



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. : 6088099

अभ्यर्थी का नाम/Name of Student : Suvan Sharma

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27/08/2023

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

केंद्र
Centre MBS, Jammu

[Signature]
निरीक्षक के हस्ताक्षर
Invigilator's Signature

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

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

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

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



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

India faces a 'development paradox' wherein being a self sufficient in food production, 14% of population still suffers from malnutrition.

Food Security refers to a condition where food is available, affordable and accessible to every section of society and has the following dimensions →

① Calorie Security: Calorie input should be fulfilled vis-a-vis demand
Teg → 2000 kcal/day

② Nutrition Security: balanced diet should be ensured
Teg → to avoid "hidden hunger" (i.e. lack of vitamins & minerals)

③ Quality of food

but quality of food should also be ensured.

↳ low quality meals served in Mid Day Meal.

④ consistency in availability, affordability & accessibility → & not just sporadic availability. ↳ food distribution during election campaign.

India's Status

→ 14% malnutrition.
↓
69% of less than 5 year old deaths due to lack of nutrition.
→ 37% stunting

Today, focus has shifted from Calorie Security to Nutrition Security & maintaining quality & consistency.

Renewed attention on "Shree Anna" (millets) which provide better nutrition & One Nation One Ration Card are steps in right direction to ensure SDG-2 (No Hunger) is achieved.

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

Blockchain refers to decentralised ledgers which are an association of blocks, hosted on an independent server. It ensures anonymity, and trustability.

Chat GPT is an Artificial Intelligence tool wherein users interact via text in human language to ask for personalised results.

Block Chain, Chat GPT & Agriculture

I/Chat GPT : ① Can be used to ask for agriculture related queries

eg → "What is the best time to sow 'Ragi' in Indian state of Madhya Pradesh using inputs 2kg Urea ---- etc"

② Can be prompted to tell the best practices used according to

climatic region type.

③ To ask for government schemes.

Tip "My crop has been destroyed due to hailstorm, which govt. scheme can be used?"

④ Ask for sustainable practices.

Tip How to sustainably use 10 litres of water for sowing ~~Marigold flowers~~ wheat?

① Blockchain

① Using 'Smart Contracts'

↳ for contract farming with companies like "Pepsi".
helps in avoiding manipulation of documents.

② For maintaining insurance records
↳ for PM Fasal Bima Yojna.

③ To register credit ratings of farmers

④ For transfer payments Tip PM KISAN.

We need to ensure that new technologies like ChatGPT & Blockchain are not used against Indian farmers Tip theft of data, cyber crimes etc. For this use of such

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)

De-dollarisation refers to decreasing importance and role of dollar in international transactions.

Tip → Agreement between Iran & China to deal in local currencies.

Factors

① Assertiveness of China.

1.1 New China Russia axis is seeking major role in geopolitics.

② Withdrawal of USA

2.1 With rising waves of protectionism since 2016

③ Failure of multilateral Organisations

3.1 Countries are losing trust in multilateral banks & organisations such as (IMF) & World Bank

3.2 They used to emphasise on importance of dollars

④ Global Poly crisis

4.1 \Rightarrow COVID-19 has highlighted the fragility of dollar based transactions

4.2 Countries are moving towards self reliance. \Rightarrow Atmanirbhar Bharat.

Dollar's future \rightarrow It is here to stay as USA still holds

dominance. However, with new regional groupings and engagements, dollars importance is seen decreasing.

India needs to ensure its relations with USA aren't hurt and at the same time maintain financial autonomy.

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

World Trade Organisation (WTO)

negotiations have often highlight the need for India to

stop policy support for poor which WTO considers to

be trade distorting

(Amber Box subsidies)

Why to discontinue?

↓ relations with countries such as USA

→ trade distortion
↓ against WTO principles of 'free trade'

However, there's still Merit

① 14% of population is

malnourished

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

② 12000 farmer suicides &
between 2016 - 2019 (NCRB)

③ Climate Change & leading
to crop losses. \rightarrow \uparrow tropical
cyclones
in Andhra

④ India still follows de-minimis limit of
support. (10%)

⑤ 55% of population is
still employed in
agriculture

⑥ Agriculture has already
suffered in 150 years of
British rule.

Thus, India needs to
take like minded countries
together to fight for favourable
outcomes in Agreement of Agriculture

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)

10

India has taken several initiatives like PM Kishi Sanchayee Yojna, Jal Shakti Mission, Integrated Watershed Management Programme, establishment of Central Water Commission & Central Ground Water Authority etc.

However, issues of Water Availability & water quality needs priority

① Water Availability

① NITI Ayog & report shows 20 states face water scarcity.

② Acc to Jal Shakti Ministry, we extract highest amount

of groundwater i.e. 253bcm per year

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

③ According to NASA data, India's groundwater levels are receding by 0.4m.

④ Extreme weather events, like droughts, have also reduced water availability

II Water Quality → ① Arsenic contamination in West Bengal

② Lack of potable water

③ 400,000 deaths due to diarrhoea can be avoided if water quality in India is improved [WHO]

Interventions Required

Water Availability	Water Quality
① Ground water extraction regulations	① Grey Water recycling (collaboration with Israel)
② A collection of discrete data	② Check illegal sand mining
③ Addressing inter state water disputes (eg. Krishna Kaveri dispute)	③ Decentralised water testing kits

The steps under Jal Jeevan Mission such as "Paani Samitis", distribution of field kits etc are steps in right direction

6.

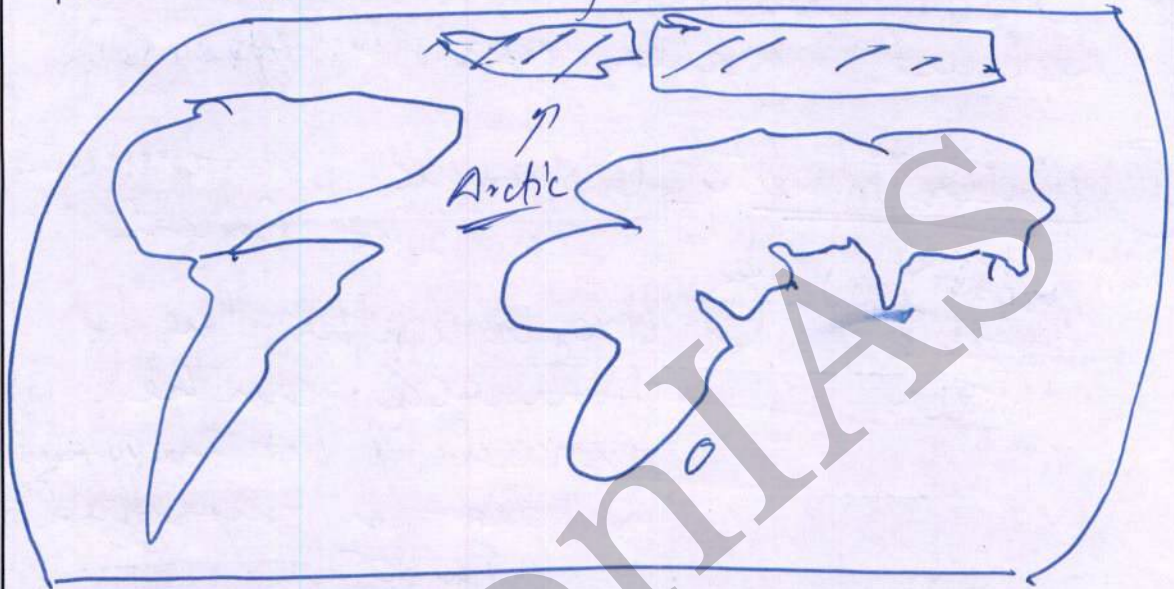
आर्कटिक में हिमनदों के पिघल कर संकुचित होने के लिए उत्तरदायी कारक क्या हैं? पारिस्थितिकी तंत्र पर आर्कटिक हिमनदों के पिघलने के संभावित प्रभाव का वर्णन कीजिए। (उत्तर 150 शब्दों में दीजिए)

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 हार्शिए में नहीं लिखना चाहिए
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Arctic ocean & glaciers are located in Northern polar latitudes



Glacial retreat refers to the phenomenon where in glaciers starts melting due to natural & anthropogenic factors and start receding.

Major drivers in Arctic glacier retreat

①

① Weakening of Northern

How Jet Streams

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

1-1 Northern Hemisphere Jet Streams & North Atlantic Jet streams have weakened as a result of rising temperature.

② Global Warming

2-1 caused by GHG emissions

2-2 operation of ~~oil~~ oil containers freight transport etc in Arctic Ocean.

Potential Impact on Ecosystem

- ① Melting of Permafrost → invasive species
- ② Sea level rise → disturbance in ecosystem
- ③ Intermixing of water → temperature variability leading to extinctions

Thus, global community has to come together and use international forum & instruments like 'Arctic Treaty' ¹⁷ to save Arctic Glaciers.

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 travelling to space for tourism purposes rather than scientific exploration and research activities.

Reality → recent travel by Jeff Bezos & others

Challenges Associated

① Risky Proposition

1-1 Uncharted areas of space can become dangerous

1-2 Needs to ~~be~~ be avoided to avoid mishapening like implosion of Titan submarine

② Re Fiscal Profdigary

2.1 incurs huge expenditure which can be used for socio economic goals

③ Inequality between nations

3.1 \triangleright only 4 countries have been able to land on moon out of 193 -

3.2 Space tourism can widen global inequalities as only few will be benefitted.

④ High costs compared to risk & returns

Measures to address \rightarrow ① Collaboration with all countries

② Common Space Fund wherein contributions from tourists shall help space research in left out countries

③ Technology development ensuring upskilling

④ Avoiding Space Trash.

Thus, space tourism can help India

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

CRISPR-Cas9 and CAR-T cell therapy are biotechnological innovations which enable us to modify Genome eg DNA sequences.

Cas-9 is an enzyme which is used to target DNA snippets -

CRISPR Cas9 has limitations such as →

① Can lead to mutations

② Difficult to target specific cells & DNA sequences.

③ chances of error are high

CAR-T cell therapy can help as

① chances of error are less

② can specifically target the T-cells

③ Avoids mutations

④ More efficient & potential in cancer treatments.

India's Biotechnology Mission

Should therefore aim at developing CAR-T cell therapy to reap the associated benefits

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

Violent extremist organisation aim to promote violence using new and emerging technologies in the recent years like internet, encrypted electronic messaging, decentralised ledgers (blockchain), quantum messaging, improvised explosives, etc. 3D printing etc

This requires concerted global efforts because:

1 Scope of technology -

1.1 it is inter border - inter country applicable

1.2 \Rightarrow internet servers are all over the globe.

2 Non uniform regulations

2.1 \Rightarrow blockchains are not

regulated in many countries

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

[3] Intervention of Multi National Corporations

3.1 These operate the internet and related infrastructure

3.2 Top cloud infrastructure services

[4] Multi national operation of organised crimes

4.1 Top Hawala money and terror financing being operated using new & emerging technology like Cryptocurrency.

[5] Look out for emerging technology

5.1 Top using 3D & 4D printing for making bomb parts

Thus, an international deliberation on identifying, monitoring & regulating critical & new technology is required by involving multilateral organisations like INTERPOL, SEYES, SCO etc. ^{bits} We need to

ensure that technology development isn't stifled

10.

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

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

10

[ITBP]

Indo Tibetan Border Police is one of the Central Armed Police Forces. It comes under the control of Ministry of Home Affairs and is tasked with guarding India - China & India - Nepal borders, among other duties.

Role of ITBP in India-China border region

① After Galwan & Yangste incidents India & China has increased



Fig: India-China Border

Infrastructural development

1.1 India → ^{Asulat Beg Oldie Road.} Vibrant Villages Programme

1.2 China → settlements, hamlets, roads and Bridges

② ITBP role can be explained in following ways:

2.1 Security of the region - internal

2.2 Improving harmony

↳ 'People's Connect programme'

2.3 Augmentation of Infrastructure

↳ giving workforce

↳ Engineering Corps etc.

2.4 In India - China dialogue.

↳ Commandant level interactions for reducing border ingresses.

ITBP thus have a multidimens^{ional} role. Limitations like seniority issues, clash with IPS lobby, ~~more~~ lack of autonomy etc need to be addressed

so as to keep ITBP motivated.

11.

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

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

15

Land Productivity refers to the yield of land per unit area of the land. \rightarrow 10 tonnes/acre

Irrigation Water Productivity refers to the productivity of irrigation water used in sowing and allied activities.

Need to shift from land productivity to irrigation water productivity

Ⓘ Arguments for shifting \rightarrow

① To check water usage.

1.1 According to Jal Shakti Ministry, India extracts most groundwater at 253 bcm.

② To check water wastage.

2-1 Tip → in paddy transplantation

③ To have an idea of resource utilisation → water shortage is being faced by almost all states (NITI Aayog)

④ Land productivity \uparrow can give a distorted image of efficiency & sustainability

4-1 Tip → productivity can be increased by using more fertiliser

⑤ Conservation of Resources.

5-1 Groundwater levels are receding

⑥ To check efficiency of irrigation techniques

6-1 Tip → tank irrigation, open channel irrigation

II However, there are some Challenges

① Lack of discrete data

1-1 makes it difficult to analyse pros & cons for a

particular region.

② Lack of Calculation methodology.

③ Use of varied sources.

3.1 Tap ground water (power subsidy)
plus rainfed agriculture
(66% of agriculture is rainfed)

④ Lack of reporting by farmers.

⑤ Land productivity is easy to measure. $\rightarrow \frac{\text{Production}}{\text{Area}} = \text{Productivity}$

Way Forward \rightarrow Thus, efforts are required to ensure that irrigation water is not wasted. Precision farming which uses real time data & technologies like analysis etc. are required to make best use of land and water. Further deliberations on shifting from land productivity to irrigation water productivity should involve all stakeholders.

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

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

Green Hydrogen refers to hydrogen gas (H_2) produced out of 'green process' like electrolysis. It is called 'green' because there are no emissions in the production process.

Role of Green Hydrogen in Unlocking Energy Security of India

- ① Helps in achieving target of achieving 50% non energy from Non Fossil Fuel Based Energy sources
- ② It will contribute in adding to 500 GW energy from renewable sources

③ Will help in achieving
'Power for All' (24x7)

④ Reduce Imports.

⑤ help in powering e-vehicles.

National Green Hydrogen Mission (NGHM)

① It aims to make India
self sufficient by 2047

② It will provide around 6 lakh
jobs

③ helps in reducing around
150 MMT of GHG emissions

④ aids in reducing import bill.

NGHM & energy security goals

necessary impetus to kickstart renewable energy capacity addition.

↳ will help in achieving INDC targets as mentioned above.

However, Challenges persist with Green Hydrogen

Grey hydrogen is cheaper than Green at least till 2030

lack of storage systems

highly inflammable
↓
need scientific storage.

lack of funding
skilled workforce & technology upgrade.

These challenges can be addressed with Viability Gap Funding, venture funds, technology augmentation, upskilling of workforce and generating awareness regarding usage.

Green Hydrogen & NGHM can go a long way in realising SDG 7 (clean energy), SDG 1 (poverty) and SDG 11 (sustainable cities).

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 the floor wage below which no one should be paid who is employed in any capacity - casual labourer, daily wages etc.

Living Wage refers to a wage level that is necessary for having decent living conditions. It should account fulfilling basic needs (minimum wage) along with having a dignified life.

Benefits of adopting living wage

① ensures dignity of individual

② accounts for varied experience.

2-1 \Rightarrow urban poor require ^{Caro and Rs 1400} house rent allowance, as well
& as recommended by various Commissions studying urban poor.

③ fulfills demand for a decent Standard of living.

\Rightarrow schooling for children.

④ Minimum Wage is exploitative in nature
as Contractors misuse it.

\Rightarrow employing fewer number
of people to evade
giving 2 minimum wage.

Constraints

- ① Lack of calculation methodology
- ② Lack of discrete data
- ③ Subjective interpretation of living wage.
- ④ Will require revamping funding mechanisms
- ⑤ Uneven burden on Employers & Contractors

Thus, a balance is required which can be achieved after multi stakeholder deliberations

14.

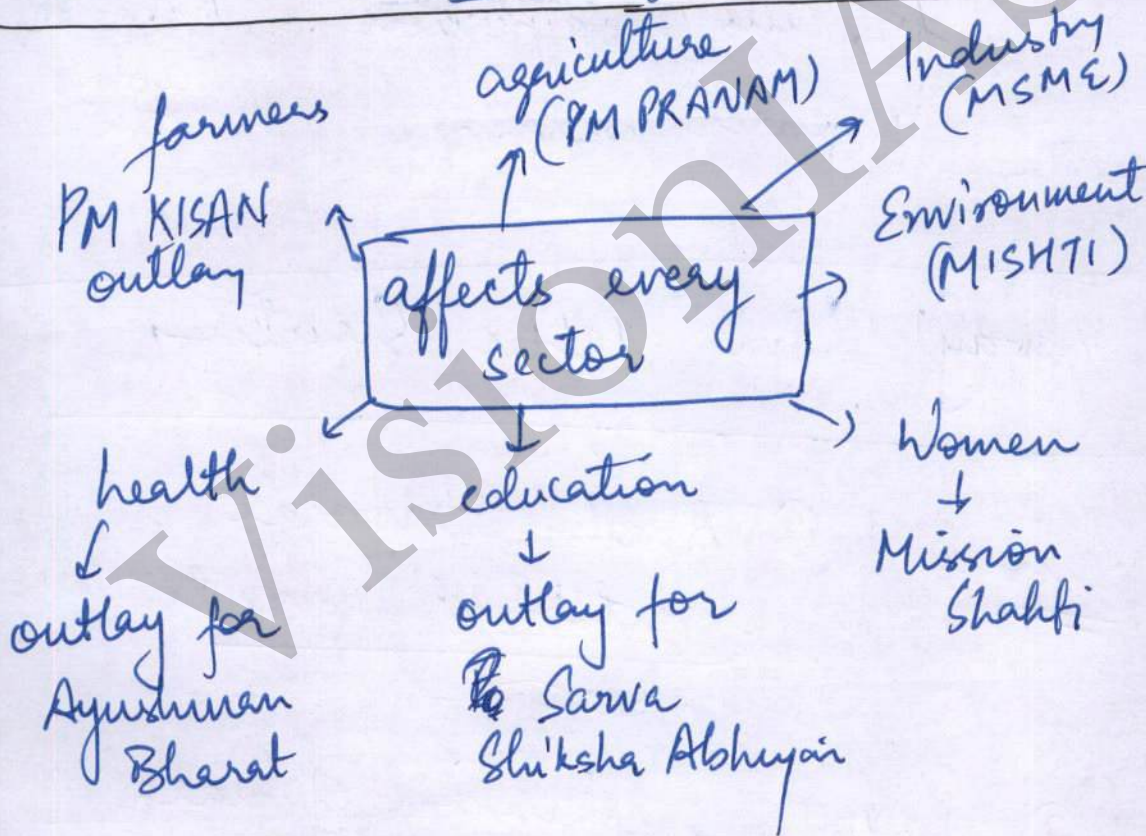
केंद्रीय बजट भारतीय अर्थव्यवस्था के लगभग हर क्षेत्रक को प्रभावित करता है, फिर भी न तो बजटीय प्रक्रियाएं पर्याप्त सार्वजनिक जांच के दायरे में आती हैं और न ही बजट नीतियां। क्या आप इस कथन से सहमत हैं? अपने उत्तर का औचित्य सिद्ध कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

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

15

Article 112 of Indian Constitution provides for 'Annual Financial Statement' which is usually called the 'Budget'.



Budget processes are the procedure and processes involved in preparation and passing of

the budget. It involves

Collection
of data

inter
ministry &
department
coordination

analysing
previous
outlays

legislative
processes

Budget policies refer to policies
enshrined in the Budget.

↳ Cuts/modification in Personal
Income Tax.
↳ gender budgeting.

Away from Public Scrutiny

Reasons : ① Apathy towards
national events in
public

② Wilful suppression of data
which Jean Dreze calls
'Statistical Vacuum'

③ Focus on prominent outcomes such as decrease in tax rates

④ Lack of awareness vis-a-vis economics & financial jargon.

→ 'Fiscal deficit' & 'effective difference.' fiscal deficit

⑤ People are more concerned with matters incidental to day to day lives

→ announcement of Transfer payments

However, Budget Policies are still under some kind of public scrutiny because of News Coverage, social media etc. Budget processes are usual out of public gaze due to reasons above.

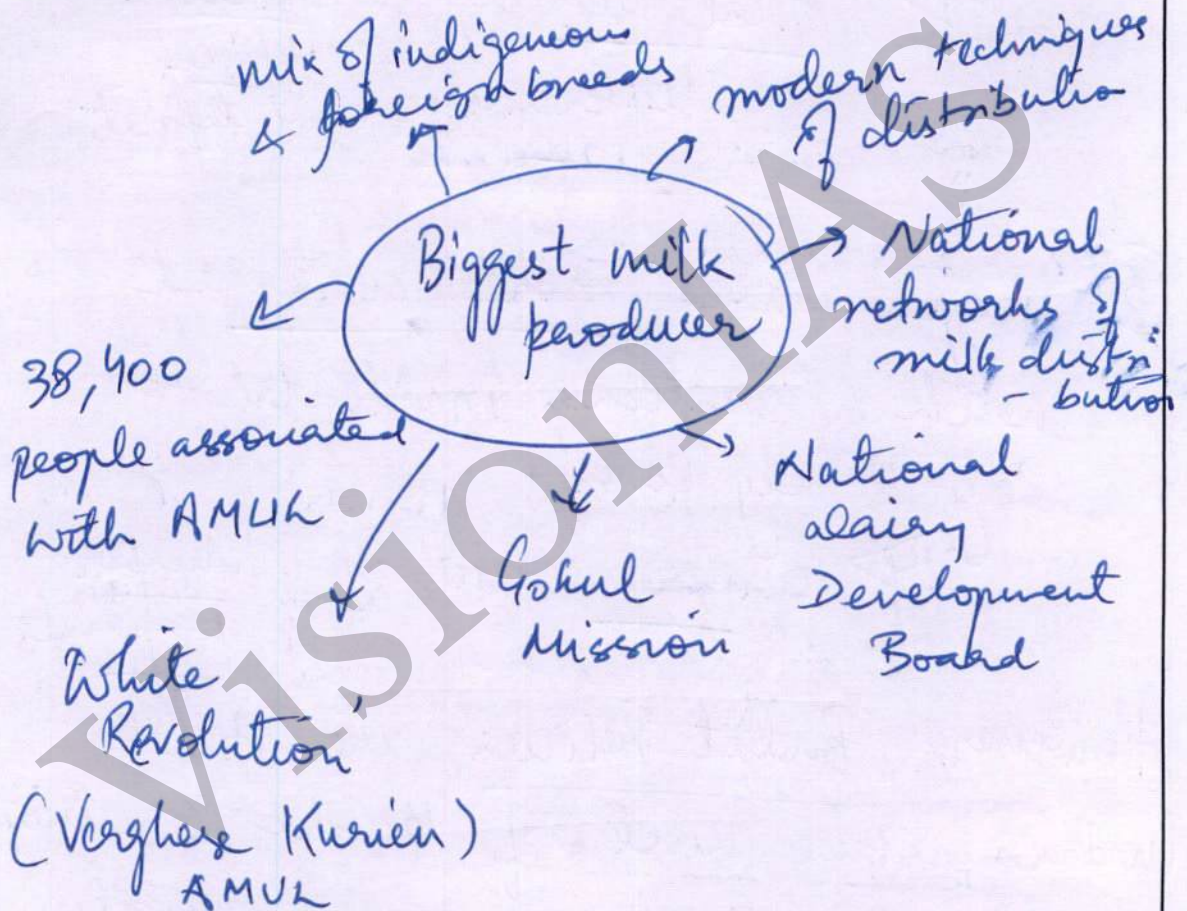
A holistic understanding of Budget processes & policies is necessary for realising 'Sabka Saath Sabka Vishwas & Sabka PRAYAS'

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

15

Dairy sector contributes around 40% to agricultural GVA.



However, productivity of dairy animals remains a concern.

① Less Productivity

1.1 1500 litres/day v/s

3600 litres/day (cows) worldwide

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

② Feed & Fodder issues

- 2.1 improper handling
- 2.2 lack of nutrition
- 2.3 ~~green fodder~~ & 2.3 Unscientific management

③ Animal diseases

- 3.1 Foot & mouth diseases
- 3.2 lack of Veterinarians.

④ Unscientific Management of livestock

- 4.1 using old traditional methods of nutrition, rearing practices etc.

⑤ Information lack.

- 5.1 Breeds bought don't suit the climatic conditions
- 5.2 Foot breeds given under Animal Husbandry schemes are not tailor-made for different regions of state
Foot J&K has varied areas

- mountains, plains & dry desert areas.

उम्मीदवारों को इस हार्डिप में नही लिखना चाहिए
Candidate must not write on this margin

Measures to improve productivity →

- ① Use of 'green fodder'
- ② Mixed Farming: Try using crop waste as fodder (has nutrients)
- ③ Tackling animal disease by increasing number of veterinarians use of mobile vans etc.
- ④ Agricultural Extension Services to improve knowledge related to scientific management.
- ⑤ Tailormade solutions related to particular climatic conditions in government schemes.

Thus, productivity of ^{dairy} animals need to be improved as it will not only increase farmer incomes but also improve food & nutrition security of India

16.

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

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

15

Climate Change refers to long term change observed in climatic conditions due to natural and anthropological factors.

Climate Change is responsible for crop failures as:

① low temperature tolerance of crops.

1-1 Temp Cotton

1-2 Climate Change → Global Warming → Increase in temperature → Crop Failure

② Invasive Species

2-1 C.C → Warming → melting of glaciers → New invasive species
→ ↓ permafrost

③ Lack of water resources

3.1 66% of Indian agriculture is rainfed.

3.2 IMD: variability of rainfall patterns due to climate change
→ increased rainfall in Central India while less rainfall in Gangetic plains

Agriculture is also partly responsible for extreme weather events

① Paddy cultivation leads to methane emissions causing global warming.

② Use of livestock → ruminant → emissions from cattles.

③ Over extraction of groundwater
↳ disturbs water cycle.

This can be tackled through Climate Resilient Agriculture,

Precision Farming & Climate Smart Agricultural Practices

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

National Agriculture Disaster Management Plan →

- ① To tackle disasters associated with agriculture ~~rep~~ Crop Failures
- ② delineates pre-~~post~~ during & post disaster activities
- ③ To strengthen resilience of farming community →

3.1 climate resilient agriculture ~~rep~~ aquaponics.

3.2 sowing climatic crops.

3.3 Focus on dryland crops like Millets (Shree Anna)

3.4 Disaster response strategy involves trika of government, farmers & civil society organization.

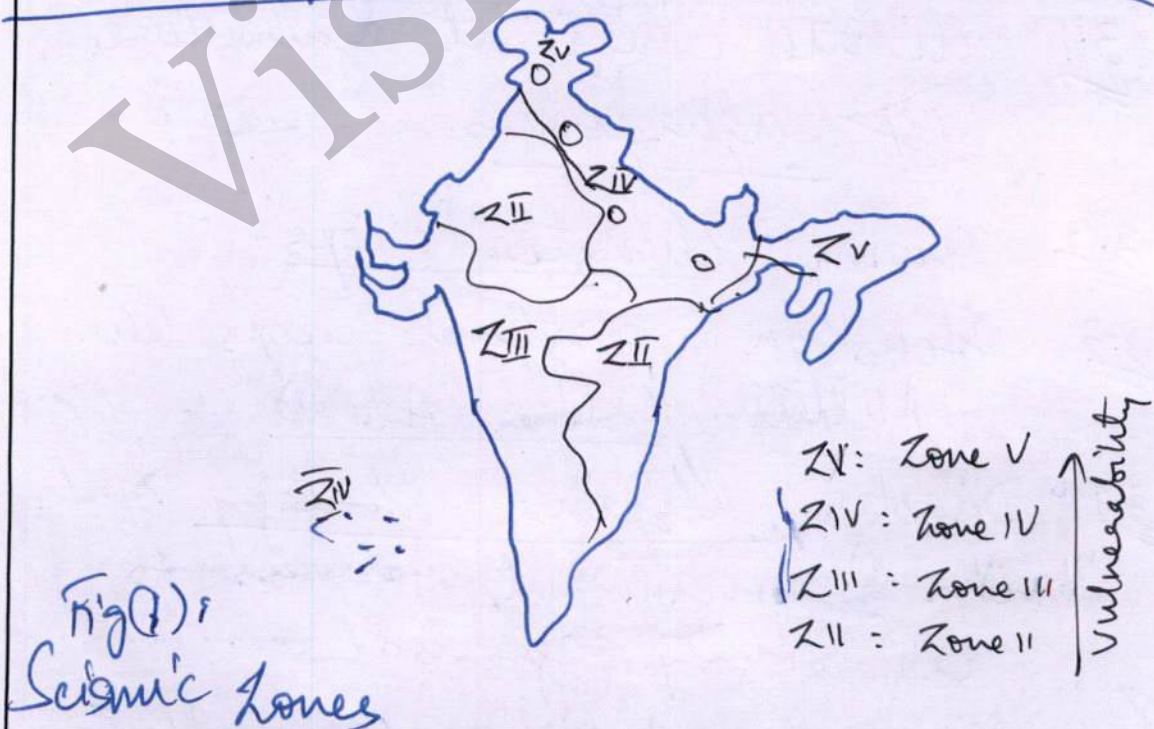
Thus, interlinkage between agriculture & climate change needs to be studied for 'Resilient India'

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

Earthquakes are the natural jolts suffered on the surface of earth caused by movement of rocks/plates beneath the earth's surface (geomorphological processes)

Regions Vulnerable to impact of Earthquakes (Fig 1)



Different causes for vulnerability

- ① Plate movements : Himalayan belt
- ② Reservoir / hydrological seismicity :
 Ex → Koyana dam
- ③ Indirect effect of plate movements :
 Deccan plateau suffers earthquakes due to ongoing collision of Indian plate with Eurasia

Impact vulnerability in regions of Himalayan

↓
Unplanned urbanisation

↓
Ex → Delhi

↓
Not following National Building Code

Ex → flats in HP
Manali

↓
Unplanned development with in high seismicity regions

Institutional Measures taken to Mitigate Earthquake losses →

- ① National Disaster Response Fund

- उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin
- ② State disaster Response Fund
 - ③ Change from Activity Based reactive setup to institutionalised loss reduction measures.

- ④ Compensation amounts
- ⑤ Risk reduction & ~~loss~~ disaster Resilience through National Disaster Management Act, 2005 & NDM Plan

Significant Gaps present

- ① focus on post disaster recovery capacity than pre disaster building
- ② Integration of Disaster Plans with developmental plans.

Measures required → To have an integrated earthquake Mitigation Strategy

Thus, earthquakes are unavoidable but the loss is indeed avoidable.

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) 15

We are focussing on nuclear energy to decarbonise our energy production process.

Nuclear energy refers to generation of energy through interaction (fission or fusion) between sub atomic nuclei e.g. Uranium 235.

Net Energy gain was a major scientific breakthrough as Nuclear Fusion Reaction requires Excess energy from outside. A net gain means we were able to extract energy

surplus from the fusion process.
i.e. energy generated was more than input of energy.

Advantages of Nuclear Fusion Based power generation

- ① Fusion is safe than fission
as chain reaction can be controlled.
- ② Minimal radioactive waste generation as compared to fission reactions.
- ③ Energy efficiency is better
- ④ Easy to dispose of waste.

Limitations for generation at

Commercial scale :

- ① Lack of technical skills to control energy generation at commercial scales.
- ② Issues with interoperability & transmission of energy.
- ③ Inequality of technology development.
Tf → So far China's Tokamak is operational.
- ④ Can lead to Nuclear disasters if not managed properly.

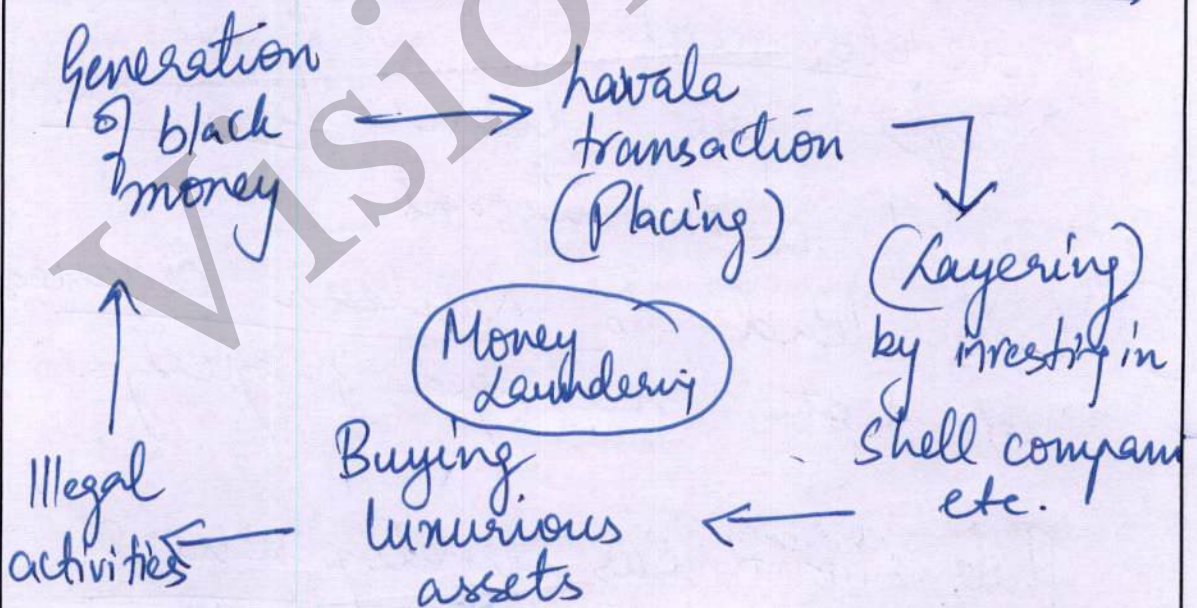
Thus, continuous development & research and in nuclear fusion is required. India's Nuclear Energy programme & new collaborations (y Japan) are steps in ⁴⁹ right direction.

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

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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15

Money laundering refers to using money accumulated through illegal means by following processes of transmission, layering etc and using it for refarious ends.



Recent amendments has given
more teeth to Enforcement

Directorate (ED) ^{more} powers to
investigate offences

Efficiency

① PMKA authorises ED
to investigate offences

② No requirement of
filing FIR.

③ ED can take suo motu
enquiry.

However issues persist
like →

① Misuse of ED

for political ends.

Ex ADR: 90% of raids by ED were on opposition party

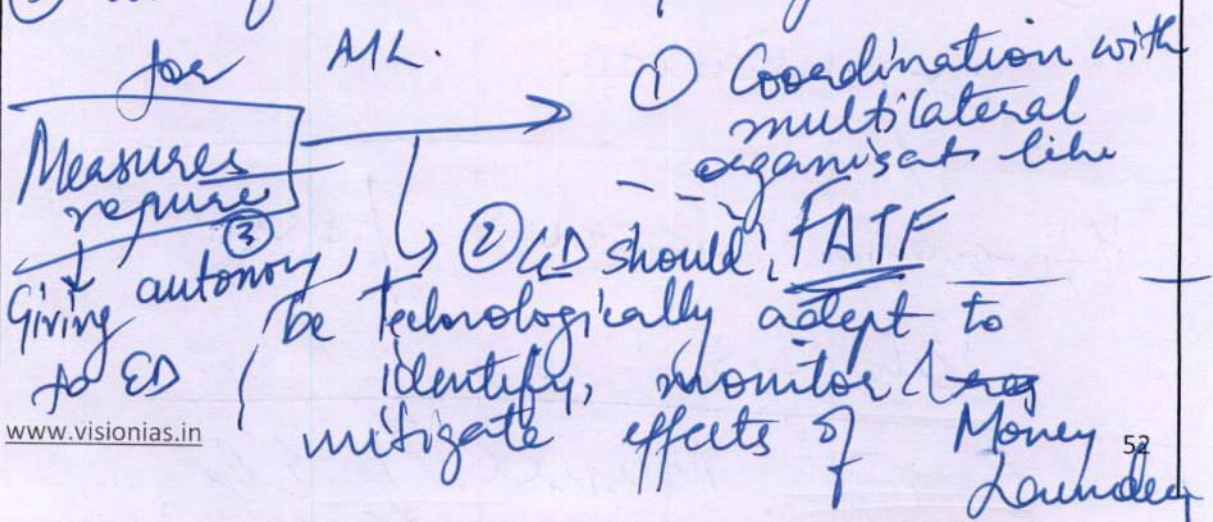
② Criminals are using Newer Technology to launder money.
Ex cryptocurrency & Blockchains.

③ Lack of ^{voluntary} reporting leading to exclusion & inclusion error

④ Post facto Approach

Ex Reactive approach by attaching properties rather preventing financial frauds.

⑤ Use of Civil Society Organisation for AML.

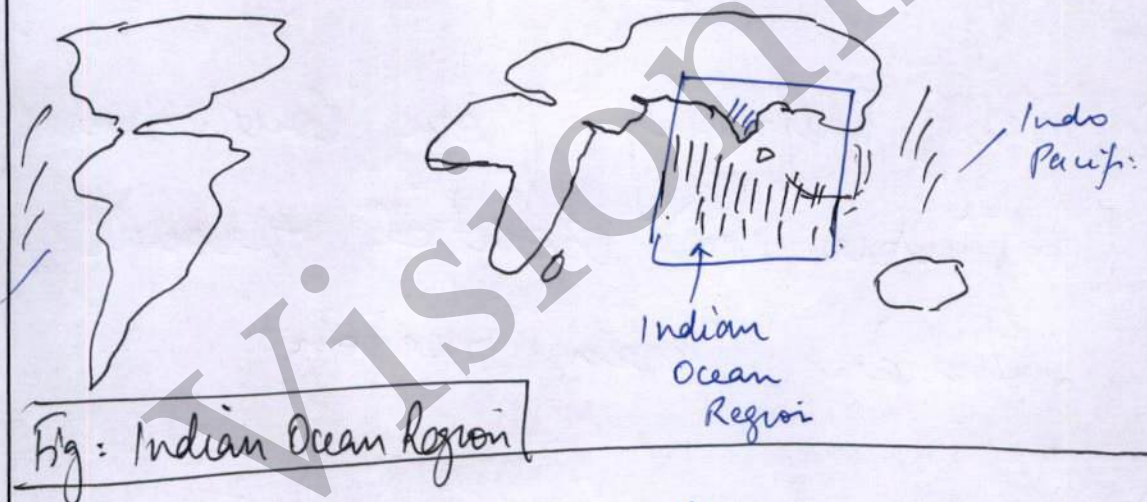


20.

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

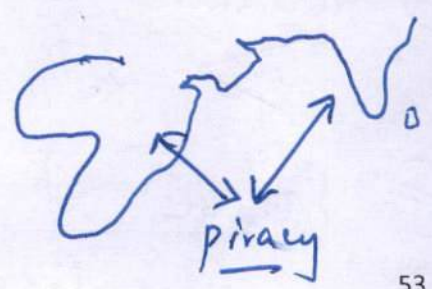
India has a 7500 km Coastline which has a direct ~~bearing~~ & indirect bearing on security threats present in Indian Ocean Region.



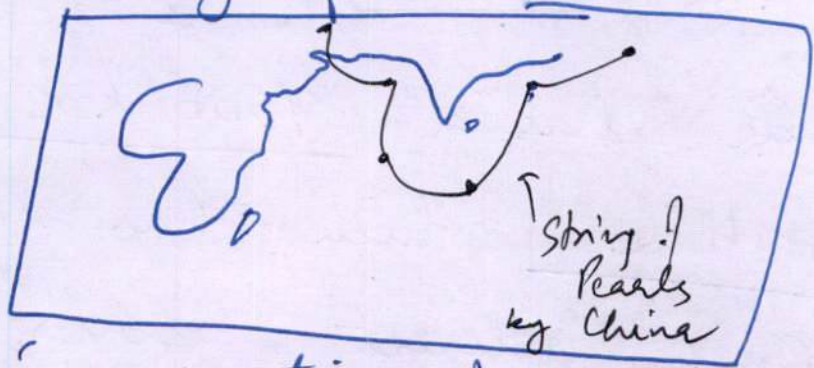
Security Threats Present in Indian Ocean Region

① Maritime Piracy.

1. top regions of Somalia



② China's containment strategy
using String of Pearls.



③ China's assertion in Indian Ocean by constructing Naval ports.
sep in Sri Lanka

④ drug Trafficking from South America (Columbia etc) routed through Indian Ocean region

⑤ 'Nuclear aggravation' after AUKUS.

⑥ Pakistan using maritime routes
sep 26/11 attacks

⑦ Presence of important Coastal Centres like Mumbai

• make dealing with security threats of Indian Ocean region more important →

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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Robust Strategy required should include

- ① International Cooperation between Countries.
1.1 Littoral Countries of IOK should be involved in military exercises Thru IORA.
 - ② Technological Coordination
2.1 Thru IFC-IOK in Gurgaon.
 - ③ Strengthening Indian Coast Guard.
for supporting Indian Navy.
 - ④ Bringing states such as Kerala & Tamil Nadu for coordination on Naval Police Stations
 - ⑤ Counter terrorism & exercises to ward off against threats like 26/11 & Bombay Blasts (1993)
 - ⑥ Task Units for drug & human trafficking for maritime routes
- Thus, Indian Ocean Regions need to be secured for a 'SECURE INDIA'

SPACE FOR ROUGH WORK

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VisionIAS