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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. : 1297803

अभ्यर्थी का नाम/Name of Student : ANUPRIYA

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

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

केंद्र
Centre

Bengaluru

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)					



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

निर्धारित समय: तीन घंटे
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

Food security emulates the condition where every citizen has access to food at any point of time without any financial hardships.

Dimensions of Food Security

1. Availability : Food grain stocks to cater to the demands
2. Accessibility : food stocks need to be accessible to all.
3. Affordability : within the financial limit
- people must be able to purchase food grains
4. Quality : food grains need to satisfy the nutritional demand.

India's status in terms of ensuring food security

Positives :

- 1) NFSA : Covers 67% of Total population ^{75% rural}
- 2) 5 kg ration to be available ^{50% Urban} free (PM Garib Kalyan Yojana merged with PDS)
- 3) Food fortification (Rice) to tackle hidden hunger
- 4) Fair price shops - easily accessibility

Concerns

- Global Hunger Index (2022) = 107 / 121
- Malnutrition ≈ 34% (NFHS-5)
- Retail Inflation hurting quality food security

Way forward

→ Tackle Quantity as well as Quality of food grain.

Food security is not an act of charity rather an act of Justice.

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

21st Century has made rapid strides in evolution of technologies such as Blockchain and ChatGPT.

Immense potential to transform Agriculture

☐ Efficient sector :-

1) Mechanisation of Agriculture will be enhanced.

⊗ AI based drones

2) evidence based policy making

⊗ BCT can handle and store large data

↳ AgriStack.

3) Prevent wastage of inputs

⊗ AI-sensors : water use efficiency can be increased.

4) Increase productivity :

(eg) Input less - output more. → Increase income ~~price~~ to farmers

5) Encourage scientification of Agriculture

II Sustainable sector :

1) Employed in R&D of Agriculture

(eg) development of High Yield seeds

2) Climate Resilient Agriculture can be promoted

(eg) Monitoring moisture in soil.

3) Reduce soil pollution and groundwater table pollution

(eg) Sustainable ratio of fertilizer can be maintained : sensors - soil testing

4) Fertility of soil can be maintained

5) Double Income of farmers, production

Concerns → Cost
→ Adaptation

Moving forward Government needs to support Agriculture startups promoting BCT and AI technologies.

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-dollarization refers to reduced use of dollars for settlement of international trade between countries.

Factors that have led to de-dollarization

- 1) Russia-Ukraine war - sanctions imposed on Russia
⊕ India-Russia trade settlement in ₹
- 2) Post-Covid era → increasing protectionist policy. encouraging trade in local currency
- 3) U.S Fed Bank Tapering
↳ increased volatility of local currency vis-a-vis dollar
- 4) National Policies :
⊕ New Trade (Foreign) Policy - encourages ₹ settlement.

5) Intent to diversify the forex reserves.

⊗ Russia could not use the dollars in its forex during sanctions → discourages other economies.

Dollar May lose its dominance

→ countries are preferring trade settlement in local currency. ⊗ India

→ Bilateral negotiations to use common local currency ⊗ India-SL negotiation towards rupee settlement

Yet will take time

- ① dollar still enjoys global acceptance
- ② finalising the value of currency between two local currency is marred with concerns of finding value.
- ③ Increasing use of Yuan as a common settlement.

Moving forward Indian Government should encourage trade settlement in ₹ to strengthen ₹ as a global currency.

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

India's food subsidy regime has been found violating WTO - AOA Agree Agreement (Amber Box limit).

Concern of developed countries
(pressure)

↓

MSP and PDS regime is over and above 10% limit in accordance to AOA

- 1) frequent concerns raised by developed countries in WTO ministerial meeting
- 2) Temporary peace clause without any permanent solution.

India has Merit to retain its policy

- 1) 10% limit set under AOA lacks scientific evidence.

- 2) The amber box limit doesnot accomodate the inflationary trends
- 3) India's food subridy is not to promote exports rather secure food security
- 4) India has largest poor population \approx 230M under BPL (UNDP report)
- 5) Development imperatives as well as Inclusive growth necessities.

Way forward

- Dialogue with like minded countries
- secure permanent solution in 13th WTO ministerial conference
- leverage G20 presidency in finding a middle path.

Food subridy regime needs to continue as it caters to the needs of underdeveloped, poor and marginalised sections of society.

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)

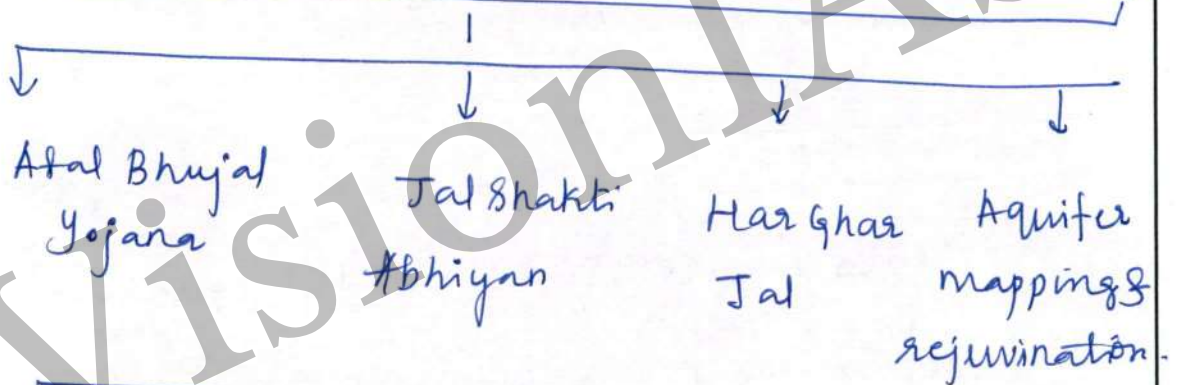
Several initiatives have been taken by the government towards addressing India's water needs, but the issues of water availability and water quality still warrant prioritised intervention. Discuss. (Answer in 150 words)

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

10

India supports 18% of the world's population yet has access to only 4% fresh water thereby leading to concern of water scarcity.

Several initiative taken by Government



Yet, the issue of

□ Water Availability :-

1) 600M is highly water stressed region [Niti Aayog]

2) ~ 21 cities will reach ground zero [with regards to ground water] by 2030.

3) 66% depletion in groundwater table between (2007-2017) [Niti Aayog]

4) India uses 25% of global groundwater (UNDP) → increasing pressure of water availability

5) South India: lacks perennial source of H_2O
⊗ Karnataka - TN fight over Cauvery

II Water Quality

1) Water Pollution: Fluoride content increasing
⊗ Rajasthan

2) Organic pollution in surface water

⊗ Kaneri BOD $\approx 20 \text{ mg/L}$
Godevari BOD $\approx 40 \text{ mg/L}$ }

Limit
3 mg/L

3) Only 40% of waste water generated is treated → these join river water

4) Increased disease & death due to H_2O contamination ⊗ Cholera, diarea.

Way forward :- Increased Intervention of Jal

Shakti, rationalise water tariffs, Aquifer mapping and rejuvenation, use treated waste water.

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)

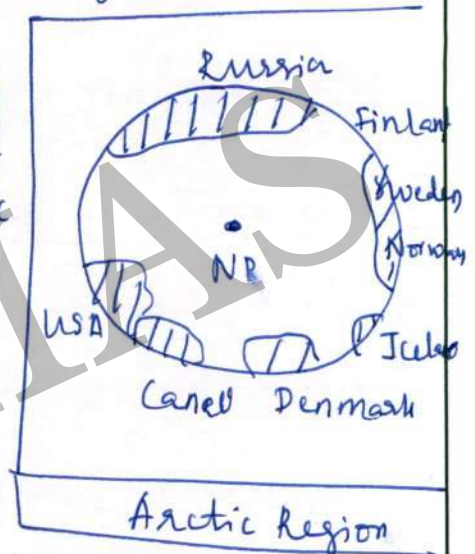
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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Recent IPCC report stated

that Arctic ice is at the lowest level well below long term average.

Drivers of Glacial Retreat
in glacial retreat in Arctic

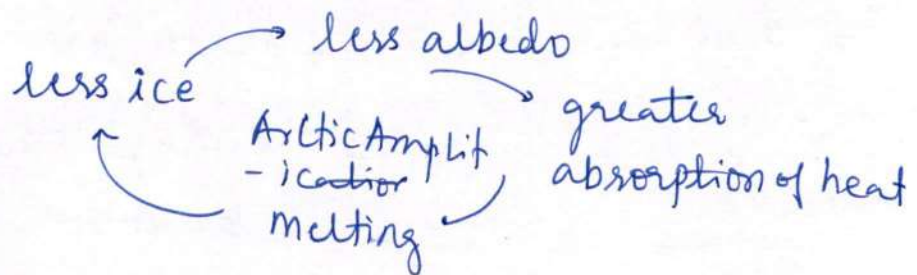


1) Global warming :-

- triggering melting of ice

2) Reducing albedo catalyses glacial retreat

3) Arctic Amplification



- triggering 2-3 times greater melting.

7) Influence of Climate Change

Potential Impact of retreat of Arctic glaciers

1) Melting of ice → increase in global mean sea level

⊗ WMO report : 0.2m rise in MSL (1908-2018)

2) Trigger weather extremities

⊗ flooding, cyclones.

3) Melting of ice → the dormant organisms in cryosphere will become active → vulnerability to new diseases

4) floral-faunal impact - Polar animals such as dolphins threatened.

5) Impact global climate systems

Way Forward : Treat Arctic as global common.

leverage Arctic Council to protect Arctic ecosystem.

Transparency in Arctic Missions

Global collective efforts are required to safeguard Arctic by limiting greenhouse gas emissions.

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 as the name encapsulates refers to developing tourism potential via space.

Becoming a reality:

- Most countries have developed capacity to reach space & travel safely
- Reusable space launch vehicle
- manned missions are in rise (eg Gaganyaan)

Challenges Associated with Space Tourism

- 1) Environmental: large scale of CO₂ emissions
- trigger O₃ depletion
- 2) Economic: large investment required
- 3) Pollution (space): increases space debris

- 4) Hinder space missions due to frequent movement of space vehicles
- 5) Security: security of travellers during the travel
- 6) Ethical: Is it judicious to spend crores on space tourism which will cater only to small percentage of rich class?

Measures that can be taken

- 1) Treating space as global common
- 2) Equitable use of space resource
- 3) Greater accountability and transparency in space missions
- 4) Sustainability to be the core of space tourism.
- 5) Efficient mechanism to address safety concerns, debris concern.

Space tourism must be sustainable, equitable and reliable.

8.

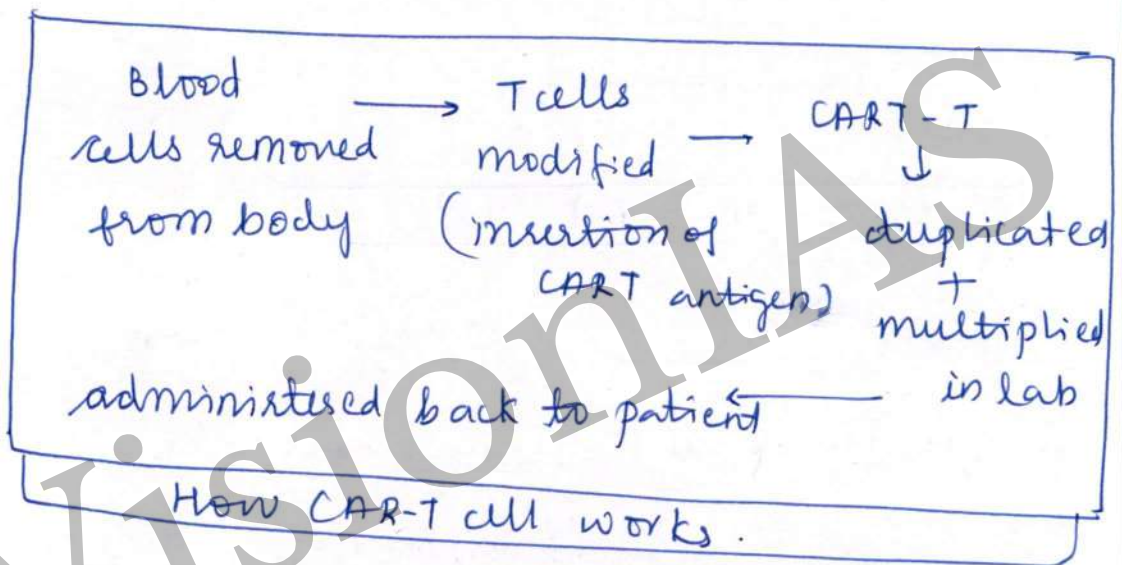
वैश्विक स्वास्थ्य विशेषज्ञ व्यापक रूप से मानते हैं कि CAR-T सेल थेरेपी का विकास कैंसर के उपचार में एक बड़ी सफलता हो सकता है। CAR-T सेल थेरेपी, CRISPR-Cas9 तकनीक में व्याप्त कमियों को कैसे दूर कर सकती है? (उत्तर 150 शब्दों में दीजिए)

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

10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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Recently Indian scientists have developed CART-cell therapy to cater to cancer treatment



can be a game changer :

- 1) As it has the capacity to treat the disease
- 2) Administration only once in lifetime
- 3) Body develops internal disease

resistance ability to treat Cancer

- 4) Prevent cancer deaths promoting healthy lifestyle.

CAR-T cell overcomes limitations of CRISPR-Cas9 technology in the following ways:-

CRISPR-Cas9

- 1) Changes in the cell structure within the body
- 2) Acceptance by body is less
- 3) Sophisticated technology required
- 4) ✖

CART T

- 1) Taken out and multiplied in lab
- Greater and better acceptance
- Simpler compared to CRISPR-Cas9
- One time administration

CAR-T Cell Therapy has the potential to transform cancer treatment hence greater R&D in this field is required.

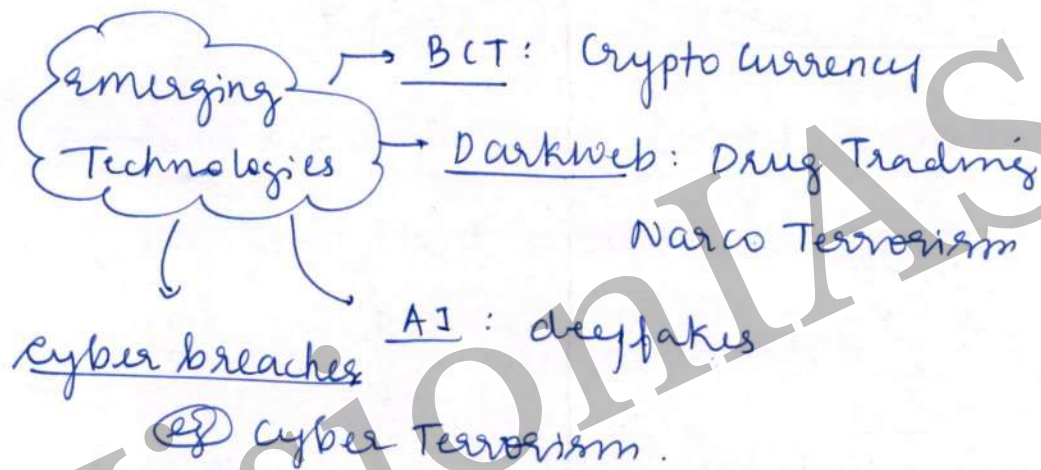
9.

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 हार्जिन में नहीं लिखना चाहिए
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The extremist groups are now turning to use emerging technologies to further catalyse their activities.



Challenges

- 1) deployment of technology →
 - Promotes anonymity
 - Promotes secretive missions
- 2) Allows cross border impact access
 - ⊗ recruiting terrorists through social media operating from distant place

3) Increased vulnerability of all global ~~any~~ countries

- ⊗ cryptocurrency with global presence ;
Cybersecurity breaches

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

Demand concerted global efforts

1) Easy to tackle the menace

- ⊗ FATF → Countering Terrorism

2) Collaborative efforts increases pressure on extremist group.

3) R & D towards tackling emerging technology

- ⊗ Recent India-US deal to tackle new nuances in technology

4) Efficient use of resource to curb extremism across globe

- ⊗ Interpol :

As Hon'ble Home Minister stated today there is shift from hawala to Crypto, dynamite to metaverse hence actions also need to transcend boundaries.

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)

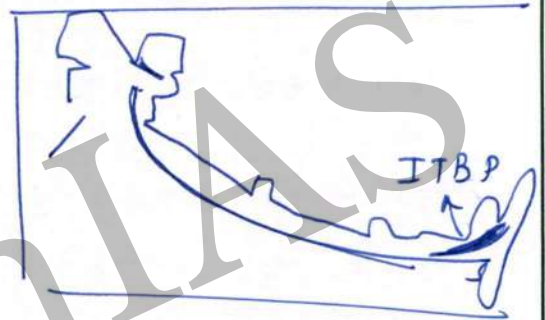
10

ITBP - border security force

guarding the Indo China border

along the LAC and MacMohan line (NE)

~~Both India and~~
~~China~~ 9



Role of ITBP

- 1) securing the border
- 2) contributing to safeguarding peace and tranquility in the region
- 3) Quinteressential role in safeguarding sovereignty
(eg) restricting China's expansion across borders.

- 4) support developmental efforts
- 5) safeguard the interest of border population
- 6) Also encourage and provide security to tourists

⑧ Manasarovar Yatra

- 7) Specialised training to ITBP personnel
- help in attending to disasters in the
himalayan region → landslide, glacial
outburst

Way forward

- 1) Faster infra development along LAs
- ⑧ leverage vibrant villages programme
- 2) Capacity building of ITBP personnel

Owing to the significant role, ITBP
personnel are called as

HIMVETRS .

11.

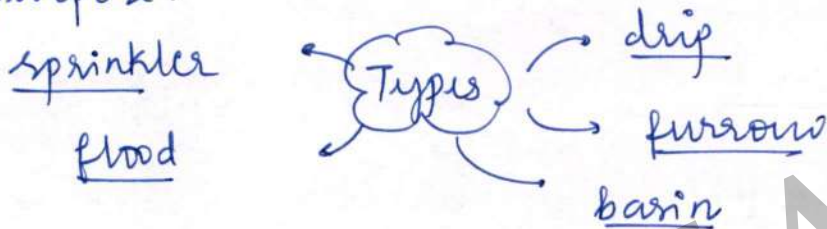
क्या आपको लगता है कि भारत को 'भूमि उत्पादकता' के सिद्धांत को छोड़कर 'सिंचाई जल उत्पादकता' के सिद्धांत को अपनाने की आवश्यकता है? अपने उत्तर का औचित्य सिद्ध कीजिए। यह बदलाव करने में कौन-सी चुनौतियां विद्यमान हैं? व्याख्या कीजिए। (उत्तर 250 शब्दों में दीजिए)

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
Candidates must not write on this margin

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Irrigation refers to the water supply catering to agricultural purpose.



There is a need to shift from land productivity to irrigation water productivity.

- 1) Agriculture uses almost 80% of fresh water
 - 2) Agriculture uses 60% of ground water
 - 3) UN Report - India uses almost (25%) of world ground water increasing stress
- 4) Water use efficiency of flood irrigation \approx 35%

5) Flood irrigation employed for 77% of gross cropped area is leading to soil salinity

6) Wastage of water → Overuse by farmers.

7) Increasing climate change extremities - (e.g) drought
Challenges in making the shift

1) The cost of other modes of irrigation such as micro irrigation is high.

2) Acceptance by farmers

3) There is no efficient methodology to assess the water required by different soils and cropped

4) Any variation may impact agricultural productivity

5) Populism (e.g) free water to farmers (Free electricity in Punjab).

Way forward

1) R & D in Agriculture and Irrigation Techn^{sw}

2) Incentives farmer

② DBT to microirrigation (Niti Aayog)

3) Global best practices : Israel Model

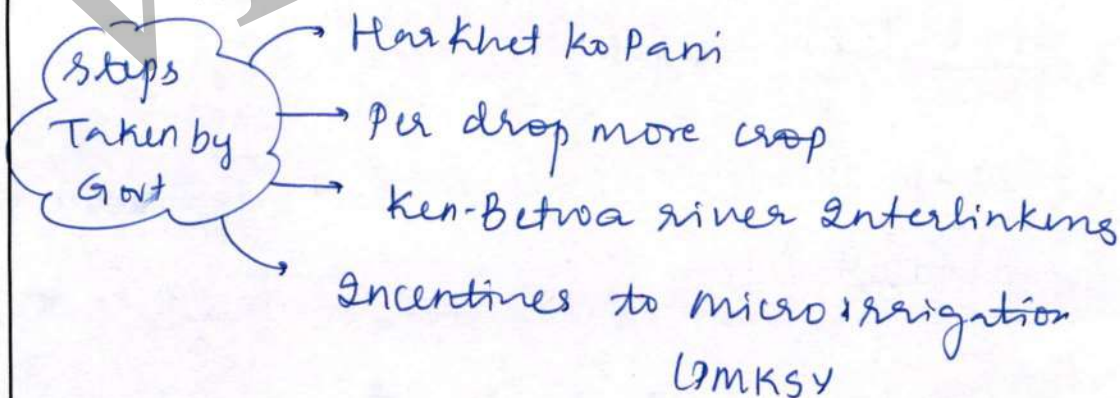
4) Use treated waste water for irrigation

5) superate feeder lines

6) Innovative Models :

• Bhungros (Gujarat) : rain water captured and used

7) Pa



Increasing water productivity has capacity to increase farmers income, productivity and efficiency (Dalwai Panel)

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 हार्जिन में नहीं लिखना चाहिए
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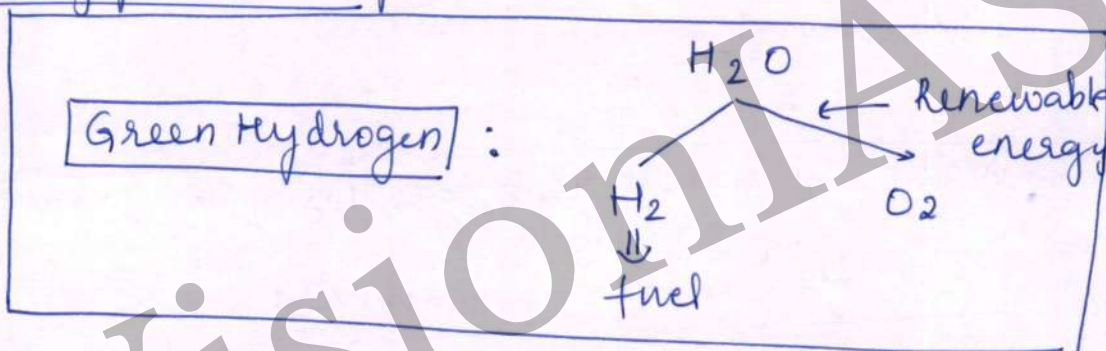
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India despite containing 18%.

of world population has access to only

$\frac{1}{3}$ of global energy, depicting gaps in

energy security



Role of Green Hydrogen in Unlocking energy security

1) Renewable source of energy

2) Immense quantity of water
available (7,500 km coastline)

⊙ IIT-M :- developed green hydrogen from salt water.

- 3) In lines with decarbonising the economy
- 4) Calorific value of green hydrogen is immense
 - Green hydrogen is 2/3 times of natural gas
- 5) Reduce Import dependence → help us achieve self sufficiency in energy security.

National Green Hydrogen Mission helps India in the following ways

- 1) Target of generating 5MMT greenhydrogen by 2030
- 2) supports R&D in green hydrogen
- 3) separate fund allocation addresses the financial constraints.

4) Vision to develop India as the global
hub of green hydrogen

5) Targets : Generation - Use as well as
exports of Green hydrogen.

Way forward

1) Support the ecosystem - financial aid

2) Personnel / Technical Capacity needs to
be developed

3) International collaboration can be
encouraged

4) Encouraged startups focussing on
Green hydrogen

Green hydrogen has the capacity to
address the short term energy
goals as well as long term decarbonising
goals

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

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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Minimum wage entails the basic amount payed for any job (Minimum wages Act) while living wage is similar to Universal Basic Income.

Benefits of Adoption of living wage

- 1) Each individual has access to minimum amount of income
- 2) Will address the basic needs which can be bought through living wage
- 3) Can timely accomodate the inflation trends in living wage than minimum wage.

4) has the capacity to address poverty as well as hunger

5) living wage will further increase consumption expenditure in the economy

6) entails human right to basic income.

Constraints

1) Increased Pressure on Public Exchequer

2) No guarantee that living wage will be used to address basic needs

3) Increased govt expenditure towards revenue → compromise on other development goals

4) Increase Inflationary Pressure in economy.

- (eg) Free money being pumped .
- 5) The concern of political populism
- (eg) Freebies in deciding the living wage.

Way Forward

- 1) Cost-Benefit analysis of living wage to be done before implementation.
- 2) Use of technology
- (eg) CBDC → targeted spending limits on basic goods .
- X amount → PDS
- 3) skill development of people to be the goal

living wage is a double edged sword, hence needs to be deployed carefully.

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)

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए
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By virtue of Article 112, every year Annual financial statement (Budget) is laid in both houses of parliament on February 1.



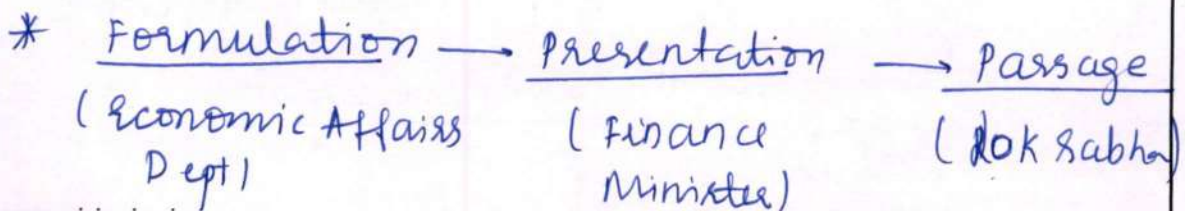
revenue and capital expenditure details

entire financial statement for a year

Political + social + economic document

However neither the budgetary processes nor budget policies are under public scrutiny

Budgetary Process:



- Formulation :

- 1) Secretive formulation
- 2) Budget mostly is increment made on previous allocation than based on outcome

- Presentation and Passing

- 1) 70% of budget passed without discussion
- 2) Misuse of grillotine
- 3) Productivity of CAG, PAC, Estimates committee are post-mortem

Budget Policies

- 1) reason for decrease in allocation is not stated
- ② Agricultural Budget has reduced from 3.3% (FY. 22-23) to 2.8% (FY 23 Budget)
- 2) reason for gap between revenue actuals and revenue estimates is not stated

3) lack of discussion in loksabha when ruling government enjoys brute majority

Yet there is Public scrutiny, as

1) No money can be taken out of CFI without parliament's assent

2) Use of motions - cut motions to make adjustments.

3) CAG's scrutiny on budget spending

(eg) 87% nisbhaya fund not utilized (22)

4) Budget widely discussed in parliament as well as media.

Way forward

1) Greater participation in loksabha

2) limit use of guillotine

3) Reason for gap between actuals and estimates to be provided in writing.

Budget needs to become performance & outcome oriented with greater public scrutiny.

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 हाशिए में नहीं लिखना चाहिए
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Economic Survey 23-24,

stated that India has achieved global number one position with regards to milk production.

Transformation due to
milk revolution
encouraged milk cooperatives (e.g. Amul)
encouragement of Govt

Yet productivity of dairy animals remains a concern

- 1) Increase in diseases in dairy livestock
(e.g. Foot and Mouth disease)
- 2) Traditional methodology employed

Lack of mechanisation in dairy

② Milking cattles, handling cowshed.

- 3) Access to veterinary services is still lacking in remote villages
- 4) lax implementation of livestock policies
- 5) Overemphasis on foreign breed than developing indigenous cattle
- 6) Unavailability of insemination techniques to increase the breed of productive dairy animals

Way forward

- 1) Employ Technology in entire dairy supply chain
- 2) Encourage cooperatives
- 3) Development of Indigenous Cattles

with better dairy productivity

4) Access to veterinary services to be made easy, accessible, affordable & available.



Significance of dairy sector - It can allow India to export dairy products, double farmers income and support rural economy. Thereby, holds greater importance to the country.

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)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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15

Agriculture sector in India

employs \approx 50% of labour force contributing to \approx 18-20% towards the National GDP.

Climate change responsible for crop failures in the following ways:-

1) Climate extremities

⊕ Floods in North India (2023) -

Punjab Haryana crop loss

2) Monsoon variability

⊕ decrease in SW Monsoon (2023) -

drought in Karnataka.

(3) Variation in weather and climate affects cropping season

eg) delay in arrival of kharif season.

(4) Proneness to disasters

eg) Tropical Cyclones.

Agricultural sector itself is partly responsible

(1) Release of large quantity of Global warming gas

eg) Flooded Agriculture field → Methano gens → Methano emissions

(2) Overuse of pesticides, fertilizers

eg) Alters the soil ecology.

(3) stubble burning → Air pollution

eg) Addition of carbon dioxide

(4) livestock and secondary agriculture contribute to carbon footprint

Strategy Adopted Under National Agriculture Disaster Management :

- 1) Prevent climate unfriendly agricultural practices
- 2) Encourage climate resilient Agriculture
- 3) Steps to rationalise the agricultural inputs - to reduce impact of agriculture on environment
- 4) standard protocol developed to tackle agriculture disasters .
② Pest Attack, loss of crops .

Way Forward

→ Agriculture R&D minimum 1%
→ Develop climate resilient Agri GDP crops

Mechanise agriculture to reduce green house gas emissions

Owing to greater climate extremities, reorienting agriculture is quintessential for agriproductivity and food security .

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

Almost 53% of India's land
is prone to Earthquake (NDMA)



Fig: Earthquake regions

Reasons for vulnerability

- 1) Continuous plate movement
- Indian plate towards Russian plate
- 2) Major parts of north India and North East India lie on the faultline
- 3) Himalayas being young mountains frequently undergo changes, reorientation
- triggering earthquake

4) The habitat load on the fragile region triggers earthquake

⊗ Joshimath - development > carrying capacity of the region

5) The slopes of Himalaya are steep thereby increasing the impact of earthquakes in the region.

Institutional Measures that have been taken up :-

1) IS-1893 → Code towards earthquake resilient buildings.

2) Rigorous mapping of the earthquake prone zones

3) Incentives towards earthquake resilient buildings ⊗ In Gujarat post Bhuj earthquake.

4) NDMA guidelines are formulated.

Yet there are significant gaps

- 1) Rules of earthquake resilient building are seldom followed.
- 2) Despite vulnerability of region - haphazard development
- 3) large hydroelectric projects in himalayan zones
- 4) Earthquake is yet to become integral part of urban planning in India

Way forward

- 1) Banks to give home loans to buildings that incorporate earthquake resilience design in Zone-3 and 4
- 2) Global best practices : Japan
- 3) Use of Technology → sensor triggers warning in buildings.

Earthquake causes immense structural, economic & human loss hence needs to be addressed with seriousness.

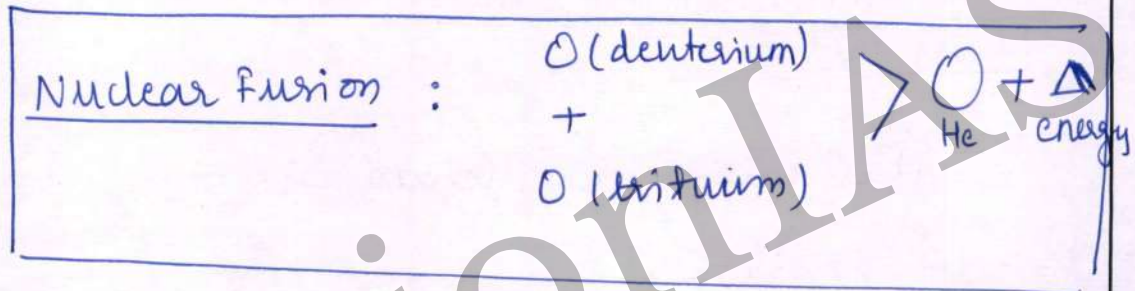
18.

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

Recently scientists based in USA announced net energy gain in a nuclear fusion experiment



Advantages of Nuclear Fusion

- 1) Immense quantity of energy released
① 1kg fusion fuel = 100kg fossil fuel
- 2) Can address the global energy needs
- 3) Renewable energy source
- 4) A step towards decarbonising the economy.

5) Continuous energy generation
(24x7) unlike solar and wind
which are dependent on variable factors

6) When economy of scale is achieved
- cheaper energy generation can be
possible.

7) No nuclear waste
limitations

(1) establishing nuclear fusion
reactor very costly

(2) Cutting edge technology is needed

(3) Combining atoms requires
high temperature and pressure
similar to that in sun

(4) Very difficult to generate to
cater to commercial scale

(5) Infrastructure development, procedural and technological advancements are cumbersome.

Way Forward

1) Collaboration between nations

(eg) ITER

2) developing greater nuclear scientists

3) Encourage R&D in nuclear science

4) Cost-Benefit Analysis & steps towards achieving economy of scale.

Nuclear fusion energy has immense capacity to transform the global energy security and pave path towards development.

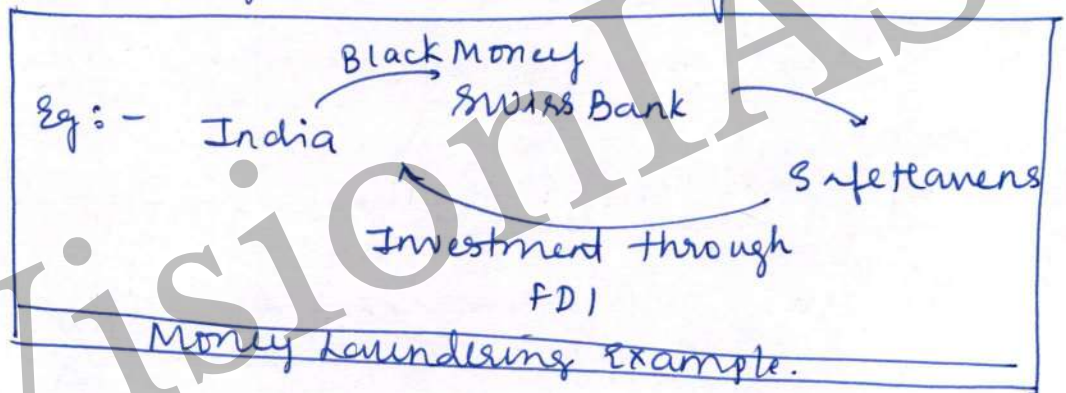
19.

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

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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Money laundering refers to techniques used to change money developed through illegal activities into legal money. That is: Converting dirty money to clean money.



Menace of Money Laundering in India

- 1) less than 10% NGOs file income returns (CBI)
- 2) loss to the economy 1-2% GDP (IB report)

- 3) laundered money to fund anti-national activities.
- 4) develops ~ parallel economy affecting monetary policy
- 5) has ripple effects on society
 - ⊗ corruption → income inequality → encourages anti social activities (naxalism)

Recent Amendment of PMLA, 2002

Features :

- 1) widened the ambit → NGOs, Journalists, administrative functionaries, cartoonists are within the scrutiny of PMLA
- 2) Prevents diversion of funds from one NGO to another
- 3) Checks on funding received from abroad

4) Increased accountability of NGOs and other Civil Society institutions

5) Lag on administrative expense on NGOs (20%)

Efficacy in tackling money laundering

- 1) Greater transparency
- 2) Reduce the menace of money launderers
- 3) Increases the role of Govt
- 4) Ensure income to government (IT Tax)
- 5) Reduce vulnerability towards anti-national activities

Way forward

- 1) strengthen institutions: ED, CBI
- 2) employ Technology to tackle money laundering using Crypto
- 3) Collaboration

criminalising money laundering in accordance to Vienna & Palermo Convention

will further increase efficacy of PMLA-

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)

उम्मीदवारों को इस हार्जिन में नहीं लिखना चाहिए
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India has a coastline of 7,500 km thereby increasing maritime security threats.

Significance of IOR

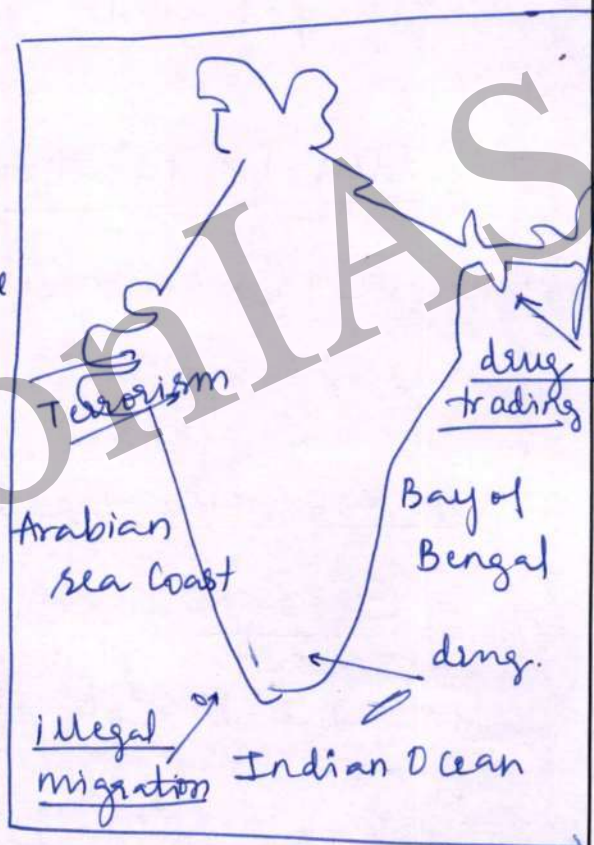
1) 90% goods in volume
70% goods in value
passes through IOR

2) Border security

3) Unity and Integrity of the Nation

4) Trade interests

5) Geopolitical interests - Indo Pacific



Security Threats present in IOR

1) Terrorism: Infiltration of terrorists

⊙ 26/11 attack - terrorists via Gujarat coast

2) Drug trafficking :

⊗ From Golden triangle via Bay of Bengal towards north-east India

3) Smuggling of goods

⊗ From Arabian coast via ports smuggled goods enter India

4) Illegal migration

⊗ Sri Lanka - economic crisis → illegal migration towards TN

5) Sovereignty threats

⊗ China's string of pearl policy presence in IOR



6) Piracy - rampant

in Indian Ocean region.

Robust strategy suggestion

1) Capacity building of maritime security forces. → Coast Guard

2) Strengthen Indian Navy's Capacity

- modernise the navy.

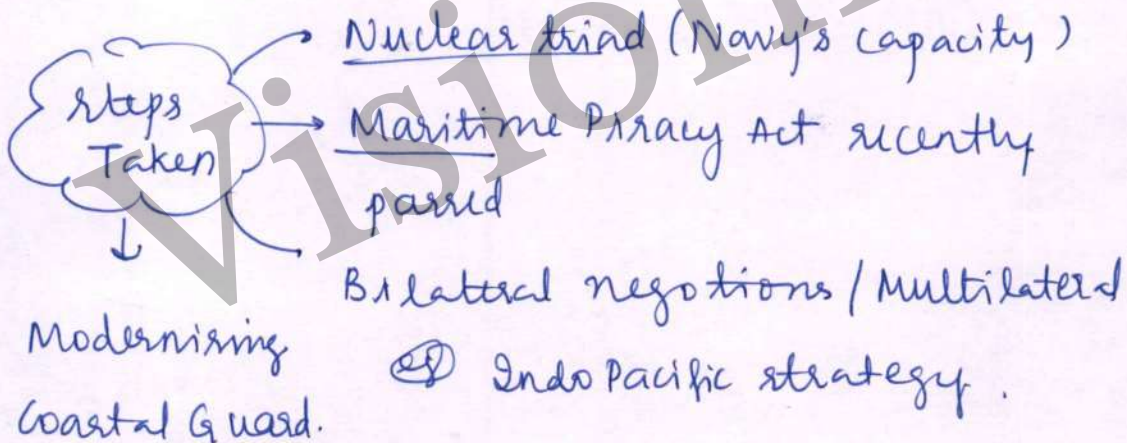
3) Fencing coastal borders

4) Collaborative Action

- strengthens bilateral cooperation to tackle maritime threat

⊕ India - Sri Lanka

5) Increase accountability in trade
via ports



security, ^{along} Maritime borders is
quintessential to secure sovereignty,
integrity, unity & development interest of
the nation.

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