



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. : 1278123

अभ्यर्थी का नाम/Name of Student : Animesh Verma

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27/8/23

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

केंद्र
Centre

22SE, LUCKNOW

निरीक्षक के हस्ताक्षर
Invigilator's Signature

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

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परीक्षक के हस्ताक्षर Signature of Examiner(s)	

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

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



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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 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

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

Food security means the availability of adequate amount of food along with micronutrients that promotes a healthy living for all.

Dimensions of food security:

1. Economic: i) includes affordability of food especially by the poor.
2. Social: i) access to food for all sections of society including women, SCs/STs, etc.
3. Quantitative dimension: availability of adequate amount of food grains, etc.
4. Qualitative dimension: availability of micronutrients like iron, Vitamin A, etc.

India's status:

1. Economic: i) high cost of TDP products.

- ii) eg: currently tomato costs > ₹ 200/kg
2. Social: i) food requirements of women, SCs & STs are still neglected in many areas.
3. Quantitative: India ranks 102th out of 121 in Global Hunger Index 2022
4. Qualitative i) 'hidden hunger persists'
 a) > 53% women are anaemic (NFHS-5)
 ii) 34% stunting rate among children (GHI, 2022).

Way forward:

1. Open Market Sale Scheme: to ~~at~~ release surplus buffer stock
2. Targeted PDS: reduce p to 40% of the population (Shanta Kumar Committee)
3. Food fortification: eg: golden rice

These measures can help achieve SDG-2 (Zero hunger) & Article (47) improving public health.

2.

ब्लॉकचेन और चैटजीपीटी जैसी आधुनिक प्रौद्योगिकियां कृषि को अधिक कुशल और संधारणीय क्षेत्रों 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 हाशिए में नहीं लिखना चाहिए
 Candidates must not write on this margin

Latest technologies like Blockchain & ChatGPT have caused showered immense potential in various sectors including agriculture.

Block chain & ChatGPT - powerful tools:

1. Power to automate processes like cross-border transactions using Blockchain
2. Human like high intelligence in ChatGPT
 - ↳ handle large prompts, solve complex problems etc.

Transform agriculture into:

a) more efficient:

1. Promote automatic weather forecasting: for better planning of field, sowing time, etc.
2. Help in soil management: better advice by ChatGPT.

3. Crop monitoring: through drones & Chat GPT
4. Adequate fertilizer use: through blockchain based software and ChatGPT

Sustainable sector:

1. Promote water use efficiency: through better irrigation techniques.
2. Manage pests & diseases: through solutions by Chat GPT.
3. Address climate change related problems: better prediction of extreme events.
4. Maintain high yields: through modern solutions provided by ChatGPT

Way Ahead:

1. Digital literacy: of farmers (PMGDISHA)
2. PP & promote private sector participation.

These can help improve food security and attain Article (48)- Agriculture on scientific lines.

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 हाशिए में नहीं लिखना चाहिए
Candidates not write on this margin

De-dollarization of the economy means the increased use of non-dollar currencies in global trade & decreased dominance of \$ USD.

Factors - acceleration towards de-dollarization

1. China's increased GDP & global trade
↳ Renminbi is now widely accepted globally.
2. Other emerging economies: like India, Brazil, etc. Increased acceptance of INR
3. Rupia-Rouble arrangement: opening up of Vostro bank accounts.
4. Bilateral mechanisms: eg: recent MoU b/w India & UAE for ₹ & Dirham trade.
5. Multilateral mechanisms: recent proposal by BRICS for use of domestic currencies & sanctions by the US, EU, etc.

Currencies.

Dollar - not lose its dominance soon:

1. Still high proportion of international trade happens via US\$. (70%)
2. Issue of Cryptos: Cryptos mostly denominated in USD.
3. Issue of capital ~~acc~~ account convertibility of INR, etc.
4. Increased inflation & volatility of other currencies like INR.
5. Lack of trust: USD is the most trusted historically.
6. Reluctance of central banks like RBI as it might affect their control of over the monetary system.

Hence, a graded approach must be followed starting with bilateral MOUs to de-dollarize the economy.

4.

विकसित देशों द्वारा भारत पर खाद्य सस्तिडी 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

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

India's food subsidy regime falls under the Amber Box of WTO (Agreement on Agriculture).

Significant pressure from developed countries:

1. US, EU, etc have raised their voices against India's MSP policy (eg: in Nairobi Conference, 2015)
2. Concerns over its buffer stock policy: storing surplus stocks affects international price of food.
3. See it as a trade-distorting measure (cap of 10% for developing countries).

[Merit in India to retain its policy:]

1. Sovereignty of India: free to

decide its own policies.

2. High poverty: eg: 16.4% multidimensionally poor as per Global MPI, 2023.
3. High hunger rates: eg: 102th rank out of 121 in GHI, 2022
4. Farmer's right to livelihood: MSP helps raise farmers' income.
5. Promote food security: by storing surplus food grains for use during tough times.
6. Promote overall economic growth: as agriculture employs >45% population. (PLFS)

Way ahead:

1. Reduce food and fertilizer subsidies. (Shanta Kumar Committee)
2. Use Pact Clause under WTO Rules.

These measures can promote proper food subsidy regime & help double farmers' income.

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 हिसाब में नहीं लिखना चाहिए
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10

India has 16% of the global population but has only 2% of the world's freshwater resources.

Issues of:

a) Water availability:

1. Large population (750%) still do not meet Falkenmark's threshold of at least 1000 m³/person annually.
2. More than 2/3rd of India faced drought b/w 2020 & 2022. (Global Land Outlook, 2022)

b) Water quality:

1. Polluted, impure water even during floods. eg: recent 2023 Delhi Yamuna flood.
2. Unclean water use by the poor

people- Composite Water Management
Index (Niti Aayog), 2019

3. Spreads diseases like dracunculosis, etc.

Government int initiatives:-

1. PM-KSY (Krishi Sinchayee Yojana:-
i) Per drop more crop ii) watershed
development.
2. Tal Shakti Abhiyan, 2019: i) people
led campaign for better water security.
3. AMRUT 2.0 & JBM 2.0: urban water
security
4. Tal Jeevan Mission: provide 755 litre
/day/ capita of tap water.
5. Metered agricultural feeders: to
promote groundwater wise usage.

Way ahead:-

1. Awareness about water.
 2. Use technology like AI for water
management.
- This can help achieve SDG-6 (Clean
water & sanitation).

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)

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

Glacial retreat in Arctic
is twice the speed of
global average (WMO Report)

Major drivers

1. Climate change & global warming:
eg: 1.5°C above pre-industrial
average (Global Climate Report, 2023)
2. Positive feedback: glacial retreat
reduces albedo $\rightarrow$ more melting.
3. Anthropogenic intervention: eg. recently
Russia deployed ice-breakers in
the Arctic $\Rightarrow$ Northern Sea Route.
4. High GHG emissions by
industries, agriculture,
transport, sector, etc.

5. Sun spots : reduction $\Rightarrow$ increased insolation.

Potential impact on ecosystem:

1. Vulnerable ecosystem : lots of land;
2. Decrease Biodiversity : Eg: polar bears are at great risk (IUCN)
3. Reduce Arctic fauna : like plants of a cold conditions.
4. Affect micro-organisms : who live in polar areas.
5. Rising sea levels : $\approx 1.5\text{mm/year}$ (WMO report)
6. Increased floods, cyclones, storm surges, etc.

Hence, limited activities must be done in the Arctic & early warning systems must be developed.

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 refers to the visit of space by humans mounted on spacecrafts eg. by SPACE-X, etc.

Space tourism viewed as science fiction:

1. Difficult to implement human-safe spacecrafts.
2. High cost of capital
3. High R&D needed.
4. Earlier, no re-usable SLV (launch vehicles).

(Challenges:)

1. Accountability: of the private sector in case of any mishap.
2. High cost of capital
3. High fuel: increase inequality

4. Monopoly of Corporates like SPACE-X.
5. Space debris: might cause accident in space.
6. High GHG emissions → climate change.

Measures needed:

1. More R&D for safer spacecrafts.
2. Higher private sector participation.
3. Outer Space Treaty amendment to fix private sector accountability.
4. Monitor space debris: Cg: Project NETRA by ISRO.
5. Increase govt. funding.

Recently ISRO announced,
India's Gaganyaan mission for
space tourism.

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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Recently CAR-T cell therapy
(Chimeric Antigen Receptor T cells) was
successfully developed by IIT
Bombay.

[CAR-T:]

1. Patients T-cells are withdrawn.
2. Genetically modified to produce ~~antibody~~ CAR receptors.
3. Millions of such T cells are cultivated, then inserted back into the patient.
4. CAR identifies cancer cells & T cells kill them.

[CAR-T game changer:]

1. No dependence on Chemotherapy
2. Single application of T-cells

instead of multiple Chemotherapy.

3. Higher efficacy & identification.

4. Hardly any side-effects.

CAR-T overcome CRISPR-Cas9:

1. Better alteration & identification
of target DNA.

2. Less costly than CRISPR-Cas9.

3. Better efficacy.

Hence more R&D must be
promoted to deploy CAR-T
cell therapy.

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

New & emerging technologies
are used by extremist organizations increasingly. Eg: use of drones to bomb IAF station in Jammu
(Dec 12)

Issues:

1. Cause security threat.
2. Affect national sovereignty of the nation.
3. Promote poor socio-economic outcomes
4. Create fear
5. Cross border nature

[demand for global efforts.]

1. To tackle trans-national nature of these crimes

2. Promote sharing of best practices.

3. Use of global platform like UNICT, FATF, etc

These steps can promote security & peace. (Article 51)

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)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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LAC Standoff in June 2020

Killed 20 soldiers (and martyred)
in Galwan valley.

LAC remaining tense:-

1. Still not 100% disengagement around Pangong Tso.
2. Sometimes eye-to-eye contacts.
3. Changing of names in Arunachal Pradesh by China.

Infrastructure:-

1. Border projects: like CBMs.
2. Vibrant Villages Programme
3. Building border roads around village

ITBP:

1. ~~maint~~ maintain security
2. Promote infra development
3. Promote AP Civic Action
Programme)
4. Surveillance of border areas

These measure can promote
security (A may 5)

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

15

Land productivity means the productivity of land, soil to support more crops and give higher ~~gild~~ yields. While irrigation water productivity means crop ~~gild~~ yields / unit of irrigated water.

Need to shift to water (irrigation) productivity:

1. Promote water security: as $\frac{2}{3}$ of India is vulnerable to drought.
2. Tackle climate change: extremes like droughts have increased (IPCC AR6)
3. Promote crop diversification: shift to nutritious millets like ragi.
4. Promote soil health: eg: pulses fix atmospheric nitrogen.
5. Maintain groundwater availability

for future use.

6. Promote sustainable & conservation agriculture

[Need not shift:]

1. Might affect food security: as irrigation & crop yield.
2. Rising population: Eg: India is now the most populous country (UNFPA).
3. Promote stable income levels: as MSP procurement is mostly for rice & wheat.
4. Might affect soil fertility: due to inadequate irrigation.
5. Regional imbalance: irrigation helps to tackle rainfall deficit.

[Challenges in making this shift:]

1. Reluctance of farmers: attitudinal barriers.
2. Adequate literacy / training about

drip irrigation, etc.

3. High capital cost of sprinklers, etc.
4. Might affect farmers' income
5. Availability of adequate equipments for micro-irrigation.
6. Low farm mechanization, about 40%.

Way ahead:-

1. Promote skilling via Krishi Vigyan Kendras.
2. Machinery availability through FARMS app.
3. Subsidies for micro-irrigation-sprinklers, etc.
4. Awareness generation.

These steps can promote sustainable agriculture (SDG-2) & the water availability (SDG-6).

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)

15

Green hydrogen ^(GH₂) refers to the H₂ produced from ~~electrolysis~~ electrolysis of water through RE (Renewable Energy).

Role of GH₂:

1. Promote meeting rising energy demands: 4% annually (CEA reports).
2. Help to reduce cost of power for consumers, other users.
3. Industrial needs: like in oil refinery, steel industry etc.
4. Promote more RE: meet India's Panchamrit goal & INDIA.
5. Sustainable source of power energy
6. Use of fuel cell vehicles: based on H₂ → mobility

National Green Hydrogen Mission, 2023:

1. Promote 5 million tonnes of GH_2 production by 2030.
2. 5/6Hr component: i) to promote GH_2 transition & replace fossil fuels. ~~it~~
3. Green hydrogen hubs will be developed in India.
4. Exempt Exemption from inter-state transmission charges for 25 years for GH_2 .
5. National Centre of Excellence for GH_2 .
↳ promote R&D
6. PS2 for GH_2 projects; for credit availability.
7. Promote goals like Panchamrut: net zero by 2070.
8. Achieve INDC targets: i) reduce carbon emission intensity by 45%.

- ii) $\frac{750}{500 \text{ GW}}$ renewable energy capacity by 2030.

Other energy goals

1. Panchsmit (COP26)

- i) net zero by 2050
- ii) 500 GW renewable energy capacity by 2030.
- iii) 50% RE installed electricity capacity.

2. Updated NDC: like reduce carbon emission $\sim 45\%$.

3. Paris Agreement, 2015: limit to 1.5°C

Way Ahead:

1. Promote more R&D.
2. Global Cooperation: eg: with World Bank for funding.
3. RPO targets: mandatory use of GW by industries.

These steps can promote SDG-7 clean & affordable energy & climate action (SDG-13).

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)

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

15

Article 42 of the Constitution (DPSP)

promotes a living wage for all workers & maternity benefit while

Article 43 aims to raise living standards of the workers.

Be Minimum wage to living wage.

1. Minimum wage is based on a floor wage. Supports only minimal livelihood needs.
2. Living wage refers to adequate wage to support right to live with dignity (Article 21).

Benefits of living wage

1. Promote better living standards (Article 43).

2. Better health of workers.
3. Better education of workers & their children. Increase literacy
4. Better employment: better skilling through govt. programmes for up-skilling (eg: PM-KVY)
5. Reduce poverty: Currently 16.4% poor (MPI, 2023).
6. Reduce inequalities: SDG-10
7. Better / true democracy: with equal opportunities
8. Economic: higher affordability of goods, etc.
9. Ethical: i) promote liberalism
ii) rights based approach.

Constraints:

1. Issues / lack of consensus over Code of wages, 2019, minimum floor wage.
2. Lack of financial resources: eg: 6.4%

fiscal deficit deficit of centre (ES FX23)

3. Lack of adequate jobs: due to Capital intensive, automation (AI) etc.
4. High informal economy: 790% in ~~informal~~ informal sector.
5. Lack of private sector participation:
eg: Strained MSME balance sheets.

Way Ahead:

1. Urban employment guarantee: eg. like in Rajasthan.
2. Promote right band approach: like right to health, living, etc.
3. Incentivize private sector to raise wages.

These steps can promote adequate & decent work & economic growth (SDG-8).

14.

केंद्रीय बजट भारतीय अर्थव्यवस्था के लगभग हर क्षेत्र 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

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

The Article 112 of the Constitution provides for the 'Annual Financial Statement' (Union Budget) to be laid down before the Parliament.

Union Budget - affects almost every sector of economy:

1. Housing: eg: PMAY allocation increased sharply in 2023
2. Railways: eg: ₹ 2.4 Lakh crore allocation to the Railways.
3. Infrastructure: eg: 50 year free zero interest loans for states for capital expenditure.
4. Industries & MSMEs: eg: date extended by 1 yr for starting manufacturing to get tax incentives.

5. Savings: eg: PM NSSC (Mahila Samman Savings Certificate).
6. Logistics: eg: 4 multimodal logistic parks to be set up (Budget-2022)

No substantial public scrutiny:

a) Budgetary processes:

1. Low control of Parliament: due to majority enjoyed by government in the Lok Sabha.
2. Weak financial committees: like PAC, Estimates Committee, etc → post-mortem nature of work; recommendatory.
3. Low use of ICT: no e-budgeting.
4. Poor access to budget data: citizens do lack full access to budget & estimates.
5. Lack of public participation.

b) Budgetary policies:

1. Lack of awareness among citizens.

2. Weak powers of financial committees -
cannot question policies of the govt.
3. Low less audit by CAG: due to
overburden.

Public Scrutiny:

1. CAG audit reports
2. Passing of Appropriation Bill to
withdraw even ₹1.
3. Changed expenditure on Consolidated
Fund of India - non-votable.
4. Parliamentary forums: raise awareness
among citizens.
5. Public Account Committee, other committees.
↳ assistance of CAG, etc.

Hence, more effective controls are
necessary. Public part participation
needs must be encouraged &
budget data must be
provided digitally.

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)

उम्मीदवारों को इस हशिप में नहीं लिखना चाहिए
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India is the ~~no~~ world's largest milk producer due to the White Revolution started in 1970 by NDDB (Dairy Board).

India: milk deficit to ~~no~~ world's biggest milk producer.

1. Initially before 1970, very low per capita milk availability. < 100 ml/capita.
2. High malnutrition & stunting.
3. After, 1970 under Venghese Kurian, Operation Flood was started.
4. Schemes like White Revolution promoted dairy cooperatives on

lines of AMUL.

5. Small & marginal farmers also participated.
6. FPOs & dairy facilities developed.
7. Through Economies of scale, input costs reduced, production & incomes increased.

Productivity of Dairy Animals:

1. Low productivity: due to over-reliance on foreign breeds.
2. Foreign breeds are more susceptible to ~~diseases~~ diseases like FMD (Foot mouth diseases).
3. Recent outbreak of Lumpy Skin Disease eg: more than 2 lakh cattle died in Punjab alone in 2022.
4. Low use of TCT: like artificial insemination, etc.
5. Low vet veterinary services

6. Low skilling of farmers.

[Way ahead:]

1. Promote schemes. National Animal Disease Control Programme
2. Better breeds - NAIP (Artificial Insemination Programme).
3. Funding - Dairy Infrastructure
4. Development Fund.
4. Rashtriya Gokul Mission.
5. National Livestock Mission - Scientific management of livestock.
6. Promote more dairy cooperatives & FPOs.

These steps can stabilize
milk prices & increase milk
availability. Contribute to
SDG-2.

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)

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

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Climate change will lead to reduced crop yields, increased diseases & higher frequency of droughts, floods, etc. (IPCC AR6 report).

Climate change → Crop failures:

1. Reduced land productivity: lower soil fertility.
2. Reduced harvests (IPCC AR6)
3. Higher droughts & floods, cyclones etc.
4. More pests: eg: locust African Swail (IPCC AR6)
5. More crop diseases
6. Increased irrigation requirements.

Agriculture → extreme weather:

1. High GHG emissions: eg: from paddy

fields.

2. Contribution to global warming:

22x contribution (WMO reports)

3. Unsustainable practices: like
groundwater exploitation,
high fertilizer use, etc.

4. Deforestation: i) increases GHG

ii) reduces natural barriers
to cyclones, etc.

5. Shifting cultivation, over-grazing
& cropland expansion

are ~~one of~~ the major causes.

(FAO - Forest Resource Assessment
Summary)

National Agriculture DMP

1. Insurance: crop insurance under
PM-FBY (Kasal Bima Yojana)

2. Use of climate-smart agriculture:
like integrated farming system,
conservation agriculture, etc.

3. High water use - efficiency : eg:
drip irrigation.
4. More crop diversification : eg. pulses.
leguminous crops.
5. Crop rotation : better soil fertility.
6. Use of soil health cards
7. Weather forecast : eg: NEIP-1, Mausam
app, etc.
8. ICT use : eg: drones for monitoring etc.
9. Mapping of hazard zones. eg: coastal
areas.

Thus, more skilling &
funding is needed for climate
resilience of agriculture. Private
sector must be encouraged to
increase investments.

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

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

Recently (November 2022), earthquakes struck Delhi-NCR region. These earthquakes originated in Doti & Silanga in Nepal respectively.

Some regions - highly vulnerable to earthquakes.

1. Very high damage risk zone (Zone V)
↳ Himalayas, NE, etc.
2. High damage risk zone (Zone IV)
eg: ~~lower~~ lower foothills of Himalayas.
3. Moderate damage risk zone (Zone III)
eg: Delhi-NCR, Bihar, UP etc
4. Low damage risk zone (Zone II)
eg: interior India
5. Very low damage risk zone (Zone I)
eg: parts of Deccan plateau

Institutional measures

1. NOMA guidelines ^{on} Earthquake
2. Hazard mapping: by NIM (National Institute of DM)
3. Earthquake resistant construction:
Eg. National Building Code
4. Funding: eg. National Disaster Response Fund.
5. Organizations like NOMA → open body,
NPDRR (platform to coordinate
between centre & state).
6. Emergency plans in hill areas, etc.
7. Response force: eg. NDRF, SDRF, etc.
8. Projects like SECURE HIMALAYA,
NM SHE (Sustaining Himalayan
Ecosystem)
↳ promote afforestation.

Significant gaps:

1. Low R&D on earthquake prediction.

2. Low awareness among citizens about emergency plans, etc.
3. Low implementation of building codes eg. recently many buildings collapsed in Himachal Pradesh.
4. Poor use of of IT like social media, AI, etc. for best practices

Way Ahead:

1. Follow all NAMA guidelines - Zoning at local level.
2. Promote community led response eg. AAPADA Mitra.
3. PRU involvement → capacity building of local bodies (Sender framework)
4. Monitoring of implementation of building codes.

Hence, there are still some gaps. Above measures must be adopted for earthquake resilience.

18.

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)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Recently at the National Ignition Facility (NIF) in US, scientists ~~attained~~ announced net ~~to~~ energy gain (>1.0) in nuclear fusion reaction.

Net energy gain - breakthrough:-

1. First time ever gain of 1.6 was achieved in nuclear fusion.
2. Magnetic control devices Δ tokamak reactor was used to get nuclear fusion.
3. Hydrogen isotopes combined to form He (Helium).

Advantages of nuclear fusion based power:-

1. Vast power production potential.

2. Clean energy: no GHG emissions
3. Help attain SDGs, global commitments like INDC, Paris Agreement etc.
4. Sustainable energy security for future generations.
5. Research / Scientific knowledge about fusion process.
6. No radioactivity emissions; safer than nuclear fissions.
7. Promote reduced cost of power due to higher competition

Limitations for commercial scale:

1. High input resources: eg. nuclear fusion requires millions °C temperature.
2. High pressure requirement
3. Nascent technology at R&D stage.
4. High capital cost of tokamak.

5. Low input raw material availability of H_2 isotopes.
6. ~~It is~~ Very temporary reaction: sustained for only a few seconds. Unlike fission chain reactions.
7. Low R&D & expertise

Way ahead:

1. Increase R&D spending.
2. ~~to~~ International Cooperation: eg: ICET Initiative
3. Promote NRF (National Research Foundation) under NEP, 2020.

These steps can help promote clean energy use & its affordability (SDG-7) & climate action (SDG-13)

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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उम्मीदवारों को इस हशिप में नहीं लिखना चाहिए
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Recently, in 2019, the Money Laundering Act, 2002 (PMLA) was amended to increase its efficiency.

PMLA (Amendment), 2019:-

1. More expanded definition of money laundering (ML): includes assets & properties.
2. Makes ML a cognizable & non-bailable offence.
3. Makes the offence of ML a separate offence.
4. More powers to ED (Enforcement Directorate) to attach properties, etc.
5. High (two) conditions of bail: i) upheld by SC (Vijay Madanlal case, 2013)

ii) to prevent a criminal from escaping legal process.

6. Chargesheet by ED not a police FIR.
↳ info about crime, accused, etc.

Menace of ML in India:

1. Increased use of Hawala transactions.
2. Use of TCT like Crypto currencies for ML.
3. Other methods like Credit cards, 3rd party cheques etc. are also used.
4. FATF report: ML can affect financial stability of India.

Efficacy of PMLA:

1. Predicament - offence oriented law:
eg: ED depends on probe by (B)
to first decide on original crime
2. High pendency & low conviction rate
3. Increased cases of money laundering still prevalent in India.

4. Lack of inter-agency coordination:
like police, ED, etc.
5. Low powers of ED: earlier
couldn't attach illegal property.
6. Overlapping provisions of PMLA
with FEMA, 1999

Way Forward:

1. Promote inter-agency coordination.
2. Intelligence sharing like NATARIP
3. Adopt global AML standards
set by FATF.
4. Vienna Convention; 5. UN Global
Programme Against ML.
6. Citizen awareness about ills of ML.

These measures can promote
security & financial stability
of India.

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)

The Indian Ocean Region (IOR) has many security threats due to high population, low monitoring and low coordination, etc.

Security threats in IOR:

1. Marine Terrorism
2. Infiltration, illegal refugees, etc.
eg: 26/11 terror attacks → used maritime route.
3. Drug smuggling eg: recently 2,500 kg drugs seized by NCB in Kerala
4. Illegal arms smuggling: war drones, disguised fishing vessels, etc.
5. Piracy & armed robbery: eg in Gulf area, Red Sea, etc.
6. Money laundering: trade of counterfeit etc.

India's maritime border interests:-

1. Maintain peace & stability
2. Curb terror terrorism
3. Tackle smuggling of drugs, arms, counterfeit items, etc.
4. Security of white ships: tackle piracy etc in Arabian Sea.
5. Promote trust of coastal people so that they can sleep peacefully

Robust strategy:-

1. NIA to investigate marine terrorism.
2. NSG to respond to terrorism, etc.
3. Patrolling (coordinated) by Indian Navy, Coast Guard & Marine Police Force.
4. CMO (Customs Marine Organization) - to tackle illegal smuggling

5. NLB: Cg. Operation Samudra Raksha to tackle drug smuggling.
6. Adopt OLC (Osibanti Code of Conduct), implement Maritime Piracy Bill, 2013 to tackle piracy.
7. Awareness generation among coastal people.
8. NATGRID, MAC (Multi Agency Centre) for intelligence sharing.
9. FUTADS (Integrated Underwater Harbour Defence System) eg: in Mumbai & Vizag to detect all types of marine threats.
10. Use of ULF: like GPS, transponders to detect illegal vessels.

These steps can promote economic growth (SDG-8) & security of the country (Article 51A).

SPACE FOR ROUGH WORK

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