



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. : 1471535

अभ्यर्थी का नाम/Name of Student : VISHNU SABKUMAR

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

ENGLISH

तारीख
Date

27/08/2023

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

केंद्र
Centre

Tawandrum (18).

निरीक्षक के हस्ताक्षर
Invigilator's Signature

[Signature]

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

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

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

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



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

Food security is a vertical obligation that India has to fulfill as a part of being welfare state under the Directive Principles of State Policy (Article 36-51).

Different dimensions of food security

- production of adequate food grains
- storage & transportation
- accessibility to food grains
- Nutritional security.

India's performance of ensuring food security

- 1) Strategies like Green Revolution increased crop productivity, thus increasing food grains produced.

But production at any cost caused environmental degradation, thus making agriculture almost stagnant today. (NITI Aayog)

* Storage and transportation

↳ Food cooperation of India - has high buffer stocks and reserves

But there is high amount of wastage due to open ended procurement.

* Accessibility to food grains

↳ PDS through NFSA 2019 ensures food grains to all. Recent merger of PM Garib Kalyan Anna Yojana also shows the same

↳ But inclusion errors & lack of accessibility leading to starvation death. Eg Tharukhand

* Nutritional security

↳ monocrops; reduced diet diversity

→ poor child statures, wasting is high

→ Food security ignores nutritional security

Including Pulses & Millets as per

Rakesh Mohan Committee in PDS food security 7

can ensure all aspect of food security can

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

Blockchain refers to decentralized network & ledgers which are peer controlled, while CHAT-GPT is a generative AI which is pre-trained. Both have immense potential to transform agriculture.

Blockchain & Chat GPT - transform agriculture

1) Blockchain

- ↳ Can help in certification of products through peer controlled process, boosting exports.
- ↳ lead to institutional credit through peer-peer lending in cooperatives
- ↳ Helps in efficient branding under NPOP and participatory marketing increasing their income

Chat-GPT → give information regarding best
↓
cropping patterns based on agro
climatic zone
Help in spreading information about best practice model
in other countries.

↳ Help in connected IoT enabled agriculture
helping in precision farming

Other Modern Technologies

- 1) Drones to map the farm, plan the output & spray pesticides in controlled manner.
- 2) 3D printing to print environmental friendly recyclable farm structures like outhouse, stables etc.
- 3) gene editing technology to provide GM crops.

Challenges

- 1) Lack of vernacular chat GPT modules its penetration
- 2) Lack of information & awareness on such tech
- 3) High cost of technology reduces adoption by small & marginal farmers.
- 4) Distrust in technology & negative attitude by farmers.

Contract farming to Boost technological
adoption can ensure modern tech harnessed by

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-dollarisation of the global economy means reduction in use of dollars to settle international transactions.
As per IMF, the share of dollars in other countries' central banks slid from 90% to 55% in 2022.

Factors accelerating de-dollarisation

- 1) Weaponisation of dollar by ^{USA} placing restrictions on convertibility of dollars.
Eg. Russian sanctions
- 2) Rise of mechanisms like Nostro Account.
Nostro account enabling settlement in domestic currencies.
- 3) Currency swap agreements reducing the dependency on dollars.
- 4) Desire of countries to maintain autonomy in trading & foreign policy led to trend of de-dollarisation.

1) Multilateral arrangements like New Development Bank of BRICS reducing dollar's dominance

2) Erosion of credibility to us dollar among global sources.

3) settling of Bilateral trade in domestic currency - by India - UAE agreement.

Dollar not losing its significance soon

Dollar is not going to

lose its significance soon as

1) high trust and creditworthiness to us dollar.
1) Dollar dominated IMF, WB & WTO.

2) reduction in trust & legitimacy of ₹ due to demonetisation, Yuan due to state control over exchange rate.

3) even today dollar remain the standard for settling international trade.

Nonetheless following RBI Paper on internationalising ₹ is a good strategy to make ₹ global in long run giving India soft power

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

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

The Minimum Support Price,

The Public Distribution system through open ended procurement are food subsidy regime which India follows. The developed countries want to alter India's food subsidy systems.

Merit in food subsidy regime

-) ensures food security to poor through PDS, fair price shops
-) ensures guaranteed income to farmers incentivising grain production
-) leads to creation of strategic reserves which country can use during disasters like COVID-19.
-) hypocrisy of developed countries as

They give huge amount of subsidy through DBT. ∴ In order to protect our producers from competition & dumping we give food subsidy

Issues with food subsidy

- 1) Developed countries allege it is trade distorting as it proves to be a barrier in free trade.
- 2) Against WTO principle as it comes under Amber Box subsidy.
- 3) Lead to mono cropping as they are skewed in favour of rice & wheat.
- 4) affects nutritional security due to absence of diversity like Millet.
- 5) affects environment as unsustainable practices like coke extraction for growing iron.

As per Normala Sitharaman, food subsidy must be seen as a "support subsidy" not distortive one to ensure welfare. Govt can broaden food subsidy through (DBT) and provide to Millet & pulses.

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
Candidates must not write on this margin

10

According to NITI Aayog's Water Composite Index, more than 33% of India's districts are severely water stressed showing the issue of water availability and quality even after initiatives

Initiatives by Govt

→ Atal Bhujal Yojana to recharge & manage ground water

→ Jal Jeevan Mission - to manage & supply drinking water

→ PM Sanchayee Yojana to ensure micro irrigation

→ Water Policy to have overarching policy on water

Water issues & quality warrant prioritised intervention

→ Increase in pollution of fresh water resources.
Eg BTM Lake, Bangalore

- 1) Increase in population and demand leading to irresponsible consumption.
- 2) Fertilizers & industrialization degraded ground water quality through contamination.
- 3) Unequal access to water → Katwa has water deficiency while Mumbai has access to water.
- 4) Ignoring water recycling & green water for better hydro management.

Way ahead :

- 1) Central water commissions as per Mohi's study committee.
- 2) Demand control & management of water to promote responsible consumption.
- 3) Use of recycled water for agriculture & non potable uses.
- 4) Water user authority - MP & Gujarat model for participatory decentralised approach.
Right to equal quality & quantity of water is a right of all as per Severish Kumar vs Bihar verdict.

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

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

Glacial retreat refers to fast melting of glaciers of Arctic leading to widespread impact on Arctic ecosystem due to several reasons.

Reasons for melting

- 1) Green House gas emissions leading to higher temperature.
- 2) Positive feedback loop where melting promotes further melting due to reduced albedo.
- 3) Black carbon & soot deposited on ice increases heat absorbing capacity.
- 4) Reduced snowfall due to evartic precipitation leads to no addition of layers of ice.

Potential impact of Retreat

- 1) lead to stictic greening as ice melt poses way for ambient growing condition
- 2) rise in sea level leading to flooding in surrounding areas.
- 3) extinction of endemic species like polar bears due to loss of habitat
- 4) increased acidification of oceans due to release of sequestered carbon
- 5) affect precipitation as phytoplankton which produce DMS reduce.
- 6) Release of potential pathogens trapped in ice which can spread zoonotic diseases.

India's INCOLS & Himadri can play a crucial role in finding cause for Arctic melting retreat helping to make glacier retreat a global agenda in Climate Negotiation.

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

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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Space tourism refers to
low earth orbit or sub-orbital space orbital
flights whereby people break the Karman
line & go to space for commercial purposes
Eg → Space X, Virgin Atlantic

Why its becoming a reality

- 1) Technological advances in form of reusable
one-entry vehicles,
- 2) Rise of private companies like Blue Dot,
Space X, Virgin Atlantic,
- 3) rising influence (wealth) allowing affordability

Challenges to space tourism

- 1) lead to space pollution (similar to Everest)
due to space debris

1) Outer space treaty does not fix responsibility on private players for mishaps, so there is less accountability.

2) Lack of uniform health standards & guidelines for space tourists.

3) Unequal development & access can lead to space colonialism of global common.

4) Might trigger accident by compromising safety standard for profit of companies.

Measures

1) Outer space treaty - Being private parties under responsibility clause.

2) Create Standard Operating Procedures & Health guidelines.

3) An International Authority to regulate private players.

4) Global cooperation to set up funds to democratise space sector.

5) PPP collaboration on space tourism

space tourism by India can make it cheap, making India a hub for the same.

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)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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CAR-T cell therapy

refers to use of T cells to destroy ~~carcinogenic~~ carcinogenic cells. It ~~is~~ can be used over CRISPR-CAS-9 which is a gene editing technology.

CAR-T overcome limitations of CRISPR-CAS-9

- 1) reduces the side effects as no gene editing is done
- 2) can suppress faulty genes that can arise in case of CRISPR-CAS-9.
- 3) CAR-T is more accessible as it can get regulatory clearances faster than CRISPR-CAS-9.

1) reduce future complications in post-treatment period.

2) prevent unethical use of technology as CRISPR-CAS-9 can be used for Eugene babies while CAR-T cannot.

3)

CAR-T - game changer

1) eliminate the root cause of cancerous cell

2) bypass the need for radiation and chemotherapy.

3) reduce weakness of the body due to conventional treatment.

4) less intensive.

5) help people to continue their jobs while treatment, thus making it affordable & accessible.

The Dept of Biotechnology must look for new funding & research to mainstream CAR-T as a standard treatment option.

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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According to Baylis & Smith, globalisation has increased the access of new and emerging technologies to violent extremist organisations, increasing their threat

New and emerging technologies by violent organisations

- crypto and blockchain for financing
- Drones for surveillance & strikes
- AI for hybrid warfare and simulation.

→ 3D printing for new weaponry

→ ICT technology for communication & coordination

Demand for concerted global effort

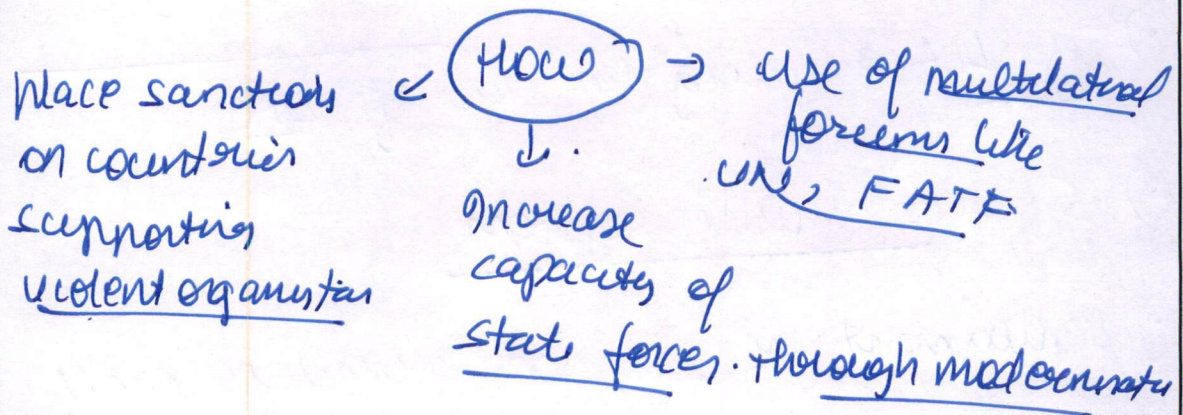
→ Organisations operate in different

national jurisdiction requiring cooperation to track them.

1) Diffused nature of operations & decentralisation requires global efforts to neutralise them

2) Presence of nodes in digital space & sphere reduces one country's capacity to act on their own. Need cooperation from Big Tech.

3) Global regulations required to place curb on global trade of new tech for violent organisation



India's Comprehensive Convention on Terrorism can be a gamechanger to reduce alien to technologies by organisation through global effort

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)

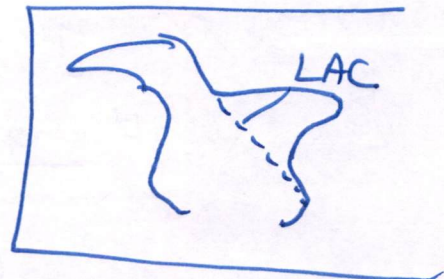
उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Line of Actual Control is de facto border b/w India & China based on 1993 Agreement of Peace & Tranquility along Border. Galwan clash 2020 saw break of peace & forming of militarisation in LAC

Infra ramp up

1) India building Tajida tunnel to ensure access



2) Tejas LCA & along the skies of LAC.

3) S-400 missile system

4) Deployment of 200,000 armed personnel

5) Reequipped with latest army.

6) Wanlat Beg Oldi Road's Drones

→ China increasing military deployment & dispower along the LAC.

→ Role of ITBP

- 1) first responder and crisis manager on the LAC.
- 2) holds the ground till armed forces arrive in
- 3) ensures territorial integrity by regularly patrolling till PP 14 point.
- 4) prevents Chinese unilateralism along LAC by opposing Chinese incursions
- 5) provides safety & protection to outcast infrastructure of LAC and the people
- 6) ensures development by creating demand for consumer goods in the region

India's decision to place more ITBP personnel shows its importance in ensuring secure India by securing the LAC.

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 हार्शिए में नहीं लिखना चाहिए
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land productivity refers to

output achieved per unit of land measured &

irrigation water productivity refers to increase in output achieved per unit of irrigated

water, Due to constraints on land factor,

there is a focus on irrigated water productivity for food security.

Need from land productivity to water productivity

- 1) land degradation and fixed amount of land as factor of production place restrictions on land.
- 2) flood irrigation method leads to a wastage of resources.
- 3) can reduce the cost of production by

optimal use of water resource.

- 1) prevent land degradation due to salinization due to overirrigation.
- 2) Ensure water security for all farmers, even in drought regions.
- 3) enable diversification of crops as per agro-climatic zones as per Salwa committee.
- 4) make agriculture environmental friendly by reducing GHG emissions from flood irrigation.
- 5) ensures per drop more crop increasing the output.

Challenges

- 1) Distortive subsidies like electricity, diesel subsidies prevent nudges for water efficiency.
- 2) MSP prevents crop diversification, thus leading to water intensive crops in drought areas.
Eg - Sugarcane in Maharashtra

- 1) 85% of farmers are small and marginal farmers, thus microirrigation tools are expensive initially
- 2) Degradation of water quality due to exploitation (NITI Aayog - 1/3rd districts are water stressed)
- 3) Poor private investment in agriculture, post LPG reforms (1991) reduced penetration of technology
- 4) Lack of awareness and knowledge among farmers regarding efficacy of water productivity.

Way Ahead

→ Central water Commission as per Mishra Shah Commission

→ PM KUSUM - to harness renewable energy in microirrigation & complement incomes

→ Credit linked subsidy to farmers through Cooperative banks

→ PIACS to provide ~~etc~~ equipment to farmers - NITI Aayog

→ Custom Hiring Centre in MP + Koushi Vigyan Kendras to hire & spread awareness on technologies

Pradhan Mantri Koushi Sinchayee Yojana

is a step to move towards water efficiency to achieve doubling of farmers income

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 हाशिए में नहीं लिखना चाहिए
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Green Hydrogen refers to the hydrogen created from H_2O by splitting it through electrolysis using renewable energy.
Green Hydrogen can play a role in unlocking energy security.

Role of Green Hydrogen in energy security

- 1) Reduces dependency on crude oil imports from Middle East & Russia.
- 2) prevents weaponisation of trade if countries block energy access due to bad relations
- 3) ensures energy independence and diversification enabling autonomy in decision making.
- 4) leads to fuel for future industrialisation and development through green Hydrogen.

→ Increases access to critical and new energies like fuel cells due to spillover effect

In order to tap this potential of security, the country launched National Green Hydrogen Policy.

National Green Hydrogen Policy

- W
H
A
T
- ₹ 19000 crore package by Govt
 - ~~Make~~ India as a Hydrogen Hub
 - fuelling & refuelling infrastructure
 - Attract private investment in the sector.

NGH - to achieve energy goals:

- 1) Lead to creation of Hydrogen energy infra-structure allowing adoption of Green Hydrogen
- 2) Low GHG emissions in line with India's renewable energy goals as per Panchamrit
- 3) Attract private investments in the

renewable energy sector leading to crowding in

→ reduce dependence on conventional sources like coal, gas etc.

→ Ensure self sufficiency through storage and cryogenics technology.

Challenges in achieving energy security through Green Hydrogen

- low government investment as at least \$2.5 billion is required for scaling up Green Hydrogen.
- high cost of production can make energy unavailable for many.
- poor skilling (only 4% of workforce skilled), can reduce the penetration of Green Hydrogen.
- Hazards due to poor storage & cryogenics can delay adoption in Hydrogen due to its combustibility.
- Shift can create unemployment for many in coal sector (1 million workers in coal sector).

Following the Superconductor Model where state leads the investment & seeks global partnership in production, similarly for Hydrogen, can make NGH a true reality.

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 refers to wage received by a person enough for their sustenance. Living wage refers to higher amount of wage which is required for dignified living.



Transition from minimum to living wage - benefits

- 1) Ensures higher standard of living for the worker.
- 2) Leads to greater human capital development as people have access to education & health.
- 3) Increase in GDP due to increase in income and consumption.
- 4) Reduce inequalities between haves & have nots (Oxfam report - 1% own 30% of wealth & bottom 30% own 1% of wealth)

- 1) Boost for Small & Medium Enterprises due to increased demand.
- 2) Increase in foreign investments due to higher purchasing power.
- 3) Reduced strikes and protests leading to peace & harmony in society.
- 4) Increase the capabilities of workers as per se worker's capability improves.

Constraints in adopting a living wage.

- 1) High burden on state exchequer as more resources need for revenue expenditure (eg. ^{MGNREGS} fund).
- 2) Resentment from industrialists and capitalists as their cost of production goes up.
- 3) Can lead to inflationary spiral due to higher demand & purchasing power.
- 4) Reduce investments in the country as

Ease of Doing Business reduced. due to reduction in global competitiveness.

2) Reduce capital expenditure as revenue expenditure is increasing with same resources

How to solve the challenge

→ skilling the youth as per PMKVY-4.0 to increase their bargaining power

→ reducing demand-supply gap by creating new opportunities for self employment

→ use of labour 20 of G20 to arrive at global Standard & formula of living wage for farmers

→ living wage to be commensurate with social

Security → food
→ insurance
→ education
→ healthcare

India is push for living wages can be seen in recent labour 20 meetings where it pushed for living wages to be adopted as a global discourse on

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)

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Article 112 of the Indian

Constitution provides for Annual Financial Statement of accounts dealing with the revenues and expenditure of the Govt.

Union Budget affects every sector.

- No grants or money from Consolidated Fund of India can be released for any sector without budgetary approval of Parliament
- Shows revenue receipts of all sectors
- Plans capital expenditure for all sectors
- Contains direct & indirect tax proposals affecting the economy.

Budgetary process and policies under scrutiny

There are enough public scrutiny measures guaranteed through

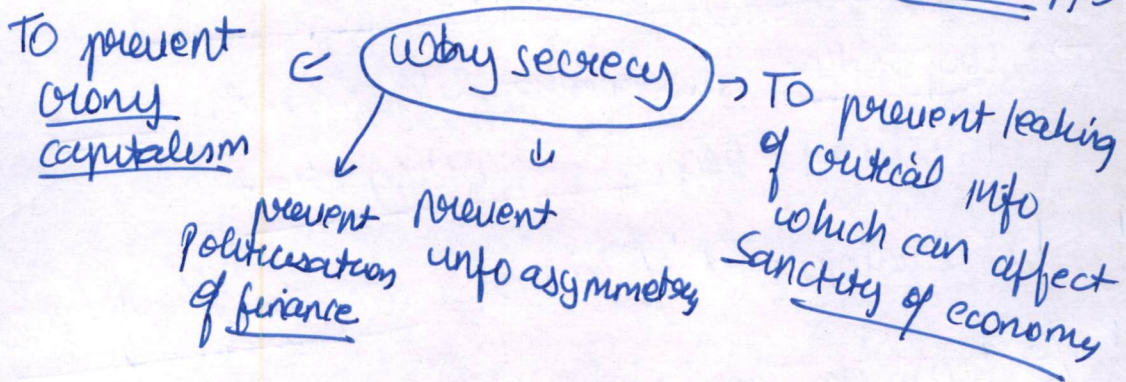
- 1) Public Accounts Committee where budgetary provisions are looked by Parliament
- 2) Department Related Standing Committees where representatives of people scrutinise the Demand for grants of the Budget.
- 3) Estimates Committee to look into the appropriateness of estimation
- 4) Parliamentary approval through Finance Bill and Appropriation Bill ~~can~~ only make the Budget applicable
- 5) Comptroller & Auditor General (CAG) under Art 151 ensures proper auditing of Govt records & Budget.

Given the large population & diversity, we don't have direct sovereignty.
Instead, it's a delegated sovereignty through representatives

However issues persist

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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- 1) PAC can ~~not~~ only look unto ex-post facto expenditure - only after it is done.
- 2) CAG can only audit, he cannot control the budget, not question its wiseries
- 3) use of guillotine to bypass scrutiny of grants by DRSCs
- 4) reduced public participation in putting their inputs through e-governance (My Gov App)



Following Addis Ababa declaration on accounting, making CAG more powerful (UK model) & use of NGOs, social media & vernacular e-governance can ensure Jan Bhagidhari in Budgeting process

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)

Operation Flood, initiated by Vaaghese Kurien in Gujarat led to White revolution making India the largest milk producer. However, India's dairy animals' productivity is a matter of concern

India transformation to largest milk producer

- How
- cooperative movement like KAIRA, AMUL involving people's participation
 - development of rural cold chain infrastructure
 - focus on bovine health & productivity
 - pooling in of resources & dairy owners themselves responsible for inclusive marketing

Productivity of dairy animals - concern

- repeated artificial insemination to increase

Lactation reduced the productivity of cows

- 1) Rising prevalence of bovine diseases like Foot & Mouth disease, Anthrax leading to deaths.
- 2) Low availability of quality fodder reduces nutritional intake.
- 3) Inaccessible veterinary healthcare increases mortality rate of animals.
- 4) Antimicrobial resistance due to hormone injection, chemical treatment of fodder.
- 5) Traces of heavy metal found in milk of Cows in Andhra Pradesh.

These factors have reduced the production capacity of cows & buffaloes.

Way Ahead

- 1) Rashtriya Gokul Mission to develop a comprehensive policy on animal husbandry under Ministry of Animal Husbandry
- 2) Andi-Gau to develop indigenous varieties which are resistant to diseases
Eg - Vechur cows, Gir cows.
- 3) Development of Mobile Veterinary Service increasing doorstep access.
- 4) Model Agriculture & Livestock Act to be implemented by states (NITI Aayog)
- 5) FPIs to be promoted to increase demand for dairy products.
- 6) Awareness on animal vaccination through KVKs to reduce preventable diseases.

Mixed Farming Model can be achieved if the productivity of dairy animals is increased as farmers would find it remunerative, as insurance & insurance

16.

जहां 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)

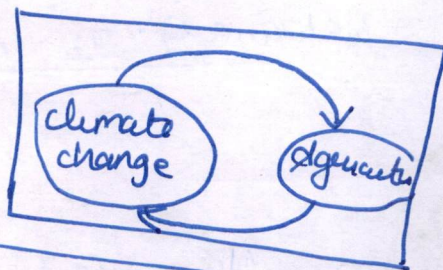
While climate change is responsible for crop failures, the agricultural sector itself is partly responsible for extreme weather events. Discuss. What strategy has been adopted under National Agriculture Disaster Management Plan to strengthen the resilience of the farming community in India? (Answer in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

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Agriculture and climate

change are intricately linked to each other as both of them affect each other. The recent IPCC 6th report also says the same



Climate change & agriculture connection

Climate change affecting agriculture

- ↳ Erratic Monsoon can lead to crop failures - (around 80% of farmers dependent on Monsoon for irrigation)
- ↳ Increasing droughts & heat strokes can lead to drying of crops
- ↳ Events like Hailstorm due to climate change damage crops. (Eg- Hail in Delhi destroyed wheat crops nearby)

Agriculture sector affecting climate change.

- ↳ Agriculture remains the highest green house gas emitter in form of Methane Emission
- ↳ Flood irrigation, in rice leads to methane, at night crops release methane CO_2
- ↳ Tilling & ploughing releases sequestered carbon
- ↳ Animal husbandry, especially bovines are source of Methane & CO_2 emission.

In order to make agriculture resilient, National Agriculture Disaster Management Plan has been envisaged

National Agriculture Disaster Management Plan

- 1) To provide insurance coverage to farmers through schemes like Fasal Bima to secure from risks.
- 2) To increase irrigation, microirrigation to reduce the risk from uncertain monsoons

- 1) To put forward early warning systems partnering with IMO to make farmers ready & reducing the intensity of damage.
- 2) Developing post harvest infrastructure to prevent loss and damages.
- 3) Development of Krishi Vignyan Kendras and Outreach Knowledge Centres to provide information for farmers.
- 4) Use of new technology like Drones to speedily assess the losses for speedy compensation.
- 5) Long term strategy of agro-ecology and organic farming through Paramparagat Krishi Vikas Yojana.

The NADMP along with global efforts to mitigate climate change stands as a promising idea to ensure resilience in agriculture to climate change making it Climate Smart Agriculture.

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)

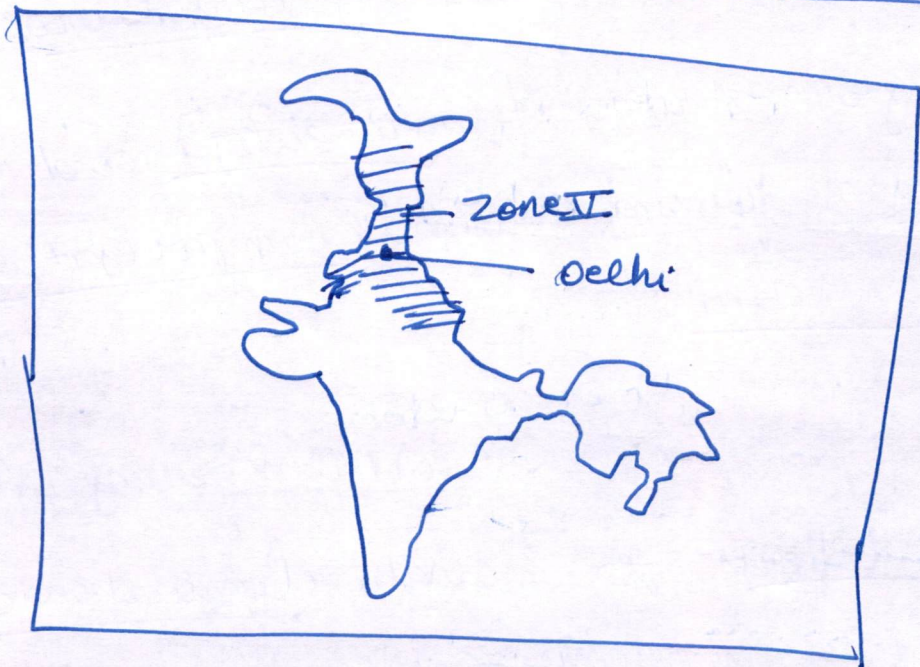
Some regions in India, including Delhi, are highly vulnerable to the impact of earthquakes originating in the Himalayas. Discuss. What institutional measures have been taken to mitigate earthquake losses in India? Do you think there are significant gaps that still exist? (Answer in 250 words)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Earthquakes refer to sudden release of energy, occurring along a hypocentre (focus), travelling in form of P waves & S waves through epicentre due to tectonic movement of plates.

Some regions highly vulnerable to earthquake.

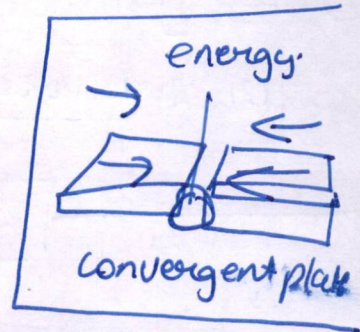


Delhi is vulnerable because it is situated in Zone II of disaster vulnerability map.

1) Its closeness & proximity to Himalayas make it vulnerable to Himalayan Earthquakes

Eg. Earthquake of Afghanistan's tremors reached Delhi

2) Himalaya being a convergent convergent plate boundary & leads to frequent earthquakes.



3) Presence of large urban populations & multiple structures make it more vulnerable.

4) The presence of plains ~~erect~~ & high seismicity of earthquake in Himalayas enable swift travel of P-waves, S-waves & surface waves till Delhi due to high energy.

Institutional measures taken

1) NDMA brought in to deal with disaster response.

2) Building codes for disaster resilient infra structure by DPA.

3) Earthquake Disaster Risk Mapping to map out highly vulnerable areas for targeted.

operations:

- 1) establishment of shelter houses to rehabilitate people temporarily
- 2) safety norms & instructions in all institutions for evacuation purpose.

Significant gaps exist

Yes, significant gaps exist

- 1) Flouting of rules of Building codes as illegal construction happens.
- 2) Lack of safety norms in 80% of the institutions.
- 3) Lack of awareness among people regarding standard operation procedures when earthquake strikes
- 4) High costs ~~due~~ of disaster resilient infra & low funds hamper adoption of new technology

Following Sendai Framework on Disaster Management, setting up of fund as per 15th FC can plug the gap in Disaster Management.

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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Nuclear fusion refers to use of energy harnessed by joining two nucleus together releasing vast amount of energy. Recently scientists working at ITER project and Tokamak reactor announced energy gain in nuclear fusion.

Nuclear fusion - a major scientific breakthrough.

→ advancement over nuclear fusion technology
→ shows man's ability to control fundamental forces of universe.

→ can lead to energy creation. leading to energy security.

Advantages of nuclear fusion

1) More power generated by fusion over

fusion, increasing the availability of energy

-) No nuclear pollution as Heavy water is used instead of Uranium or Plutonium
-) No concern of nuclear waste disposal as Heavy water is recycled & used again
-) Increasing acceptance among people due to its non hazardous nature, preventing protest due to nuclear myths. Eg Protest against Kudankulam plant.

Limitations to use it at commercial scale.

-) Lack of battery storage systems as ~~the~~ current systems cannot store vast amount of energy.
-) Fear of reactor failure causing destruction due to high energy.

1) Nascent technology, not sure if controlled reaction can be achieved for commercial purpose.

2) High cost of production makes energy unavailable to people.

3) Fear of nuclear proliferation through hydrogen bombs due to commercial use.

Eg → Technology can be harnessed by terror groups, private military companies.

4) Specialized reactors required which are currently short in supply.

Going ahead with fusion

- collaboration on global scale through ITER to ensure joint & responsible use
- developing of safeguards & standards to prevent misuse before commercialization
- India developing 3rd stage of nuclear energy

Nuclear fusion & fusion can be complemented to ensure energy security in long run when demands are further set to peak.

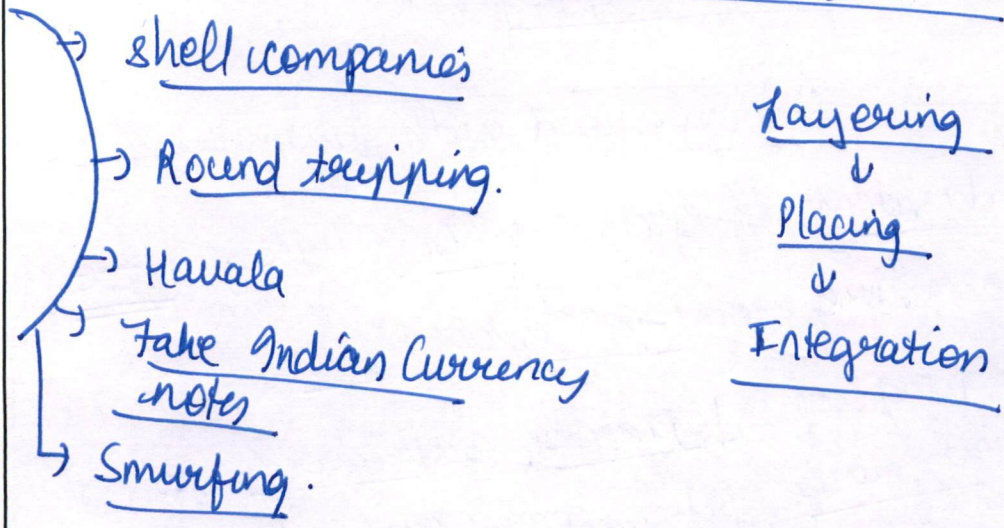
19. हालिया संशोधन को ध्यान में रखते हुए, भारत में धन शोधन (मनी लॉन्ड्रिंग) के खतरे से निपटने में धन शोधन रोकथाम अधिनियम, 2002 की प्रभावकारिता का परीक्षण कीजिए। (उत्तर 250 शब्दों में दीजिए)
 Keeping in view the recent amendment, examine the efficacy of the Prevention of Money Laundering Act, 2002, in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

15

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Money laundering refers to the act of whitewashing the dirty money - money earned through illegitimate means, by introducing it into formal economy through different channels. Prevention of Money Laundering Act 2002 (PMLA 2002) seeks to prevent money laundering.

Money Laundering - How



Efficacy of PMLA 2002

- 1) greater power to inspectors & officers

of Enforcement Directorate ensure greater
scope of investigation

- 1) power to attach properties of offenders
can reduce the sources of laundering.
- 2) Special Courts for Money laundering
crimes can expedite & dispose off cases
wrt Money laundering.
- 3) use of technology like FIU, CCTN, NETRA
can help in monitoring suspicious flow of
funds helping in preempting money laundering.

Issues with PMLA 2002

- 1) crypto asset are out of the ambit of
PMLA, thus giving a leeway
- 2) can be used to stifle & dissent & opposition
due to enhanced powers.
- 3) Does not involve cooperation with other
countries, thus making it ineffective
against offenders beyond Indian jurisdiction
Eg - Pakistan account for largest FCOM.

1) Challenges in tackling cartels and organised groups of Money laundering

2) Blockchain technology prevents access to financial information through CCTNS, NETRA due to decentralised nature.

Solving Laundering Menace.

- Use of ESZ Finance track pursuing countries for crypto regulation
- collaboration with FATF for international collaboration against offenders.
- Development of new technology as per National strategy of Blockchain for better regulation
- ensuring development & employment to reduce youth attraction to cartels.
- DTAA, Mutual legal assistance Treaty for Information sharing agreement (Swiss Bank)

Money laundering being solved ensures reduced leakage from GDP & greater development of Indian economy.

20.

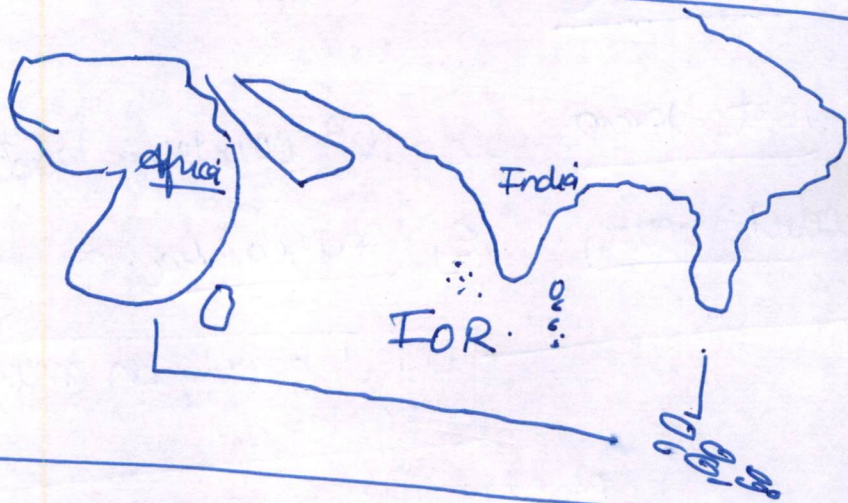
हिंद महासागर क्षेत्र (IOR) में मौजूद उन सुरक्षा खतरों पर चर्चा कीजिए, जिनका भारत के समुद्री सीमा संबंधी हितों पर सीधा असर पड़ता है। इन खतरों से निपटने के लिए एक मजबूत रणनीति सुझाइए। (उत्तर 250 शब्दों में दीजिए)

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)

15

Indian Ocean region is a vast geographical expanse, extending from East coast of Africa to the Indonesian. Given the multi dimensional nature of region, there are multi dimensional threats.

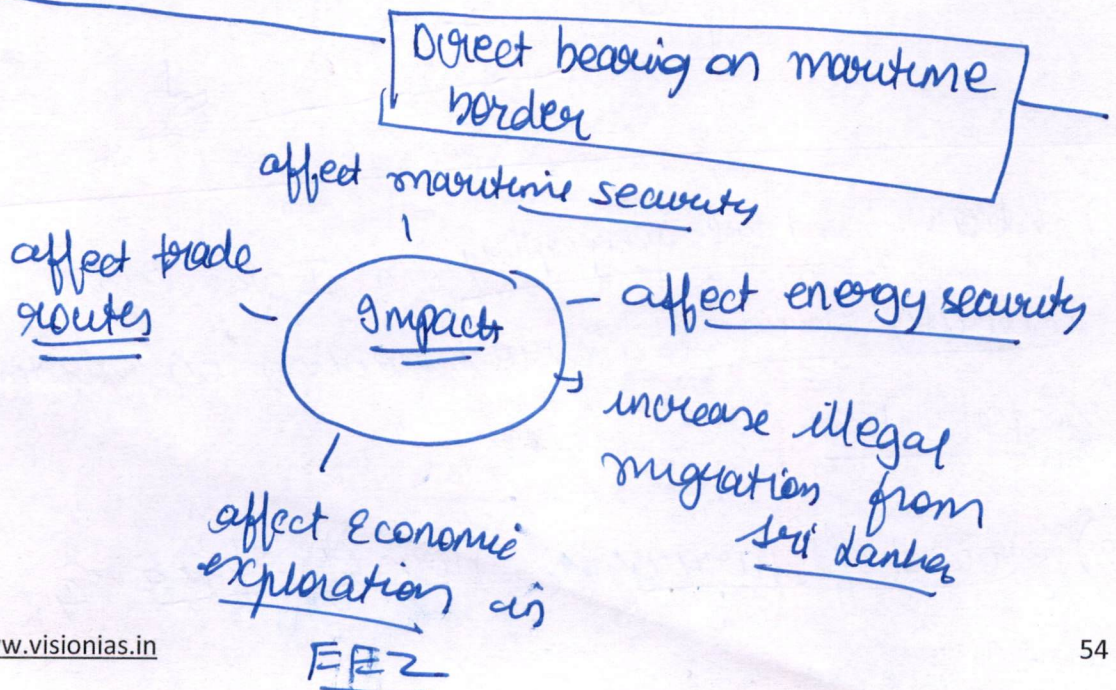
IOR - security threats



- 1) India's central geography in IOR makes security threats a direct bearing on maritime border interest.
- 2) threat of piracy in Horn of Africa & Indonesian.

Somalia region affecting trade

- 1) Threat on choke points - Malacca Strait, Hormuz Strait, Bab-el Mandeb which can be blocked affecting trade and energy
- 2) Threat of climate change as many of IOR islands like Maldives are sinking.
- 3) Chinese expansionism affecting sovereignty of other countries. Eg - Chinese submarine in Andaman sea.
- 4) Debt traps in IOR countries leading to civil wars. Eg Sri Lanka.



Robust strategies

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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- 1) Maintenance cooperation through information sharing. Eg EMASOM - IMAC infusion centre
- 2) Installing surveillance along coastal areas by strengthening coast guard.
- 3) Increasing marine capital expenditure to counter China - Shaktiwar Committee
- 4) Use of multilateral diplomacy like QUAD, India-AU Summit to ensure freedom of navigation
- 5) HADR & SAAR mission for humanitarian aid & relief from climate change security issues.

IOR merged with Pacific & increasing collaboration with Global South can make India a net security provider in IOR, ensuring its dominance & maritime interests are upheld.

SPACE FOR ROUGH WORK

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