



**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. : 1236108

अभ्यर्थी का नाम/Name of Student : Aniket Phansalkar

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

English

तारीख  
Date

27/08/2023

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

केंद्र  
Centre

Delhi

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

*[Signature]*

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

कार्यालय के प्रयोग हेतु  
For Official Use

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

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

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



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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 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

Food security is the availability, accessibility and affordability of nutrition to all citizens of the country.

Global hunger index → 107 / 123  
(2022)  
↳ India.

Dimensions of food security :-

① Agricultural output → grain shortage  
poor crop output can create  
supply side issues and cause  
food inflation.

② Procurement → MSP  
helps in ensuring income  
security to farmers, and  
low price realisation, and  
deficiency in payment &  
procurement leads to low  
cropping of pulses & oilseeds  
& millets.

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

3. marketing & transportation → pool agri  
market integration, price  
discover, warehousing,  
cold storage.  
↳ gain loss during transportation  
↳ perishable nature of horticultural  
commodities  
↳ lack of cold storage.

4. PD S + rFSM → procurement  
by FCI & other bodies of  
state government  
↳ india does over procurement  
but poor designation of beneficiaries.  
shanta kumar committee → reduce beneficiaries  
from 66% to 40%.

5. one nation card → india  
excelling at  
providing affordable food even  
for migrant workers.  
ultimately, welfare schemes like  
posHAN Abhiyan, ICDS, MDM  
help in ensuring significant  
food security for 2/3rd  
vulnerable people.

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)

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

Blockchain refers to the ledger of account which can act as a mode of [unit storage] of any quantity of information.

[Chat GPT] → an instrument of [General Artificial Intelligence] that can be used to generate intellectual property like music, texts, videos, reports and [much more] by both human stimuli & communication as well as deep learning.

[Role in agricultural transformation]  
→ Blockchain can help in containing rewards of beneficiaries of [subsidies] & power.

↳ blockchain is a formidable tool  
of maintaining land records,  
↳ eg Telangana used it  
↳ can reduce disputes contain  
scientific geological field &  
soil mapping of the farmers.  
↳ contain a record of seed  
purchase & utilization details  
of soil health cards,  
impact of micro-climatic variability  
on productivity.

CHATAPT ↳ it can be  
utilized to design  
a step by step plan for  
sowing till harvesting of  
agri produce

↳ can be immensely useful in  
agri-extension services &  
virtual interaction with farmers.  
↳ can suggest fruitful  
combinations of integrated farming  
for raising farm income.

However, emerging tech like  
blockchain, drones & AI  
are transforming agriculture.

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)

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

Dollar undertook the role of being the global reserve currency in post [ww 2 era] .

At present :-  
[forex reserves] → 60% of world's debt is dollar denominated.

↳ 80% trade transactions occur in dollar . Thus, dollar remained perpetual demand due to high capital convertibility & strong macro-economic fundamentals

Factors responsible for the de-dollarization :-

① weakening of petro-dollar ↳ oil & natural gas

trade, quite critical for energy security for many countries was bound by dollar, but now Saudi - China Yuan, Russia - India ↳ refuge - subble mechanisms .

(2) Russia-Ukraine war → deweaponisation  
 system like SWIFT. new great  
power rivalry, alternative arrange-  
ments for trade.  
 → USA sanctions on Iran &  
Venezuela.

(3) decline in the attractiveness of dollar → excessive  
pandemic printing during  
doing taper then later Fed  
1.25% in a year interest rates at

Future of dollar :-

(1) talks on BRICS currency,  
IMF reforms indicate dollar's  
loosening dominance.

(2) However, lack of alternate  
reliable world power currency,  
sustaining debt & transaction  
levels in dollar suggest a  
slow transformation of the  
global economic system  
and not a sudden one.

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

4.

विकसित देशों द्वारा भारत पर खाद्य सस्मिडी 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)

Under the auspices of the WTO Agreement on Agriculture, created the concept of buckets where countries were allowed to provide 10% subsidy of the cost of crop to their farmers, as a marginal trade distortion activity.

Stance of developed countries :-

- (1) promoting neo-liberal policies → tariff & non-tariff barriers are trade-distorting, create artificial inefficiencies & prevent farmer value addition & food processing.
- (2) Indian [PDS] and hoarding & [MSR regime] significantly

reduces cost of cultivation and helps demand of indian agri product in world market due to high demand.

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए  
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## India's stance

① INFSM → social welfare, food & nutrition security, elimination of hunger & poverty (SDG 2 & 1) are the primary responsibility of the state and also sustainable development goals.

② developed countries like USA already provide massive subsidies to their farmers in backward linkages (seed, fertilizer, machinery) as well as direct remuneration before crop harvest.

Thus, developing nations should not be considered trade distorting under WTO rules for letting their farmers crop MSP after cultivation.

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

10

Water is perhaps the most significant requirement for building the foundations of socio-economic development.

[CWL] → 150+ districts are water deficit.

[CSE] → 10 states have severe level of water pollution with (nitrates) & fluorides (eg WB, Bihar).

Initiatives taken by Government:-

① Jal Jeevan Mission → [FHTC] to 18 crore households by 2024

② Namami Ganga → protection & rejuvenation of Ganga river system.

③ scientific irrigation practises → drip, sprinkler etc

④ proper EIA, limit to groundwater extraction, penalties & etc.

## Problems associated :-

- ① In JJM, there is a gap between verified & certified villages as water source.
- ② perilous existence of polluting chemicals, increased salinity of water bodies, urban wetland destruction (60-1% wetlands lost in 3 decades),  
↳ CSE
- ③ Huge power subsidies still leading to large over-exploitation of water bodies & groundwater.
- ④ Unsustainable agri-production, MSP on cereals ↳ realisation of crop basket.

Hence, via mechanisms like Aarth Ganga Project, technological treatment of industrial effluents, afforestation etc. around floodplains & water bodies can ensure the sustainability of water resources in the country.

उम्मीदवारों को इस कॉपी में नहीं लिखना चाहिए  
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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

According to IPCC report, global warming impact on the Arctic region is much more severe than the rest of the world; with temperature rise being 3 times more severe.

Drivers of Arctic retreat :-

① Global warming & greenhouse gases → carbon, methane emissions from industries, agriculture & transportation.

② weakening of ocean currents like AMOC → leads to low transfer of heat budget, more glacial melting.

③ Aerosols & Black carbon → most lived but has immense GWP.

## Impacts of arctic glacial retreat :-

1. arctic regions had immense carbon & methane storage facilities  
↳ driving & accelerating the cycle further
2. methane hydrates & risk of zoonosis  
due to micro-organisms release  
↳ captured microbes for thousands of years  
are now releasing which may increase epidemics.
3. shipping routes to Arctic & increased trade
4. more oil, gas, rare earth metals accessible.
5. increased geopolitical competition due to the same.

Therefore, arctic glacial retreat has profound implications in climate & geo economics.

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 is understood as the travel to the orbital & beyond regions of the earth's atmosphere for the purpose of recreation, adventure & learning.

Modes of space tourism → sub-orbital  
↳ up to 100 km  
↳ orbital

In 2001 Dino (↳ deep space outside the earth's gravity & atmosphere) became first person to travel in space.

Challenges associated :-

① radiation effects on the living beings.

2. Excessive costs & requirement  
of training।

3. unregulated sector, opens  
up new dimensions of time  
& sovereignty.

4. Private participation could  
lead to monopoly, more  
space waste and debris,  
danger to satellites etc.

Measures :- 1. technological  
measurements, robust flight  
crew module.

2. substantial amenities to  
the crew.

3. more private participation  
like Space X & In-space.

4. medical analysis of the  
tourists & effect of  
radiation assessment.

Thus, space tourism remains  
an interesting new  
adventure paradigm.

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)

10

Current treatments of cancer involve radiation & chemo-therapies, which have following detriments :-

- ↳ expensive
- ↳ painful
- ↳ recurring in nature
- ↳ low probability of survivalibility

Significance of CAR-T cell therapy

↳ stands for chimeric antigen Receptor - T cell therapy.

↳ In this process, the cells of the body are extracted and they are treated with the CAR enzyme which becomes embedded on the surface of the cells.

↳ Then these cells can be put back in the body.

↳ in the possibility of cancer formation, this CAR attaches itself with the immunity providing & anti-gen fighting [T cells] & starts fighting & destroying the cancer cells.

↳ CAR-T cell therapy is noticed to be much more efficient than in silos chemo- & radiative therapy.

↳ while CRISPR-Cas9 is a good technology of gene editing, yet it has :-  
↳ ethical issues  
↳ gene editing may

off-target attacks also impact good genes

CAR-T cell evades this short-coming & only targets cancer cells, no gene editing or off-target attacks required.

Thus, this emerging health technology needs to be utilized.

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 हार्शिए में नहीं लिखना चाहिए  
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In the 21<sup>st</sup> century, the medium of warfare has advanced into 4<sup>th</sup> generation & 5<sup>th</sup> generation warfare. Emerging technologies have become the instruments of waging low cost, high impact warfare on the adversary :-

① use of dark web → FATF  
dark web contains 90% of criminal antecedents. much more pervasive and easier for cartels and terrorists to engage among themselves → money laundering → project details shared...

② AI & IOT → increases the reach of extremists,

enhances efficacy

↳ new avenues of conducting crime → eg → deepfakes ◦

③ information warfare | given a boost  
↳ disinformation, propaganda ◦

④ virtual digital assets → effective  
instrument for illegal financing  
& wealth storage; in parallel  
or tandem with Mawala

Need for global efforts :-

① criminal networks are increasingly trans-national & globalized  
↳ requires UNODC for combating drug trafficking  
↳ interpol, WCCB  
↳ intelligence & radical terrorists  
↳ money laundering & criminals & wildlife

② much more complex & interconnected modus operandi of terrorist organisations  
requires increasingly coordinated & converging effects.

उम्मीदवारों को इस स्थिति में नहीं लिखना चाहिए  
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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

After the Doklam crisis in 2017 & Galwan clashes in May & June 2020, the degree of activity, distrust, troop movement etc in the LAC has enhanced significantly.

After effects :-  
 increasing infrastructure  
 ↳ china constructing all weather roads, small towns with amenities, troop placements & habitation.  
 ↳ india constructing the DBO road and more army installations, air-strips, attack & rescue helicopters & helipads in the region

↳ more presence of UAVs  
drones → spying of  
satellite movement.

उम्मीदवारों को  
इस हार्डिप में  
नहीं लिखना  
चाहिए  
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## Importance of ITBP :-

1. first line of defense along the Indo-china LAC.
2. collaboration & intelligence sharing with other forces like SSB in nepal, Assam rifles around Arunachal & Bhutan.
3. recruiting locals as messengers, informants.
4. creating cultural bonds & trust with local villages.
5. disaster management, rescue, and community oriented projects with sustainable development.
6. High-altitude terrain warfare practices.

Hence, ITBP takes a  
seminal role in country's defense

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)

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

15

Land productivity pertains to the concept of land usage at its optimum in order to increase the area and quality of the cultivated crops.

Problems associated with productivity

(1) monsoon dependent irrigation → even today 52.1% agri. land is without modern irrigation facilities  
4.8% arable area (survey 2022)

(2) low quality seeds → that do not produce optimum crop.

(3) excessive use of fertilizers → N:P:K ratio is 7:4:1 rather than 4:2:1

(4) intensive agriculture, lack of intercropping, agri-forestry.

(5) soil degradation → humus content decrease. soil microbes non-existent due to over use of pesticides etc.

Irrigation water productivity

(1) water crisis in several regions in India (water table in Punjab, Haryana depleted by more than 50%).

(2) Low irrigation & groundwater extraction → 80% groundwater utilized for agriculture alone (Aqui Lensus 2015).

(3) canal, tube well irrigation, cultivation of water-intensive crops like rice, cause further decline in water table

(4) drip, sprinkler, sub-surface irrigation increases water utilization by 60%. and productivity of produce by 20-30%.

Challenges in making the shift

(1) capital investment in drip irrigation projects

↳ can be tackled by utilizing FPO model & hire machinery from common service centres

(2) even after irrigation, the usage of pesticides doesn't stop.

↳ should bring more area under natural & organic farming

(3) often the machinery becomes clogged due to fertilizers & waste products.

Thus, the transformation from land productivity to irrigation water one is a crucial step towards agri. productivity

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)

उम्मीदवारों को इस खण्ड में नही लिखना चाहिए  
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Green hydrogen is the type of hydrogen that is produced from the electrolysis process by splitting  $H_2O$  (water) into hydrogen & oxygen.

Green hydrogen is a non-polluting energy resource unlike gray or blue hydrogen which require conventional sources of energy to obtain.

Characteristics of Green Hydrogen

- ① provides higher energy density and calorific value than natural gas & fuel.

(2) does not cause pollution due to absence of carbon.

(3) does not let exhaust, the water can again be split into hydrogen.

(4) Better and environmentally sounder than lithium-ion & sodium-ion batteries, which require lot of water, mining and power to generate.

Importance of National Green hydrogen mission

(1) gives incentives for developing the entire range of value chain.

(2) leads to production of electrolysers.

(3) research & development of hydrogen fuel cell & hydrogen hydride.

vehicles.

(4) creating a national hydrogen grid, that connects seamless transportation of hydrogen across the country.

(5) enables collaboration with other countries for hydrogen mobility solutions.  
↳ eg with Germany

(6) enables public-private partnership and tax relief for hydrogen vehicle development & purchase.

Hence, NHRA is a holistic and forward-looking mission that has the capability to generate sustainable transportation as per SDG 10.

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

Minimum wage is defined the least amount of wage that a worker must be compensated with for his basic survival and affordability of basic services.

↳ Recently concepts of 'family wage' & 'living wage' have gained more attention as a methodology for greater social welfare and equity.

↳ Minimum wages act provides the legal framework for the right to a wage for any work and it can be legally enforced.

• as well.

↳ Living wage is defined as the least amount of wage which can enable a worker to maintain himself and the family without suffering multiple deprivations.

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए  
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Benefits of living wage :-

- ① enables access to other services like internet, recreation besides [roti, kapda, makaan].
- ② out of pocket health expenditure can be maintained more comfortably.
- ③ larger net of social security is provided.
- ④ has the potential to improve per capita income from current 2400 dollars.

5. Is in consonance with Article 38 which talks about minimizing inequalities.

Constraints :-

1. Low financial resources for the government which prohibits it towards increasing salary & pension bills.

2. difficult for private sector to maintain profitability since they require cost-cutting.

3. Lack of consensus, data and quantifiability of determining a living wage.

Therefore, living wage is more beneficial & has the power of improving the life of the worker.

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)

उम्मीदवारों को इस इच्छा में नहीं लिखना चाहिए  
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15

The Union Budget or the Annual Financial Statement is presented under Article 112 of the constitution.

Process of budget presentation

1. preparation
2. tabling in parliament
3. first reading
4. examining clause & clause
5. put to vote
6. finance bill
7. appropriation bill.

Problems associated with budgetary processes & policies

1. Parliamentary committees &

departmentally related standing committees (DRSC) are functioning poorly; lack of debate & discussion, non-reference to the house committees!

(2) The budget while consults industrial, trade & other bodies; its not a transparent process and substantially wide public feedback is not obtained.

(3) Usage of e-governance for inviting suggestions for the budget policies is non-existent.

(4) Recharge role of media

↳ panders to sensational & over the top discussion without creating an atmosphere of serious & nuanced discussion.

उम्मीदवारों को इस कश्चि में नहीं लिखना चाहिए  
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(5) The amount of sum spent on various schemes is decided by bureaucracy with little feedback from stakeholders.

(6) Even in the matter of taxation, the burgeoning habit of inflicting surcharges and cess leads to quivance from state governments (against federalism) and consumers.

Way forward → The budgetary process must invite more scrutiny from parliamentary committees and more dissent should be taken into account. Interest groups & CSOs must be taken into account for credible auditing.

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)

15

India is the largest producer of milk in the world with around 25% market share.

As per Agri census, India has the highest number of cattle & livestock in the world.

Role of cooperatives like Amul has been exemplary in achieving this feat.

Around 60% of milk production in the country happens in the cooperative model.

उम्मीदवारों को इस हार्फ में नहीं लिखना चाहिए

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## Problems with productivity :-

- ① Indian cattle gives a low yield ; as compared to foreign breeds like Holstein.
- ② unavailability of  fodder for the livestock.
- ③ diseases in the livestock such as Breucellosis & Foot-and-mouth disease.
- ④ Lack of artificial insemination techniques.
- ⑤ tabboo against hybrid breed development among the local communities.
- ⑥ Some indian breeds like Sahiwal provide superior yield , but their numbers are declining.

उम्मीदवारों को इस क्रायिफ में नहीं लिखना चाहिए  
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## Way forward :-

1. Rashtriya Gokul mission  
↳ for protection of desi indigenous breeds & preventing diseases & increasing their yield through scientific fodder management

2. Artificial insemination programme  
↳ in order to improve the genetic component of the breeds.

3. utilizing natural methods like cattle can graze in open which traditionally is associated with propensity to provide more yield.

Hence, the productivity of dairy animals is crucial for the expansion & profitability of animal husbandry.

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)

15

Recent report by IPCC, revealed the impact of climate change on agricultural systems

↳ monsoon pattern & variability can change bringing simultaneous floods & droughts in different regions.

↳ more severe hailstorms damaging crops.

↳ reduction in ~~water~~ groundwater level, leading to decrease in water availability for irrigation.

↳ Loss of soil biodiversity, quality, nutrients & humus content (Black soil has lost 50% of its soil organic carbon).

## Role of agri-sector in climate change

↳ emission of methane from livestock as a result of fermentation process.

↳ methane has high GWP (70 times more than  $\text{CO}_2$ ) & is a long-lived pollutant.

↳ water intensive farming, eg rice leads to more methane emissions.

↳ GMOs are often regarded as damaging for soil microbes and creating new variety of pathogens which eventually leads to local biodiversity loss and emergence of invasive species.

# National agri. disaster management plan.

① Through the process of integrated farming, agro-forestry, organic & ZBNF, the emissions from agriculture and vulnerability to extreme weather agents is reduced.

eg [rice-fish farming] in North-east

② urban farming, terrace farming which increases the resilience of local supply chains, against unforeseen logistical issues like pandemic.

Hence, the role of integrated, sustainable farming methods is paramount in ensuring that agriculture becomes more foolproof to adverse climate change.

उम्मीदवारों को इस इच्छा में नहीं लिखना चाहिए  
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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)

उम्मीदवारों को इस क्वाड्रेंट में नहीं लिखना चाहिए।  
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Earthquakes are sudden and violent wave movement which occurs as a result of strain developing & releasing along the fault lines of rocks & tectonic plates.

As per INDMA → around half of india's area is earthquake vulnerable with 11% with serious vulnerabilities.

↳ Regions like Himalayas are especially vulnerable due to the movement of the indian plate against the eurasian plate.

Regions around trans Himalayas are home of convergence of several mountain ranges which are young-fold and with poor rock quality and load bearing capacity.

Measures taken for mitigation

- ① Retrofitting of essential buildings  
↳ government offices, army installations, hospitals, school etc.
- ② earthquake proof (designs) & resilient construction materials and techniques.
- ③ early warning system for any seismic activity predictions.

(4) proper training of NDRF & SDRF on disaster recovery & Rehabilitation.

(5) engagement of local communities, extensive EIA of any projects in vulnerable Himalayan or western ghat regions.

Issues remaining :-

(1) EIS survey, mapping, utilisation of UAV's to determine any hydrological anomalies in mountainous regions.

(2) inadequate inspection of safety measures & earthquake resistant buildings.

Earthquake is one of the most devastating disasters that needs to be mitigated with a multi-dimensional approach.

8.

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)

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इस हार्जिन में  
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While nuclear fission reaction is the splitting up of an atom into its constituents after a chain reaction that occurs on exceeding the critical weight of Uranium isotope on the other hand [nuclear fusion] reaction happens when attraction force of the nuclei overpowers the [repulsive forces] of [the proton], eventually leading to a huge reaction & emission of energy with the conversion of matter into energy.

$$E = mc^2$$

Recently, scientists at CERN announced net energy gain through nuclear weapons.

→ water into energy in a nuclear fusion reaction

Advantages :- (1) a clean source of energy & in exceedingly high quantities

(2) ability to ~~produce~~ provide energy security to a vast number of operations.

(3) nuclear waste problem is sufficiently minimized.

(4) unlike weather-dependent, unreliable, grid-problematic renewable energy sources like wind & solar, nuclear fusion energy provides much more reliability and energy density.

## Limitations of fusion energy :-

- (1) Problem of contained material :- to prevent from melting & damage.
- (2) radioactivity which remains a primary challenge.
- (3) a huge amount of input energy required beforehand the net energy gain from fusion reaction, thus compromising economies of scale.
- (4) concerns surrounding nuclear proliferation & weaponising into hydrogen bombs.

Therefore, nuclear fusion provides a bright opportunity for future energy security for nuclear dimension. By 2032 India intends to have 50 nuclear plants.

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)

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए।  
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Money laundering is the process by which illegal finances are integrated into the formal financial system through a combination of placement → layering  
 ↓  
 integration

central agencies like ED, CBI & NIA along with Financial Intelligence Unit

India have the legal responsibility of combating money laundering operations.

Prevention of money laundering Act, 2002

① designates money laundering

as a serious offence and declares the individual or group as "economic offender"

(2) allows the deportation & prosecution of fugitive economic offenders in other countries

(3) can declare individuals as fugitives if they disagree to cooperate with the investigation

(4) Allows seizing of the assets of the criminal and its liquidation.

(5) money laundering becomes a non-bailable offence.

(6) special emphasis on the prevalence of cryptocurrency in ensuring money laundering → thus regulation of virtual digital assets.

limitations :- (1) increased cyber security risk & use of dark web in conducting illicit crypto trading and money laundering.

(2) FATF coordination mechanism is subjected to politicization where some countries are not put into grey or black lists.

(3) the nexus between human, drug, narco & money laundering, lack of dismantling of cartel & international cooperation, low conviction rates, more focus on seizing & assets claining.

Thus, despite some shortcomings in structure & implementation, the legal value of PMLA, 2002 remains paramount to combat money laundering.

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)

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

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Indian Ocean Region is the area co-terminus with the Indo-Pacific geopolitical concept and encompasses the region from Western Indian Ocean, off the coast of Africa, to the regions of Pacific island states.

↳ India's geographical & cultural position is central in the IOR.

Threats associated with IOR :-

① Chinese transgressions beyond creating artificial islands in SCS adopting string of pearls chinese

policy, encircling india  
↳ ports in Guadar, Hambantota  
& Myanmar

↳ chinese base at Djibouti in  
eastern Africa

↳ ability to choke critical  
choke points.

(2) Great power rivalry btw  
USA & china in the region

(3) SLOC → sea lines of  
communication are  
essential for trade & connectivity.

(4) Piracy ↳ especially off  
the African coast (Red sea region)  
piracy activities increasing

(5) Illegal fishing  
(6) radicalisation & non-state  
actors in Maldives,

Sri Lanka

(7) economic troubles with  
india's neighbours and  
china's debt-diplomacy.

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए  
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# Way Forward :-

1. SAGAR → collaborate with neighbours & littoral countries of IORA to act as net security provider in the region.
2. focus on Asean centrality in SCS to ensure that china doesn't amount mere doubt in IOR.
3. conduct military & naval exercises with Quad, Australia, Indonesia etc.
4. strengthen coastal security use of DAV's, satellite mapping for any movement.
5. engage with (Bimstec), Saarc & Asean for greater synergy, climate action & security.

Hence, securing the IOR is a turn of us but is a necessary requirement.

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