer in 150 words)

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9.

चर्चा कीजिए कि प्रमुख हिंसक चरमपंथी संगठनों द्वारा नई और उभरती प्रौद्योगिकियों के बढ़ते इस्तेमाल के विरुद्ध संगठित एवं ठोस वैश्विक प्रयासों की आवश्यकता क्यों है। (उत्तर 150 शब्दों में दीजिए)

Discuss why the rising deployment of new and emerging technologies by prominent violent extremist organizations demand concerted global efforts. (Answer in 150 words)

10

उम्मीदवारों को इस वॉशिए में नहीं लिखना चाहिए  
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The age of Industrial revolution 4.0 has given rise to technologies - like Drones, Artificial Intelligence, Social media etc being used by Extremist Organizations.

[Eg] Recently LeT used drones to supply drugs and arms along LoC which was shot down by Indian Army.

Also the use of social media by ISIS to recruit and radicalize people from various corners are also some examples.

~~Why~~ This is why we need global concerted efforts because :-

- ① Multinational, cross cutting presence of social media in this globalized world.
- ② Anonymity of users in internet say the use of VPN and dark web.

- ③ Lack of resources from one country to manage all the threats.
- ④ Porous borders in many areas, say, India - Nepal border.
- ⑤ Rising lone wolf attacks like that of Christchurch and Paris etc.
- ⑥ Technology becoming cheaper and extremist organizations getting learned to operate them.

□ Osama bin Laden being an engineer was able to plan 9/11 attacks.

Thus, the concerted efforts to adopt Comprehensive Convention on International Terrorism, Intelligence sharing and better Reconnaissance (usage of drones) are the need of the hour.

10.

गलवान और यांगस्ते की घटनाओं के बाद वास्तविक नियंत्रण रेखा (LAC) पर तनाव बना हुआ है तथा भारत एवं चीन दोनों सीमावर्ती क्षेत्रों में अपने बुनियादी ढांचों को सुदृढ़ कर रहे हैं। इस क्षेत्र में ITBP द्वारा निभाई जाने वाली भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

With the Line of Actual Control (LAC) remaining tense after the Galwan and Yangste incidents and both India and China ramping up infrastructure in the border areas, discuss the role that ITBP plays in the region. (Answer in 150 words)

10

Indo-Tibetan Border Police are specialized forces to man the ~~the~~ Indian borders with China. Their role has become important due to recent clashes with China in Galwan in Ladakh and Yangste in Arunachal Pradesh.

Role of ITBP in these regions are:-

- ① To ensure the safety and security of the border population through stationing troops in ~~the~~ along the Indo-china border.
- ② To safeguard the infrastructure like Daulat Beg oldie road.
- ③ To patrol along the borders to avoid any incursions.

④ To deploy outposts to ensure regulated movement of people along the border.

⑤ To retaliate any incursions by the Chinese army.

However, the hostile terrain and climatic conditions and Chinese adventurism will lead to deaths and injuries for the people. The case of 20 deaths during Galwan clash is the example.

Hence, we need proper protection equipment and ensure that border management techniques are improved through increased funding.

Thus, we can ensure sovereignty and territorial integrity as well as peaceful co-existence in the border areas.

11.

क्या आपको लगता है कि भारत को 'भूमि उत्पादकता' के सिद्धांत को छोड़कर 'सिंचाई जल उत्पादकता' के सिद्धांत को अपनाने की आवश्यकता है? अपने उत्तर का औचित्य सिद्ध कीजिए। यह बदलाव करने में कौन-सी चुनौतियां विद्यमान हैं? व्याख्या कीजिए। (उत्तर 250 शब्दों में दीजिए)

Do you think there is a need for a shift from 'land productivity' to 'irrigation water productivity' in India? Justify your answer. What are the challenges in making this shift? Explain. (Answer in 250 words)

15

Green revolution with HYV seeds and irrigation has increased productivity from about 800 kg of rice/ha to about 2800 kg of rice/ha in 2020s. Still India is a net water exporter (virtual water).

Hence, shift from land productivity to irrigation water productivity is needed because:

① Reducing water availability - hence to ensure equitable water availability to all as ground water table is receding at 0.6m annually.

② Crop diversification - To raise crops which are drought resistant and need less water. say, Millets like Ragi takes about 600 litres/kg compared to Rice taking 2500 litres/kg approximately.

③ To reduce virtual water in our Exports as India Exports Rice and Sugar in large quantities which are water guzzling crops.

④ To reduce the Environmental degradation due to soil erosion and salinity by flood irrigation and increased loss due to electricity subsidies in many states.

However, there are challenges to these shifts :-

- ① Policy changes - such as MSP changes will require political will and popular acceptance.
- ② Inertia to change as seen in the farmers of Punjab and Haryana which still dominates in rice and wheat production.
- ③ Lack of state support to small and Marginal Farmers who are 86% of the total farmers facing scalability issue.

(4) Dependency of rains by 52% of the agricultural land and low adoption of micro irrigation (19% of arable land).

(5) Increased cost for the farmers and States in terms of subsidies to modern technology.

However, steps like promoting high value crops, storage infrastructure building and promotion of food processing along with FPOs to increase the deployment of modern methods in farming should be taken.

Taking cues from the countries like Israel to use water productively and ensuring balance between soil and water productivity is the need. Imbalance in either of the two will lead to adverse impacts.

12.

भारत की ऊर्जा सुरक्षा प्राप्त करने में हरित हाइड्रोजन की भूमिका का परीक्षण कीजिए। राष्ट्रीय हरित हाइड्रोजन मिशन, भारत की अपने ऊर्जा लक्ष्यों को प्राप्त करने में किस प्रकार मदद कर सकता है? (उत्तर 250 शब्दों में दीजिए)

Examine the role that green hydrogen can play in unlocking the energy security of India. How can the National Green Hydrogen Mission help India in achieving its energy goals? (Answer in 250 words)

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Green Hydrogen is produced by the electrolysis of water using energy from solar or wind farms compared to Grey, Brown and Blue hydrogen being produced using fossil fuels.

As India's energy demand is set to double by 2040, green hydrogen will play crucial role in ensuring energy security.

① It acts as an alternative fuel to run the vehicles like Cars, motorcycles etc.

② Railways run on hydrogen was demonstrated in Germany.

③ This will reduce the dependence on foreign imported fossil fuels, say from west Asia or Russia making India Atma Nirbhar.

- ② Green hydrogen will given push to clean energy based on solar, hydro or wind and ensure the increasing production of clean energy.

In this direction NGHM has certain targets to achieve the above goals :-

- ① To increase the production of green hydrogen to 5MT by 2030.
- ② To reduce the fossil fuels imports and save about 1 lakh Crores annually.
- ③ To promote investments of about 2 lakh Crores.
- ④ To create employment for 6 lakh people.
- ⑤ To increase clean energy production by about 125 GW.

However, there are some challenges in the way :-

- ① Lack of awareness in the public.
- ② Inflammability of ~~trap~~ hydrogen.
- ③ Need for technological advancements like Advanced cells.
- ④ High cost of green hydrogen at present.

Hence, there is a need for collaboration with other countries and promote local production of hydrogen which has its uses in fertilizers, plastic and other industries.

Thus, with these steps being implemented, Indian can become Energy secure country reaching the goals of 5tr USD by 2027. PFI scheme for Advanced Cell Chemistry is the right step in the direction.

13.

हाल के दिनों में, सरकार न्यूनतम पारिश्रमिक की जगह जीवन निर्वाह पारिश्रमिक को अपनाने पर विचार कर रही है। भारत में जीवन निर्वाह पारिश्रमिक को अपनाने के लाभ और इसमें विद्यमान बाधाएं कौन-सी हैं? (उत्तर 250 शब्दों में दीजिए)

The government has been weighing a transition from minimum wage to living wage in recent times. What are the benefits and constraints in the adoption of living wage in India? (Answer in 250 words)

15

## Constitution of India in Part IV

i.e., DPSPs U/A. 41 call for a state to ensure living wage to all. Government under Code on wages has come up with the national minimum floor rate to regulate wages.

### Benefits of that

This floor rate will become living wage, if the wages are enough to sustain life and also provide for development in education and health.

Thus, the benefits of living wages are:

① To ensure certain standard of living to all.

② To fulfil the constitutional mandate

Under DPSPs.

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- ③ To build a better human capital and reduce poverty of 16%. (MPER report).
- ④ To better utilize the demographic dividend through building human capital.
- ⑤ For equitable distribution of resources and preventing concentration of wealth thus reducing inequalities in India where 10% of population earns 57% of national income.
- ⑥ To fill the gap of gender pay which is about 35% in India thus empowering women.

Constraints do exist and they are:-

- ① Lack of political will as government believes in minimum government policies.
- ② Increasing population and labour is available at low costs and Employers choose low cost options.

③ Poor skills as only 5% of people in India are formally skilled and about 18% of students are employable. Thus, failing to get good payment placements.

④ Disguised unemployment where about 45% of labour force is concentrated in Agriculture producing 18% of GDP where wages are lower.

Thus, Government should come up with the reports to increase the minimum wage to living wage to ensure equitable and inclusive development with measures like incentives for employers, promoting FPOs and SHGs.

This will ensure ease of living to all and ease of doing business as well.

14.

केंद्रीय बजट भारतीय अर्थव्यवस्था के लगभग हर क्षेत्रक को प्रभावित करता है, फिर भी न तो बजटीय प्रक्रियाएं पर्याप्त सार्वजनिक जांच के दायरे में आती हैं और न ही बजट नीतियां। क्या आप इस कथन से सहमत हैं? अपने उत्तर का औचित्य सिद्ध कीजिए। (उत्तर 250 शब्दों में दीजिए)

The Union Budget affects almost every sector of the Indian economy, yet neither the budgetary processes nor the budget policies come under substantial public scrutiny. Do you agree? Justify your answer. (Answer in 250 words)

15

Union Budget of 2023-24 was quoted around 40 lakh Crores which include sectors like infrastructure, defence, agriculture, electronics etc which is placed at the Parliament in the form of Annual Financial Statement under A. 112.

### Highlights of Budget FY24:-

- ① Capital Expenditure increased to 10 lakh Crores.
- ② Increase in Agricultural Credits to about 18 lakh Crores.
- ③ Defence budget accounting to about 2% of GDP.

However, these processes in the Parliament are not placed under substantial

The reasons are:-

- ① Increased disruptions by the members in the parliament.
- ② Use of guillotine to pass the budget proposals.
- ③ Members of Lok Sabha do not have much economic knowledge except few specialists.
- ④ Lack of Rajya Sabha control on budget as specialists exist there.
- ⑤ Committees like Estimates Committee has least control over the Budget proposals as they are only recommendatory in nature.
- ⑥ Lack of public knowledge on the issues of budget except for economic graduates and experts.

However, there are some efforts made to scrutinise the proposals:-

- ① Media enlisting specialists to educate the public.
- ② Analysis on budget by Experts in various institutions.

However, we need it in the house of the Parliament where role of Committees should be enhanced along with training to members on economic aspects. Government should be more responsive and opposition Constructive.

Then, we can ensure that the process of Budget making will ensure that the outcome will be inclusive and sustainable with optimal utilization of resources.

15. भारत स्वयं को दूध की कमी वाले देश से दुनिया के सबसे बड़े दूध उत्पादक देश के रूप में बदलने में सक्षम हो गया है, लेकिन देश में डेयरी पशुओं की उत्पादकता चिंता का विषय बनी हुई है। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)
- India has been able to transform itself from a milk deficit country to the world's biggest milk producer, but the productivity of dairy animals in the country remains a concern. Discuss. (Answer in 250 words)

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India produces about 24% of the world's milk production which is the largest in the world which was milk deficit country before operation started in 1970s.

However, Productivity of dairy animals is a concern:-

- ① Loss of traditional breeds like Gir, Punganur, Nili Ravi etc.
- ② Increased disease burden like FMD, Brucellosis orumpy skin disease.
- ③ Issue of availability of feed and fodder due to climate extremes.
- ④ Lack of technological advancements in insemination process compared to that of Israel.

Ex) Israel has some cows producing about 10000 tons of milk annually.

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- ⑤ Lack of dairy infrastructure to help dairy farmers and farmers lack knowledge to improve the productivity.
- ⑥ Increased dependence on Cross and Exotic breeds like Jersey or Red Dane which does not work well in Indian climate.

However, Government is taking steps to overcome these problems :-

- ① Rashtriya Gopul Mission - to conserve indigenous breeds.
- ② Animal Husbandry Infrastructure Development Fund to create cold storages etc.

③ Animal Disease Control programme to tackle Foot and Mouth Disease and Brucellosis.

④ Providing feed at subsidized rates

[Eg] In Kerala, Karnataka and UP.

Thus, the income providing means for farmers, which will ensure sustainable development through their contribution in natural farming and having provision of insurance for farmers in distress, the dairy and Animal Husbandry needs to be revamped.

We need a second Kurien Moment to take the leap of faith in improving the contribution of Animal Husbandry from 5% of GDP at present to more than 10%.

16.

जहाँ एक तरफ जलवायु परिवर्तन, फसल की विफलता के लिए जिम्मेदार है, वहीं दूसरी तरफ चरम मौसमी घटनाओं के लिए कृषि क्षेत्रक स्वयं आंशिक रूप से जिम्मेदार है। विवेचना कीजिए। भारत में कृषक समुदाय की प्रत्यास्थता को सुदृढ़ करने के लिए राष्ट्रीय कृषि आपदा प्रबंधन योजना के तहत क्या रणनीति अपनाई गई है? (उत्तर 250 शब्दों में दीजिए)

While climate change is responsible for crop failures, the agricultural sector itself is partly responsible for extreme weather events. Discuss. What strategy has been adopted under National Agriculture Disaster Management Plan to strengthen the resilience of the farming community in India? (Answer in 250 words)

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IPCC reports say that Climate has warmed by  $1.15^{\circ}\text{C}$  compared to pre-Industrial era and the intensity and frequency of climate extremes like flash floods, cyclones and heat waves have increased.

The impact of climate extremes has led to crop failures <sup>due</sup> to logging of water at times, moisture deficit at times of heat waves etc.

The responsibility of climate change is also on Agriculture as about 15% of the Green house gases like  $\text{CO}_2$ , Methane and Nitrous oxide are released by the Agricultural activities.

Hence, Agriculture causes climate change and gets affected by climate extremes.

Thus, Government has adopted the National Agricultural Disaster Management Plan to strengthen the resilience of farming community.

The strategies are:-

- ① Collective effort - that is cooperatives or FPOs to reduce the overall impact on individuals.
- ② Promoting climate resilient Agriculture i.e., NRCA which inculcates Mitigation, Adaptation and Sustainability.
- ③ Increased adoption of modern techniques of water management i.e., drip irrigation or sprinkler irrigation.
- ④ Promoting Agroforestry to increase the carbon stock and cause sequestration.
- ⑤ Mapping the disasters faced in the various physiographic regions to choose the mode of action.

[59] Mountain regions will have landslides and government can choose the response appropriately.

- ⑥ Promoting Traditional practices of agriculture like Natural Farming to reduce tillage and increase mulching.
- ⑦ Penetration of Insurance in the form of PM FBY.
- ⑧ Building the storage infrastructure and Buffer stocks to reduce impact on the Consumers during disasters.

Thus, all around or comprehensively dealing with the agricultural disasters from pest attacks to climate changes.

However, Implementing the strategies are need of the hour.

17. दिल्ली सहित भारत के कुछ क्षेत्र हिमालय में आने वाले भूकंपों के प्रभाव के प्रति अत्यधिक संवेदनशील हैं। विवेचना कीजिए। भारत में भूकंप से होने वाली हानि को कम करने के लिए कौन-से संस्थागत उपाय किए गए हैं? क्या आपको लगता है कि कुछ उल्लेखनीय कमियां अभी भी मौजूद हैं? (उत्तर 250 शब्दों में दीजिए)
- Some regions in India, including Delhi, are highly vulnerable to the impact of earthquakes originating in the Himalayas. Discuss. What institutional measures have been taken to mitigate earthquake losses in India? Do you think there are significant gaps that still exist? (Answer in 250 words)

15

About 59.1% of Indian land is prone to earthquakes. Delhi being close to Himalayas which are on Zone V i.e., at Extreme risk Zone, Delhi gets affected by the tectonically active Himalayan changes. Recently, Earthquake swarms were felt in Delhi region.

The Institutional Measures to mitigate Earthquake losses are:-

- ① Disaster Management Act, 2005 considers Earthquake as a disaster.
- ② It creates National Disaster Management Authority to come up with plans for disaster management.

- ③ NDMA has plan for Earthquake management which calls for Zonation mapping, early response, coordination and capacity building.
- ④ DM Act also creates National Disaster response Force and Fund to respond in the emergency situation.
- ⑤ The Building codes also provide by Earthquake resistant building especially in hilly regions.

However, there are gaps. They are:-

- ① Lack of Compliance to Building codes.
- ② Lack of capabilities among public due to lack of education about the response during earthquake.

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③ Rehabilitation and Resettlement happens in a tardy manner due to red tapism and corruption.

④ Development activities like dams, hydroelectric projects and roads in tectonically active regions.

[Eg] Alakananda Nibhap in 2021 was considered due to dam construction.

Thus, there is a need to learn from the other countries like Japan to manage the earthquake mitigation along with educating community in responding while coping in civil society in the process.

Thus, we can reduce the impact through proper preparedness and investment as has been suggested by Sendai Framework for Disaster Risk Reduction.

हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों में दीजिए)

Recently, scientists announced net energy gain in nuclear fusion reaction, which is considered as a major scientific breakthrough for the future of clean energy. What are the advantages of nuclear fusion based power generation? What are the limitations in using it to generate electricity at a commercial scale? (Answer in 250 words)

Nuclear Fusion is addition of 2 smaller elements like Hydrogen atoms nuclear us to gives rise to Helium as that happens in the Sun's Core releasing enormous energy.

As Scientists are emulating the Sun's processes, In US scientists announced that energy produced was more than the energy consumed during the process.

Considering global efforts to build ITER based on Nuclear fusion, we can look at its advantages :-

① Renewable source of energy production.

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- ② Nil emission of greenhouse gases.
  - ③ No waste i.e., Nuclear waste is produced as it is in the case of Nuclear fission.
  - ④ It will replace fossil fuels and help in tackling climate change.
  - ⑤ Possibility of global cooperation by various countries which can reduce the global tensions at present.

[Eg] ITER project involves India, EU, USA and China etc.

However, there are some limitations:-

- ① Technology is nascent and needs further advancement.
- ② Require high energy to sustain the reactions using laser beams and Magnets.

- ③ Less man power in the field and low skills.
- ④ High Cost requirements and low returns hence high cost of electricity produced.
- ⑤ Sudden decline in production if any disruptions occur. Though it benefits in terms of avoiding Nuclear mishaps such as Fukushima or Chernobyl disaster, it also breaks the cycle of energy generation.

Thus, there is a need to increase research spending and skilled manpower with technology advancement along with private players participation.

This will act as another step towards climate neutrality and ensuring sustainable development.

19. हालिया संशोधन को ध्यान में रखते हुए, भारत में धन शोधन (मनी लॉन्ड्रिंग) के खतरे से निपटने में धन शोधन रोकथाम अधिनियम, 2002 की प्रभावकारिता का परीक्षण कीजिए। (उत्तर 250 शब्दों में दीजिए)  
Keeping in view the recent amendment, examine the efficacy of the Prevention of Money Laundering Act, 2002, in tackling the menace of money laundering in India. (Answer in 250 words)

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हिंद महासागर क्षेत्र (IOR) में मौजूद उन सुरक्षा खतरों पर चर्चा कीजिए, जिनका भारत के समुद्री सीमा संबंधी हितों पर सीधा असर पड़ता है। इन खतरों से निपटने के लिए एक मजबूत रणनीति सुझाइए। (उत्तर 250 शब्दों में दीजिए)

Discuss the security threats present in the Indian Ocean Region (IOR), which have a direct bearing on India's maritime border interests. Suggest a robust strategy to deal with these threats. (Answer in 250 words)

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India overlooks the Ocean which is named after Indian as Indian Ocean and India is considered as a net security provider in the region which is increasingly embroiled in new geopolitical construct Indo-Pacific.

Hence, India having 7500 km of Coastline approximately, has some security issues. The threats are:-

① Possibility of 3rd front along the Indian Ocean as China and Pakistan have increased their presence in Indian Ocean.

② Yuan near 5 of China which is surveillance ship docked in Hambantota for few days.

② Smuggling and Organised Crime along the region.

Ex) 3000 kg drug found in Kandla port and another one in Kochi recently.

- ③ Piracy attacks along African countries attacking oil tankers where about 90% of India's trade happens through ocean.
- ④ Terrorists entering the countries through maritime borders.

Ex) 26/11 attacks in Mumbai where terrorists used sea routes to enter India.

Hence, there is a need for robust strategy:-

- ① Strengthening Indian Navy and maritime patrolling by Indian Coast Guard and co-ordination between the 2 organizations.

Ex) INS Vikrant is an example

## Strengthening Navy.

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- ② Collaboration with other EOR countries like Indian Ocean Naval Symposium.
- ③ Bilateral Exercises to increase interoperability and deter the pirates and other actors.
- ④ Strengthening border security check up which has gaps in about 200 places as per parliamentary committees.

Thus, with comprehensive efforts we can overcome the threats posed to secure territorial integrity.

## SPACE FOR ROUGH WORK

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