



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 उपरान्त 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. : 1138117

अभ्यर्थी का नाम/Name of Student : Archit Dongre

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27th August, 2023

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

केंद्र

Centre

Bhai Joga Singh Public
School, Faiz road
Delhi

निरीक्षक के हस्ताक्षर
Invigilator's Signature

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

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परीक्षक के हस्ताक्षर Signature of Examiner(s)	

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

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



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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

उम्मीदवारों को
इस कॉपी में
नहीं लिखना
चाहिए
Candidates
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this margin

India's production of foodgrains exceeds
300 Metric Million Tonnes yet there is
high prevalence of Hunger as per
Global Hunger Index (107th Rank).

food security

(i) dimensions

→ Agriculture → need effective & efficient
production of grains as
strategic reserves &
Buffer stocks

→ People oriented → PDS, TPDS, NFSA etc
are oriented to promote
food security

→ Storage - need storage facilities to
store grains for distribution

Markets → efficient markets for
effective procurement of grains

• farmers - should be suitably compensated so are financially stable for rent crop cycle.

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
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India's Status

- (1) Agriculture
 - over dependence (48% workforce) but only 18% of GDP.
 - poor soil health - NPK ratio 8:4:3
 - highest produces in some areas like ~~other~~ horticulture etc.
- (2) People oriented - problem of "hidden hunger" to much emphasis on coarse grains
(Wasting - 19%, Stunting 39% & Undernutrition 32%)
ENFHS-5 report
- (3) Storage - only 40% of produced grain can be stored - poor warehouse conditions
- (4) Markets - APMC defects, information asymmetry, fluctuations in price, "crowd effect"
- (5) farmers
 - monocropping prevalent.
 - avg income of household ₹10,000
 - majority small farmers (85%) less than 2 hectare land

Way forward

- Need to increase storage status using innovative measures like NWK (Negotiable Warehouse receipts)

- Social Security & Contract farming.
- Chandakumar Committee Recond - Private Procurement enabled

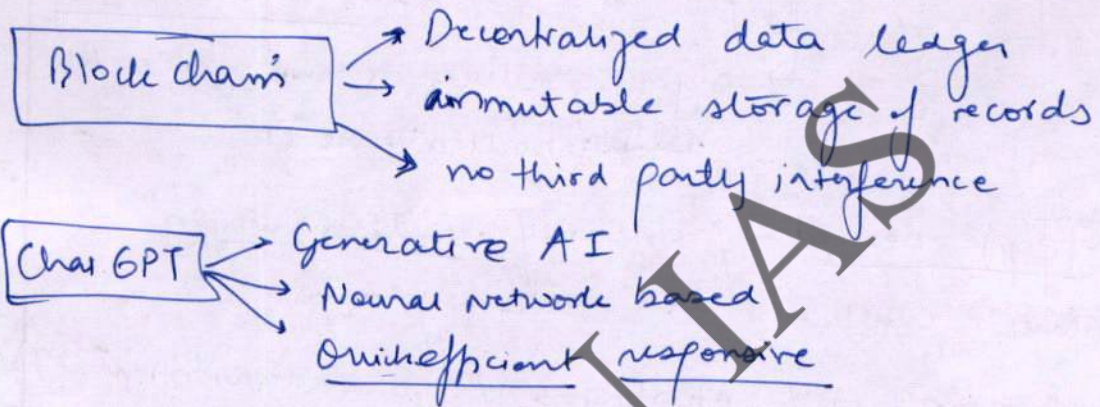
2.

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

Blockchain & Chat GPT are the 2 important aspect of IR 4.0.



Potential to Transform India (Agriculture)

(1) Blockchain

- Storage of records & land holding records (eg DILRMP)
- efficient & transparent storage of beneficiary information under schemes eg PM Kisan eliminate "ghost beneficiaries"
- Storage & tracking of fertilizer, food & other subsidies
(40% fertilizer in black market)

- Storage of insurance & crop management records eg PM Fasal Bima Yojana.
- reduce litigation & land holding disputes & facilitate land consolidation etc.
(as per World Bank 66% govt case on land problems)

ChatGPT

- trained in vernacular language to answer farmer queries eg ChatBot
- predictive analysis on weather, crops, soil quality etc
- facilitate farmer grievance, & dispute help in terms of legal matters

Challenges

- low digital literacy (10%)
- Infrastructure & computers very less prevalent.
- Blockchain - high power used (not eco-friendly)
- ChatGPT - limited to data trained on. Not possible to give nuanced info & niche criteria

Way forward

- Common service centres for farmers
- increase & incentivize uptake of technology
- improve digital literacy levels & mKisan

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

With the change in world order from unipolarity to multipolarity & Washington Consensus to New Washington Consensus, dedollarization has been desired.

Factors accelerated dedollarization

- (1) Rise of global South & Emerging economies
eg India, China (Beijing Consensus)
- (2) Russia - Ukraine war
SWIFT removal of Russia - led to rupee trade, currency swaps etc.
- (3) Exposed dollar as weak currency
↳ effect of "fed tapering", "operation twist"
led to effects on domestic economies
Try to reduce dependence on dollar

(4) "Weaponization of trade" → Countries
sought to reduce trade dependence on
dollar → strategic autonomy
(86% of import/export happens in dollar)

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

(5) Desire to trade with Iran, Russia,
Venezuela - under sanctions from USA
hence to find alternative means use
domestic currency eg India purchased
deep discounted oil from Russia

Possible soon - Yes

(1) Chinese & Russian Interbank systems can
make it possible i.e. alternative to
SWIFT eg China's CIP.

(2) Bilateral agreement & currency swaps
eg India - Russia agreement.

(3) Nostro-Vostro Accounts for trade
↳ facilitate dedollarization.

(4) Demand for inclusion of rupee in SDR
basket - "internationalization of rupee"

(5) Rise of alternate mechanism - Cryptocurrency
Bonds, NFTs etc

Hence, dedollarization & internationalization of Rupee is

4.

विकसित देशों द्वारा भारत पर खाद्य सन्निधि 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

Under the agreement on Agriculture (AOA) India's PDS & MSP falls under the Amber Box category hence they are considered as "price distorting"

Pressure from developed countries

→ Debate & deadlock on "peace clause" - Doha agreement still pending.

→ De-minimis levels for developed countries are higher - unfair advantage

→ Sugar prices pressure from Brazil, Australia & USA

→ MSP considered higher than market price makes farmers richer compared to other countries for more production¹² - has led to objections

Merit in retaining

- 67% population covered under NPS A needed for food security (16% NPS poor in India)
- high degree of stunting (39%), wasting (19%) & undernutrition (32%)
- 50% + women suffer from anemia.
- farmers are largely small scale (85%) & lack social security.
- Need healthy population to reap benefit of demographic dividend of 37 yrs (2018-2055)
- In line with our goals of SDG 1 & SDG 2 (poverty & hunger)
- Midday Meal & ICDS necessary for foundational & early nutrition requirement - reduce IMR to 1 as per National Health policy (currently 1.03 per lakh)

Hence, India should gradually move towards a more market based approach but first ensure social security & nutrition security for population.

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 ~~17~~ ¹⁷ % of world population
2.4 % of land & very less percentage
of fresh-water sources.

16 % of our ground water sources in
districts are over exploited (CGWA report)

Initiatives to address water needs

- (1) One Water Policy → Grey water recycling
→ Integrated watershed mgmt → reuse (4R principle)
↳ water as "public good"
- (2) Hariyans Jal mission
& Jal Abhiyan - 55 L of FHTC
Jal Teeran mission per day to all
houses.
- (3) National Hydrological Mission - map
lake & ground water sources.
- (4) Cleaning rivers & lakes of Namami
Gange programme
& Swach Bharat abhiyan

Warrant interventions

- (1) large number of over exploited & critical ground water resources
- (2) Ground water pollution & stressed resources.
- (3) droughts due to climate change
eg. Latur in Maharashtra.
- (4) Issues of poor WASH principles
 ↓
 Water Sanitation Hygiene

Steps / Intervention could be taken

- large scale harvesting & conservation efforts
- Move of an "lifecycle approach" with water
- Purification centres - technology & infrastructure upgrade
- R & D emphasis - Recently Water Ocean Salination plant constructed.

Hence, with better technology & community efforts we can address problem of water scarcity.

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)

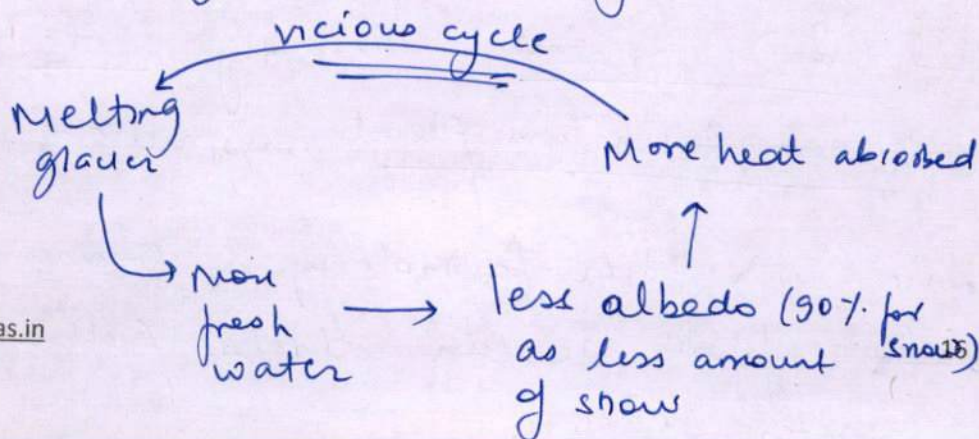
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Glacial Retreat in Arctic refers to the gradual melting of Arctic glaciers & subsequent implications on global temperature, ocean conditions & life.

Drivers for glacial retreat

- (1) Global warming & climate change
 - increased temperatures due to greenhouse effect & loss of ozone
- (2) Influx of more fresh water due to melting - vicious cycle created



(3) Reduced efficiency of ocean conveyor belts to transport water from equatorial region to poles
i.e. weakened AMOC

(4) Weakening of polar vortex causing warmer conditions in the Arctic region & cold waves in USA etc.

(5) decreased precipitation levels & fluctuations in amount of snowfall.

Impact

- Rising ocean levels - subsidence of vulnerable Island states & low level areas
- loss of biodiversity
- Increased chances of flooding & ocean incursions - reduced coastline (erosion)
- Disruption of ocean ecosystem due to ocean current disruptions - EL Nino (prevalent) etc

Way forward - Adhere to NDCs in spirit of COP21

→ Life approach (PM Modi)
→ accelerate green energy prioritized.

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

Many new companies like Blue Origin (Jeff Bezos), Virgin Galactic

SpaceX are considering commercial space tourism which will be a reality in coming times.

Hindrances & challenges

- (1) Difficulty in developing uniform policies & standards - eg safety standards, permissions etc
- (2) High Cost of tourism - unaffordable to most.
- (3) Technological challenges - designing of crew safety module, Cabin conditions etc.
- (4) Problems of Health eg loss of bone density in space (osteoporosis)

5) Questions of who will regulate space tourism sector

उम्मीदवारों को इस हार्डिप में नहीं लिखना चाहिए
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Measures to address challenges

- figure out cheaper & more affordable alternatives for space tourism.
- Research & development should be prioritized - operational safety norms in place & rigorous testing for human safety.
- evolve uniform & multi-stakeholder based policy to regulate space tourism sector.
- emphasis on safety standards & emergency protocols must be in place.

Hence, space economy & tourism is the new front for discovery & exploration.

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)

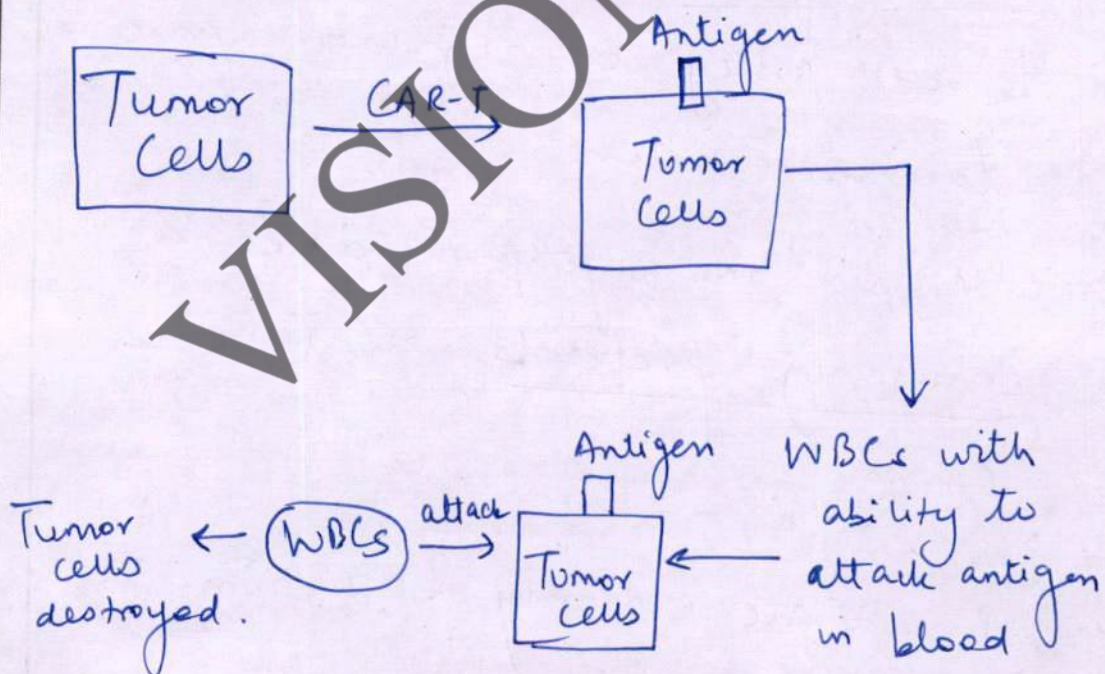
Global health experts widely believe that the development of CAR-T cell therapy can be a game changer in the treatment of cancer. How can CAR-T cell therapy overcome the limitations of CRISPR-Cas9 technology? (Answer in 150 words)

10

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इस स्थिति में
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Chimeric Antigen Receptor Therapy

(CAR-T) has been regarded as a new way to treat cancer by using body's immune response against artificially placed antigens.



Game changer & overcome CRISPR defects

→ Ensures body destroys tumor cells based on natural immune response
No need for painful chemotherapy & radiation treatment

→ CAR-T needs to be only given once to the patient.

No need for repeated visits & continuous blood transfusions.

→ prevents the chances of regrowth of tumor cells — WBCs will attack them by their own accord.

→ more cost effective than expensive CRISPR-Cas9 methodology

Challenges

- ↳ difficult to come across expertise & ability of CAR-T
- ↳ relatively new technology need more R & D efforts.

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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9.

चर्चा कीजिए कि प्रमुख हिंसक चरमपंथी संगठनों द्वारा नई और उभरती प्रौद्योगिकियों के बढ़ते इस्तेमाल के विरुद्ध संगठित एवं ठोस वैश्विक प्रयासों की आवश्यकता क्यों है। (उत्तर 150 शब्दों में दीजिए)

Discuss why the rising deployment of new and emerging technologies by prominent violent extremist organizations demand concerted global efforts. (Answer in 150 words) 10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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India in the UNSC Delhi Declaration
against counter-terrorism raised
voice for universal definition of
terrorism & need to come together
to combat cyber terrorism

Prominent technology being used

- Gaining lobbies for recruitment
(anonymous & difficult to track)
- Dark & Deep web - e.g. Silk road
for purchase of guns, arms etc
Dark web also known for propaganda
- Social Media - "echo chambers"
reinforce extremism, fanaticism,
- Metaverse - ability to carry out
simulated violent activities.

Need concentrated efforts

- Cross border violence requires cooperation. (eg) SCO RATS / UNSC etc
→ UN PKF (peacekeeping force)
- Terrorism & Extremism called as "problems without passports" - need active involvement of all
- Issues of safe havens to terrorists contradict global efforts eg Pakistan safe haven for terror.

Steps

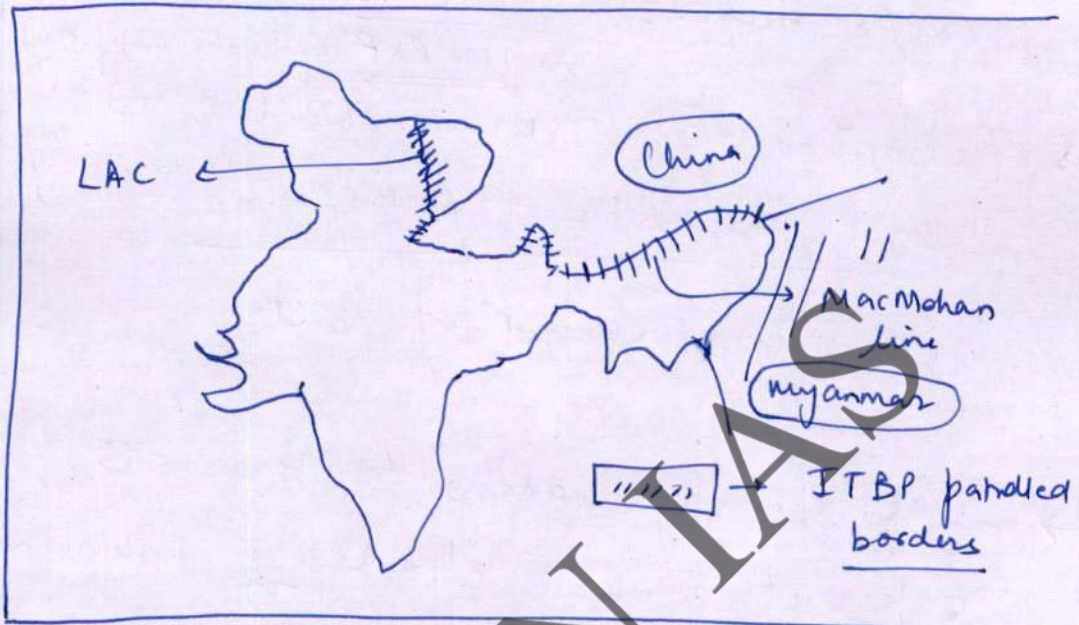
- Regulate in cooperative manner of upcoming technology eg Metaverse, Social Media, AR, VR etc
 - International platforms used to disseminate idea of harmony & peace
 - Global Best practices adopted (eg) EU's digital Services Act
 - Control fake news, deep fakes & propaganda
- Hence, technology must become a boon & not a bane.

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 operational area.

ITBP role & functions

- Chief border patrolling force for the Indo-China border (2nd largest border for India)
- Keeps Chinese border excursion &
 - (2I) → Infiltration in check
 - Incursions
- Chinese policy of "Salami slicing" countered using Tibetan force

as major recruits are ethnically Tibetan
→ counter disinfo historical folly

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इस कक्ष में
नहीं लिखना
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→ Other aspects like providing
security to foreign delegates in
Afghanistan also done by ITBP.

Plan up in border Area

→ Border overhaul — more capital &
(Shetkar Committee) better infrastructure.
- recommended.

→ Vibrant Villages programme — "first
line of defense" — as per Home
Minister

→ Infrastructure development &
connectivity initiatives ~~eg~~ IMT
highway, Atal Tunnel etc.

→ Better modes of communication &
satellite technology in place.

Hence, with ITBP the Indo-China
border remains largely protected
to prevent loss of Indian soil.

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

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इस कॉलम में
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Irrigation Water productivity refers to focussing on the output derived per unit of water given to irrigation in a bid to draw attention to sustainable & effective use of our water resources

Need to shift

- Water scarcity & over stressed ground water resources (16% over stressed)
- Climate change effects - large scale drought etc
- Irrigation to be shifted to better water use practices eg drip, sub-surface, micro, sprinkler irrigation etc.
- Land productivity - stagnated due to

- over use of fertilizers eg NPK ratio skewed 8:4:3 (4:2:1 is ideal)

Challenges

- 55% of area is under rained agriculture — also subsistence level
- Around 40% area under irrigation need to increase irrigation on scientific lines.
- Infrastructure & affordability bottlenecks eg difficult to access equipment for drip irrigation etc.
- environmental concerns regarding the process of river interlinking eg Ken-Betwa Panna reserve getting submerged

Way forward

- Per drop more crop initiative.
 - Water Harvesting practices traditionally eg Zing (Ladakh), Ahar Pynes (Rajasthan) etc. — promoted
 - Scientific irrigation & conservation of soil moisture eg Salinization, vertical farming
Aquaponics, Hydroponics
- These are highly water efficient practices to be

Shift from land productivity, However should not be exclusive :-

(1) Land resources are chief source of soil nutrients

↳ need to effectively combine land productivity & water productivity
eg using fertigation, subsurface irrigation, soil moisture conservation

(2) Climate resilient policy initiatives should be emphasized -

NMSA (National Mission for sustainable Agriculture), composting, zero tillage

& innovative measures like

Zero Budget Natural farming

↳ Jiva Amrit
↳ Bija Amrit

Thus, R&D & more ecosystem approach needed to ~~to~~ land & water productivity equally

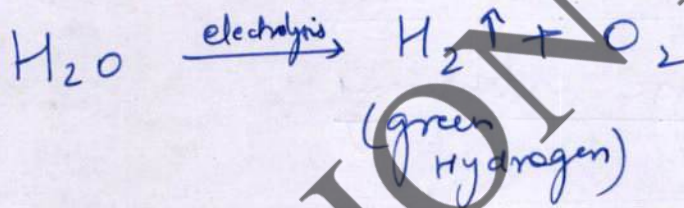
भारत की ऊर्जा सुरक्षा प्राप्त करने में हरित हाइड्रोजन की भूमिका का परीक्षण कीजिए। राष्ट्रीय हरित हाइड्रोजन मिशन, भारत की अपने ऊर्जा लक्ष्यों को प्राप्त करने में किस प्रकार मदद कर सकता है? (उत्तर 250 शब्दों में दीजिए)

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

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इस इच्छा में
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Green Hydrogen is produced from
electrolysis process thereby leading
to production of no harmful GHGs
It is a clean source of energy.



Role in unlocking energy security

(1) 85% of crude oil & 50% of
natural gas is imported
↳ High trade deficit with
West Asian countries (\$66 Billion)

(2) Complement India's Panchamrit &
NDCs in fight against climate
change → 500 GW of clean energy by

2030 & 45 % reduction in emission
(2005 level) by 2030 will be
expedited

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इस कक्ष में
नहीं लिखना
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(3) Lead to innovation & technology
revolution in vehicles, industry
etc.

↳ Already Green Hydrogen need to
be implemented in steel industry

(4) Reduce import dependence & lead
to strategic autonomy.

National Green Hydrogen Mission

- Make India global Hub of Green H_2 manufacture
- Export Hub of Green Hydrogen
- Innovation, R & D, and production linked incentives
- Export promotion & credit guarantee on capital equipment for H_2 production.

- Employment of around 6 lakh jobs to be generated.
- Reduce current account deficit by reducing energy import
- facilitate FDI & ease of doing business by upgrading Logistics policy (8% cost targeted)

उम्मीदवारों को
इस हिसाब में
नहीं लिखना
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Challenge

- Storage of H_2 difficult need low temperature & explosive in contact with air
- Technology in nascent stage need more R & D to produce vehicles on H_2 combustion fuel cells
- Production of Green H_2 itself uses electricity coming from conventional sources (polluting) (need to be phased out).

Way forward → Active policy support & facilitation of technology uptake can lead India to be a global hub of H_2 manufacture.

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

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इस सक्षिप में
नहीं लिखना
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Minimum wage is the legally
mandated wage that must be
given below which it would be
regarded as bonded labour (Asiad Case)

living wage → It is the wage provided
that ensures a fulfilling life for a
worker taking into account not just
sustenance but recreation as well

Transition

→ Most developed countries have preceeded
to living wage transition eg
finland, Norway (Scandinavian
model)

→ leads to better human development
& human resource parameter

- Japanese model of work also focus towards higher wages & worker well being - sleeping in workspaces is legally allowed in Japan
- New demands for living wage, 4 day week etc.

Benefits

- Improve workers well being & multifaceted personal development can be ensured.
- Better ability to spend on food & diversified nutrition sources
→ address problems of hidden hunger
- lead to better ranking on global human resource indicators like HDI, Global Happiness Index etc
→ global perception improve
- lead to more saving → more money with banks → more lending
↓
Higher GDP ← more capital expenditure

Constraints

- Inflation can reduce value of higher wage value in real terms
- Higher expenditure & wage-inflation spiral can be cause of concern
- Employers forced to pay more reduce ability for other expenditures eg capital goods, expansion etc.
- Higher tendency of households to keep money in cash (80% prefer) → not aid banks ability to lend.

way forward

- Effective monetary policy mechanism in place - credit rationing, repo rate etc
- promotion of small saving schemes by govt → help mobilize capital.
- Increase insurance & pension participation penetration (6%) &

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)

Article 112 of the Annual Financial Statement & budget is the governments annual expenditure plan disclosed to the public.

Affects every sector

→ funds are distributed to each ministry as rate of grant → Hence all aspects of public policy accounted for
→ line item budgeting for specific schemes, services ensures funds to every sector.

Not under scrutiny

→ Budget plans & fund allocations not disclosed to anyone before announcing of policy.

- limited time of few months to debate, deliberate & vote on funds & demands
- DRSCs (departmental standing committees) have no binding say can only give recommendations
- Public largely passive participant in budgetary process
- parliamentary committees not used effectively. Recent report said on 11% consultations made in 17th Lok Sabha

But some mechanisms are in place :-

- Public opinion & some days for feedback are given by government.
- Shift towards impact based & outcome based budgeting in recent times

- Public platforms like My GOV. in, Google Hangouts (used in 12th FYP) used to ask for public opinion.
- Media actively involved in budget analysis, discussion, criticism etc. (4th pillar of democracy)
- New approaches like Barbell approaches, Capabilities approach, decentralization of fund expenditure plans to panchayats increase participation.

Ways to Enhance

- * Gender Budgeting should be enhanced to increase women participation in budgeting process.
- propriety audits by CAG to be publicized for public information
- Active involvement of civil society organizations is desirable in budgeting activities

Hence, budget is a powerful symbol of public policy to industry & investors & must be used as an effective tool

15.

भारत स्वयं को दूध की कमी वाले देश से दुनिया के सबसे बड़े दूध उत्पादक देश के रूप में बदलने में सक्षम हो गया है, लेकिन देश में डेयरी पशुओं की उत्पादकता चिंता का विषय बनी हुई है। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

India has been able to transform itself from a milk deficit country to the world's biggest milk producer, but the productivity of dairy animals in the country remains a concern. Discuss. (Answer in 250 words)

15

उम्मीदवारों को इस क्राशिए में नहीं लिखना चाहिए
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India accounts for around 24% of global milk production. It is also one of the highest exporters of dairy products of milk, cheese etc.

deficit to largest producer

(1) Efforts of Dr. Kurnen led to cooperative based movement in Anand (Gujrat)

↳ formation of AMUL

replicated elsewhere also of NIDHI

(2) Large population of ruminants in India → largest population of buffaloes in India

- (3) Support to mixed farming (India being agrarian economy)
- (4) Effective government interventions for milk efforts eg providing milch animals vaccination, breeding centres, markets for sale of animals:
- (5) Support promotion of dairy sector due to competitive prices in India (lower) as compared to New Zealand, Europe etc.

Productivity concerns

- Extinction & loss of indigenous breeds of dairy cattle eg Gir, Rathi, Red Sindhi, Nagori (low breeds)
- Quality of feed is poor — poor nutritional levels of cattle lead to poor quality milk
- Outbreak of diseases like eg lumpy skin disease & foot-mouth disease

↳ overuse of cattle for multiple purposes
eg ploughing, cart pulling, milking
reduced capacity to produce milk.

Way forward

- Initiatives like NPBBDD (National programme for Bovine Breeding & dairy development)
- Initiatives like Rashtriya Gokul Mission,
e-pashudhan Haath (market place)
Nahal Swasthya Patra (Animal Health)
- Technologies like artificial insemination,
bovine breeding centres
- Protection of indigenous breed as they
are hardy & resistant to disease
& climate factors.

Hence, with better policy interventions
India can dominate global dairy
exports.

16.

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

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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए।
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Agriculture sector is itself a massive emitter of greenhouse gases along with mixed agriculture / farming practices that involve animal related emissions as well.

Agriculture sector partly responsible

- Rice fields & methane emission from these fields are the 2nd highest source of GHG emissions after wetlands
- animal faeces & emissions also contribute to global warming
- over use of fertilizers like urea, led to skewed soil ratio
 - cause ground water contamination

→ clearing of farming for farming & lands lying fallow — lead to degradation desertification & soil erosion causing landslides, rockslides etc

→ Impact of pesticides & herbicides affect ecosystems — domino effect on overall climate.

Natural Management

National Agriculture disaster mgmt plan

- sustainable agriculture practices
- reasonable use of resources i.e. water, fertilizers etc.
- way to deal with hazards & risk management mechanisms.
- food security to be taken care of in case of failure of agriculture.

Way forward

→ Agriculture practices to be sustainable
eg Organic farming (Paramparagat Yojna)
Zero budget natural farming, Zero Tillage

→ Harit Dhara feed to animals leads
to lower emission of methane from
animals

→ Not keeping land submerged under
water instead use - drip irrigation
microirrigation etc.

→ Practices like Agroforestry, intercropping etc
used to maintain soil &
prevent desertification.

→ rational use of fertilizers eg use
Nano urea (80-90%) more effective

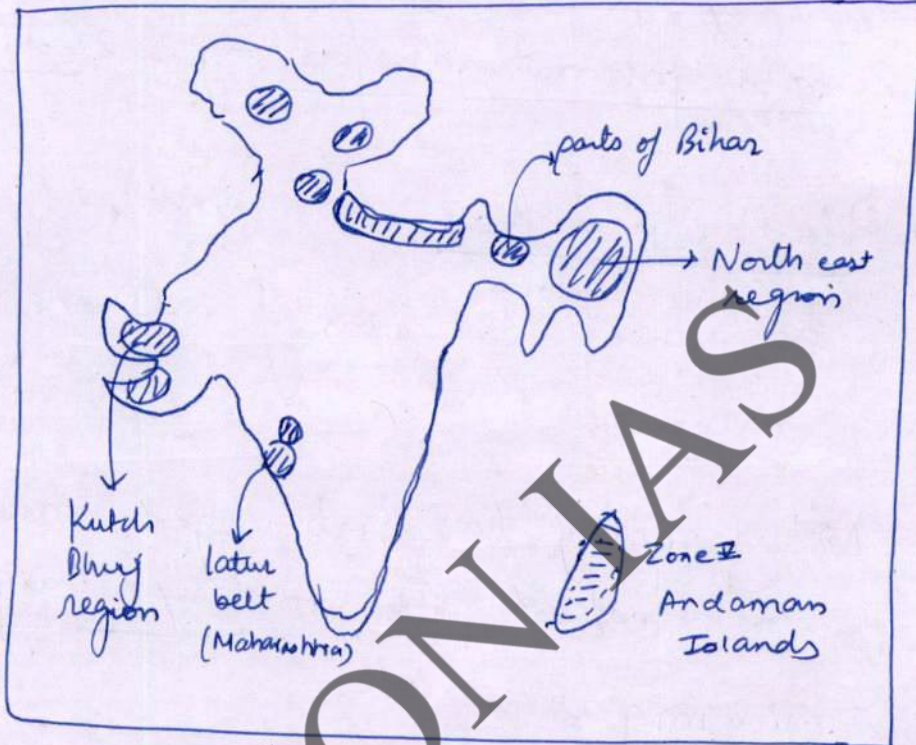
Hence, sustainable agriculture is in our
NCAP (National Climate Action plan). &
must be prioritized for policy
interventions.

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



Highly earthquake prone areas. (active)

Himalayan region is on the trans-alpine fault between the interactions of the Eurasian plate & Indo-Australian plate

Therefore, due to tectonic activity the surrounding regions of Delhi, Haryana, J&K are vulnerable to high levels of seismic activity.

Institutional Measures & NDMA guidelines

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- Organizational, Information systems in place. eg Hazard mapping, Zonal maps
- Seismic zonal mapping & monitoring of seismic activity across regions.
- Information systems & satellite communications mechanisms in place in case of loss of communication post earthquake
- National Institute of seismology - created application (mobile) for real time data & updates
- collaboration with international community on information sharing & early warning systems
- Seismographs & instruments to monitor activity in place along with Standard operating procedure (SOP) in case of earthquake
- Awareness raising - Eg don't use lift, under the table

significant gaps

- More of "fighting approach" than preventive approach.
- focus on sustainable construction practices eg learn from japan → light weight construction techniques
- Sendai Framework to cater for least protected & most vulnerable
- evacuation protocols & better coordination between multiple agencies.
- lacking provisions for rationing of food, medicines, health centres etc → should be done for every small unit of district.

Hence, preparatory measures to tackle climate disasters should be based on agile principles.

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)

Net energy gain in nuclear fusion reactions is when a fusion reaction produces more energy than it consumes.

Major breakthrough → will complement global efforts to combat climate change

Advantage of Nuclear fusion

- (1) Produces around 10 times more energy than a fission reaction
- (2) Elements needed i.e. tritium etc. are easily available
- (3) By products of the reaction i.e. Helium, water etc. are not harmful - no risk of contamination

(4) products & elements used are not radioactive, even tritium (isotope of H_2 is not radioactive)

↳ no risk of nuclear proliferation

(5) Reaction is self sustaining & produces more energy than it consumes

(net positive energy production)

Limitations at commercial scale

(1) High temperatures needed to start the reaction.
around 10 million $^{\circ}C$.

(2) Instruments eg like Tokamak & high powered magnets are extremely expensive & difficult to construct.

(3) Huge facilities & no. of reactors would be required to satisfy commercial demand.

(4) Highly skilled workforce would be required in large quantity for maintenance, construction, production etc.

Way forward

→ More R&D should be promoted to figure out more cost effective means

→ Increase nuclear energy production of India currently 1.2% of Total produced power

→ MoUs & International research projects ITER, CERN etc for better understanding.

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)

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Recent ammendment to PMLA

the ED (Enforcement directorate) was empowered by govt & the Supreme Court has upheld the ammendment calling laundering as a "serious offense" & corruption as "act of terrorism".

Recent ammendment

→ ED power to attach, seize, search offices & property.

→ ECIR report not an FIR & need not be supplied to defendant.

→ PMLA provision made bail more stringent only given if judge feels its appropriate.

- onus on accused to prove his innocence - reversal of principle of "innocent until proven guilty"
- stringent penalized provisions & increased sentences for offences

Menace of money laundering still prevalent

- FICN - fake indian currency notes
- Tax haven - shell companies
 - ↳ round tripping
- Hawala transactions & Benami transactions
- "Cash for favours model"
- ↳ poor land records - money in exchange for forged ownership

Way forward

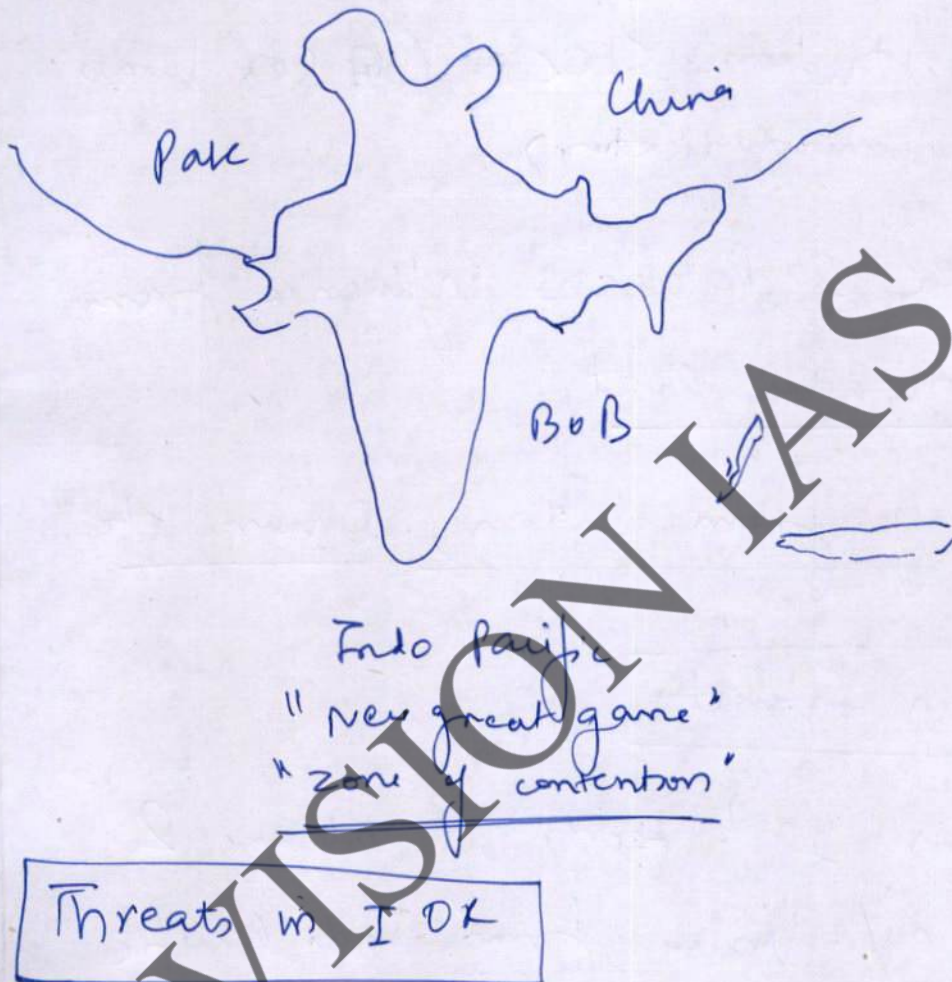
- Improved surveillance network against fraud & currency crime NTSC, NIA etc
- PMLA provisions supported by ITC eg tracking of digital trail etc
- KYC norms enforced,
- uncover shell companies, improved audit & surveys

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)

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- (1) Non-traditional threats
 - piracy
 - smuggling
- (2) China angle
 - "string of pearls" strategy
 - blockade policy
 - wolf warrior diplomacy

(3) Andaman Security dilemma

↳ Chinese aggression with
Mallaca Strait

↳ obstruction SLOCs (Sea lanes of communication)

(iv) QEC & Pakistan's influence from
Gwader port

Piracy from Sudan, Oman etc

Indian Interest

→ Our 90% trade by volume &
80% value from Indo pacific

→ Polymetallic nodules, resources,
minerals (our EEZ)

→ open trade & free & open
Indo pacific

Measures

↳ Sagaomale
↳ Quad

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