



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. : 1026942

अभ्यर्थी का नाम/Name of Student : Garima Mundra

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27 August 2023

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

केंद्र
Centre

Delhi
(Bhai Joga Public School)

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.

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
परीक्षक के हस्ताक्षर Signature of Examiner(s)	

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

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



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Time Allowed: **Three Hours**

अधिकतम अंक: 250
Maximum Marks: 250

प्रश्न-पत्र संबंधी विशेष अनुदेश

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions.

There are **TWENTY** questions printed both in **HINDI** and in **ENGLISH**.

All questions are compulsory.

The number of marks carried by a question/part is indicated against it.

Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one.

Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.

Keep the word limit indicated in the questions in mind.

Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1.

खाद्य सुरक्षा के विभिन्न आयाम क्या हैं? इन आयामों के मद्देनजर खाद्य सुरक्षा सुनिश्चित करने के संदर्भ में भारत की स्थिति का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

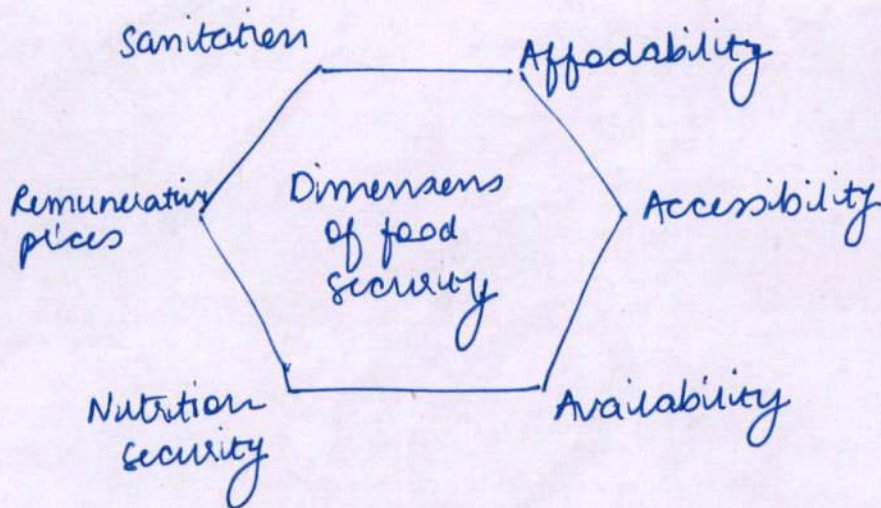
What are the different dimensions of food security? Examine India's status in terms of ensuring food security with regard to these dimensions. (Answer in 150 words)

10

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

As per Niti Aayog, every 1% increase in malnutrition can lead to 2-3% decline in productivity and GDP.

This makes food security imperative.



India's status in ensuring food security

Dimension	Achievement	Lacunae
① Affordability	- National food security act - free food grains to 75% rural & 50% urban households	- vagaries of nature and volatility of prices Eg - Tomato - focus on rice-wheat in PDS, no diversity of diet

② Accessibility

- Fair price shops in districts.
- focus on kisan rat, transport and marketing assistance

40% of food produced is wasted
(NITI Aayog)

③ Availability

- Buffer stock norms of FCI.
- open procurement scheme.

36% of total storage capacity required available

④ Nutrition security

- Inclusion of millets in PDS
- POSHAN 2.0

- Rice-wheat norms
- 35% stunting & 20% wasting (NFHS 5)

⑤ Remunerative price

- MSP on 22 major crops

- only 0.66% of oilseeds procured
- market distortion

⑥ Sanitation

- 100% ODF status

- behavioural change required

Way Forward

→ Shanta Kumar Panel: FCI reforms and involvement of private player

→ Ashok Gulati focus on cash payments

Food security is imperative for idea of Sahi Poshan, Dish Roshan

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

As per WEF, 10% of global GDP will shift to blockchain based technology, while regenerative AI is growing at 35% CAGR.

Potential of technology to transform agriculture

① Blockchain

→ Important for digitisation of agriculture records - lessen disputes (66% in district courts)
For eg - Suamitra can be linked

→ Direct Benefit transfers without leakages (CAGR - 25% miscalculations in transfer)

For eg - Niti Aayog testing blockchain based transfer of fertilizer subsidy

→ open system for formation of Agistack

② Chat GPT

→ solve farmers needs for expert advice

For eg - best time of sowing

→ can be made available in vernaculars
(not one size fit all approach)

→ efficient utilisation of resources
- convenience of communication

③ other technologies

- drones: for spraying pesticides
- biotech: resistant crops (eg - Bt cotton)
- nanotech: nano urea

Challenges

- limited digital literacy of farmers (only 10% digitally literate)
- internet penetration in rural areas low (37% icube report)
- small & marginal farmers (86%) don't have enough resources

Schemes like SensAGRI, e-kisan, kisan
Vikas Kendras (KVKs), e-SAGIU etc.

can help usher in the 'evergreen revolution'

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 हशिफ में
 नहीं लिखना
 चाहिए
 Candidates
 are not
 to write on
 this margin

De-dollarization refers to the process of limiting usage of dollar in world trade and diversifying currency options

Factors leading to de-dollarization

① Need for more stability

→ Countries prefer a stable value for their own currency to reduce forex volatility

② monetary policy tightening by US led to depreciation of all major currencies around the world.

③ currency nationalisation

Exeg - internationalisation of rupee

④ emergence of other strong currencies

Exeg - china using RMB for its trade

⑤ Diversification of currency baskets

For eg - Asian clearing union, use of Vostro account for trade with Russia.

Dominance of dollar

Dominance will be hard to lose due to following

① Major currency for international trade

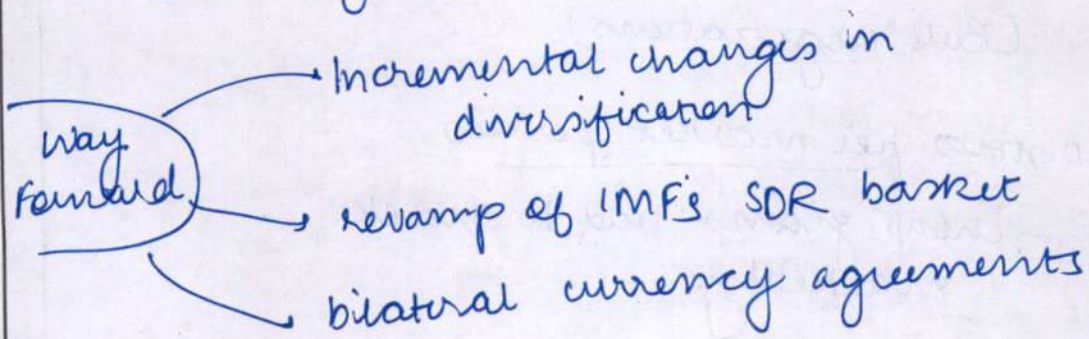
For eg - 86% of India's imports and exports conducted in dollar

② Sovereign backing

US government securities are one of the most trusted

③ Resistance by Bretton Woods Institute to change status quo

④ No other strong alternative (Reliability of China low)



It is time for a revamp of global economy in light of the polycrisis.

4.

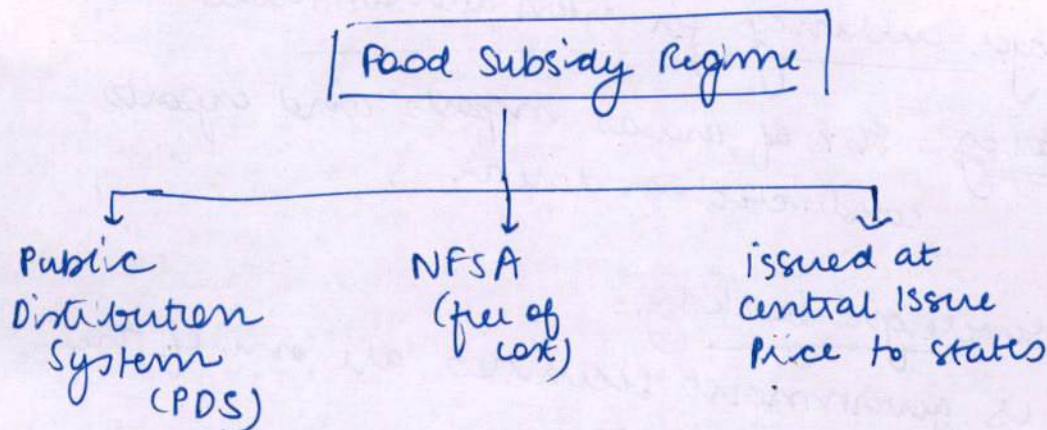
विकसित देशों द्वारा भारत पर खाद्य सब्सिडी व्यवस्था में बदलाव करने के अत्यधिक दबाव के बावजूद, भारत के लिए निर्धन व्यक्तियों हेतु अपना नीतिगत समर्थन बनाए रखना एक उचित कदम होगा। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

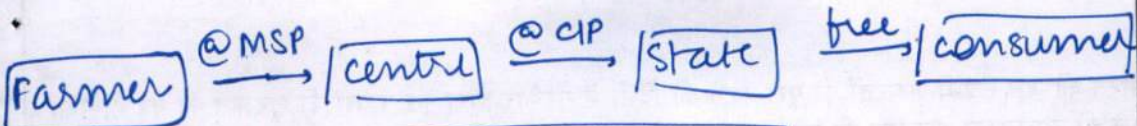
उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

In the fiscal year 2021-22, India spent ₹2 lakh crore on food subsidy.



Pressure from developed countries

- ① In violation of WTO's amber box
- 15% limit for developing nations
- ② India resorts to peace clause
(Bali negotiations)
- ③ distorts free market policies
- cheap grains lead to black marketing
- ④ Harms foreign trade
- Reduce viability of other countries products



Food subsidy cycle

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

Mist in India's policy support

- ① Limited purchasing power of poor
For eg - multidimensional poverty at 167. (Oxford)
- ② ensuring nutrition security
For eg - Global Hunger Index - 107/121
- ③ Non-tariff barriers of foreign nations
- makes imports expensive
- ④ Right to Food - recognised in UDHR
- ⑤ realization of demographic dividend
- productive capacity of people

Way forward - Balance

- Shantakumar Panel - Reduce coverage from 75% to 30% population.
 - Increase from 5kg to 7kg / person
- SC (PUC case) - open fair price shops all days
 - distribute free of cost

The government's mission to embark on SDG 2 of zero hunger makes it imperative.

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)

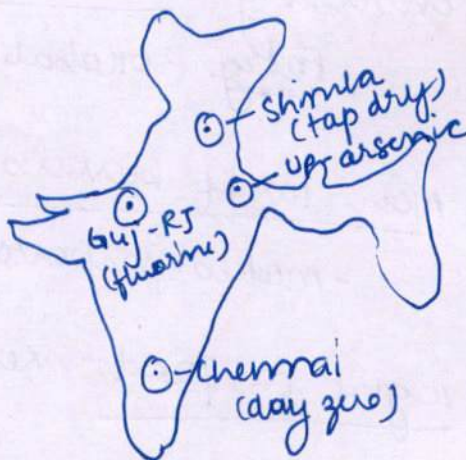
Several initiatives have been taken by the government towards addressing India's water needs, but the issues of water availability and water quality still warrant prioritised intervention. Discuss. (Answer in 150 words)

10

As per IPCC 6th Assessment Report, Indian cities will face ~~stret~~ severe water scarcity by 2035.

Initiatives taken by government

- ① Atal Bhujal Mission
- ② National Watershed management Programme
- ③ Jal Jeevan Mission - functional tap water by 2024
- ④ Jal Shakti Abhiyaan - catch the rain
- ⑤ Per drop more crop - Kishu Srinagar Yojana.



Water woes

Persisting issues

I. Water availability

→ Reaching day zero at major metro cities
(13/17 India's cities are water stressed)

→ Largest extractor of groundwater
(Almost 18% critically exploited)

→ drying out of lakes, borewells →
excessive heat (280 heatwave days
in 2021)

→ limited rainwater harvesting

II. Water quality

→ 60% of surface water unfit for consumption
(Niti Aayog)

→ limited sewage treatment plants
Eg. Delhi - 2% of Yamuna's stretch
- 70% pollution source

→ industrialisation

Eg. - leather industries in UP.

Prioritised interventions needed

- revival of traditional storage systems
Eg. - Zing (Ladakh), Johads
- sewage treatment monitoring
(timeline for industries)
- Revival of stepwells under
Jal Abhiyaan
- continuous water testing.

We need One Water approach for a
multi-dimensional result.

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

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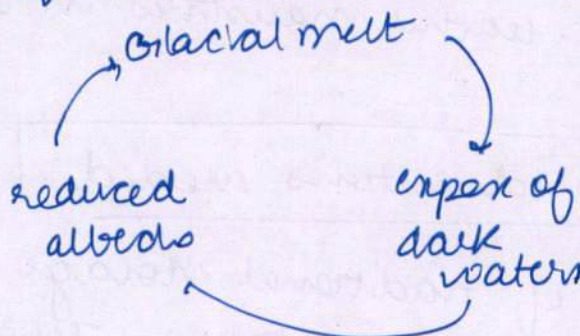
As per IPCC report, glacial melting is happening at an unprecedented rate

Drivers of glacial retreat in Arctic

① Arctic amplification

- warming 2 times faster than rest of earth

② Negative feedback loop



③ Increased human presence

- tourism, scientific purpose → pollution

④ Deposition of black carbon

⑤ depletion of ozone layer - more warming

⑥ rising land & sea temperatures
(0.6° ↑ in ocean temperatures)

Potential impact

- ① Weakening of ocean currents (AMOC)
 - negate global heat balance
- ② sea level ^{rise} rise
 - by 10cm in Indian ocean
- ③ geopolitical warfare
 - opening of new trade routes
- ④ harm to habitat of Arctic species
 - polar bears, chin pine
- ⑤ northward shifting of species
- ⑥ increase in zoonotic disease (happened in icebergs)
- ⑦

Way forward

- declare Arctic as common good
- implementation of Arctic Treaty in letter and spirit
- usage for scientific purpose

SDG 14 of climate action needs special focus on ~~the~~ Arctic pole.

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

Recently, companies like Space X, Blue origin took space flights, making space tourism a reality, beyond Karman line.

Challenges associated

① 'Haves' and 'have nots'

space tourism is expensive and only high networth individuals can access

② Increasing commercialization of space
Reduce its scientific significance

③ No fixed guidelines

Responsibility fixation difficult

④ Increasing space debris (Kessler syndrome)
pose threat to the mission

(More than 23000 debris ≥ 10 cm)

⑤ Usage of funds in important areas
of social welfare

⑤ lack of habitable space in the difficult conditions

Measures to address challenges

- ① Fix guidelines
- Outer Space Treaty, 1962
- ② space hospitality
eg - own setting up hotels
- ③ Reduce cost and increase affordability
- ④ use of reusable launch vehicles
(space sustainability)
- ⑤ PPP agreements
- ⑥ Inter-national collaboration
eg - hypex mission

India's National space policy and increasing private sector role can help it to take advantage of the emerging sector.

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

CAR-T cell therapy involves using
patients' own T cells and infusing
antigens to build immunity.

Game changer for cancer

- ① Targeting cancer cells directly
- ② No foreign antigen, body's own immune system
- ③ development at faster pace
- ④ lesser chances of rejection
- ⑤ enough research available.

Overcome limitations of CRISPR

Limitations

- chances of gene editing
- lesser acceptance

CART-cell

harmfulness
reduces
acceptance

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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

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Extremist organisations have moved from traditional means to modern means of warfare, bringing in a digital.

New and emerging technologies

- | | |
|------------------------------|---|
| ① Radio communication | radio phones used in 26/11 |
| ② Blockchain | fuel money laundering |
| ③ IoT | can lead to interconnected warfare |
| ④ 3D printing | of arms and weapons |
| ⑤ cloud computing (dark web) | data analysis beyond legal eye |
| ⑥ social media | recruitment (ISIS Twitter)
lone wolf attacks |

Demand concerted global efforts

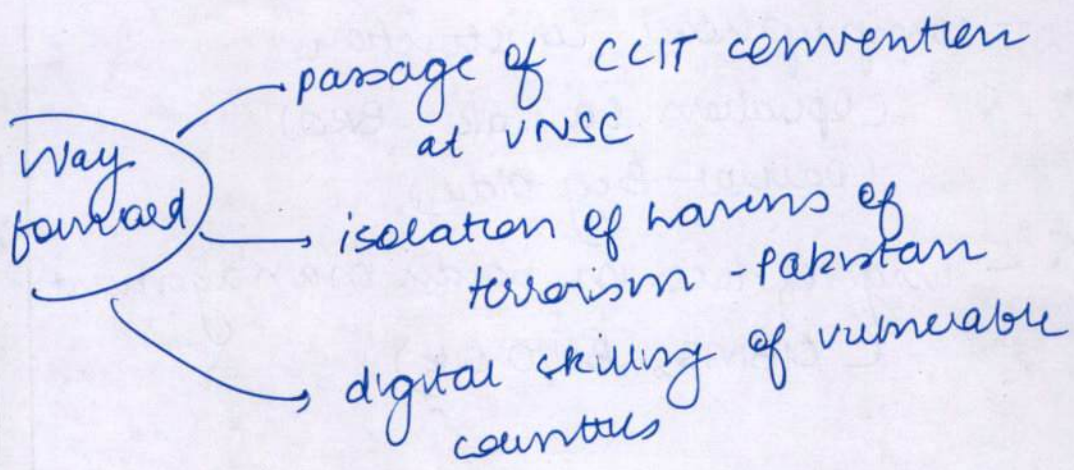
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① Transnational crime
- technology has erased national borders
eg - sympathy for Sudan War

② Synergies of action
- cumulative manpower

③ Utilization of multilateral bodies
- FATF, UNSC

④ invisible threats
- focus on international R&D



The Christchurch call of Action for
private and public efforts is a right step

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

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The 2020 border clash between India and China has brought border security in limelight.

Ramp up of infrastructure

① India

- Vibrant village programme for development of border areas
- ramp up road construction
(Operation Dantak - BRO)
(Daulat Beg Oldie)
- usage of tech in border management
(CIBMS, BOLD Qit)

② China

- construction of villages in Arunachal border
- railway line for faster deployment

Role of ITBP

Indo Tibetan Border police is one of the
seven central forces, guarding
India's inner border

positives

- border intrusions checked
- goodwill among locals
- first responders
- also for disaster management
- illegal migrations
- grievance redressal of locals

negatives

- lack of coordination with other forces - SSB, BSF
- limited capacity building
- limited funding
- human work-life balance low
- clash with Army

The recommendations of Madhukar Gupta committee for border management can supplement reforms in ITBP.

11.

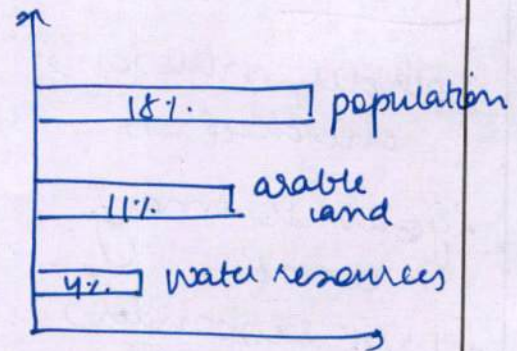
क्या आपको लगता है कि भारत को 'भूमि उत्पादकता' के सिद्धांत को छोड़कर 'सिंचाई जल उत्पादकता' के सिद्धांत को अपनाने की आवश्यकता है? अपने उत्तर का औचित्य सिद्ध कीजिए। यह बदलाव करने में कौन-सी चुनौतियां विद्यमान हैं? व्याख्या कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

India has twice the arable land compared to china but achieves 50% the productivity. This demands a shift in outlook

Need for shift from land to irrigation water productivity



① land productivity

→ limited availability of land

→ degradation of quality - approx. 30% land has been desertified (eg. Chambal)

→ land size very small (Avg 1.08 hectares holding)

→

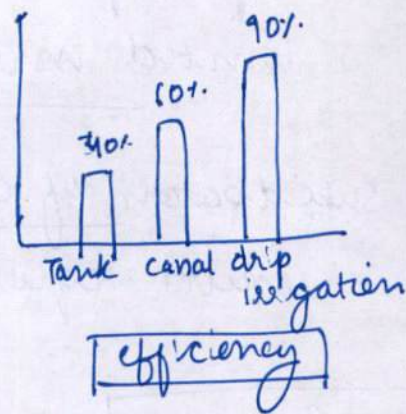
② Need for 'irrigation productivity

→ over-reliant on rained agriculture
(approx 52% of total)

→ usage of canals - less efficient

→ over-irrigation -
leads to soil
salinity and
degradation

→ cost effective
than focus on
land productivity



Challenges in making the shift

① limited awareness of farmers on
benefits of 'irrigation water' productivity

Eg. Adoption of micro irrigation only
at 10%.

② Requires one-time capex cost
(network of pipes)

③ small and marginal farmers
(86%) hesitant

④ Government schemes biased towards land productivity
(eg - land reforms post independence)

⑤ Need participation of private sector - limited investment in infrastructure

⑥ subsidisation of electricity harms results required.

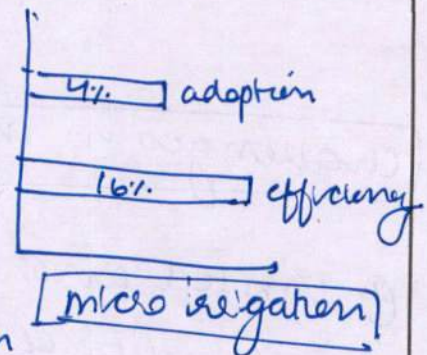
Way Forward

→ information campaigns

→ invest in technologies for irrigation productivity

→ international collaboration
(eg - Israel)

→ change in policy
- removal of electricity subsidy to DBTs



The productivity of agriculture will be a focus on both Jal and Jameen

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

India has set a target of 50% production of energy from renewables in the recent Glasgow summit. Green Hydrogen is Key

Role in unlocking energy security

- ① Reduce import-reliance
currently around 80% of oil and 53% gas imported.
- ② Reduce emissions
8/10 cities with worst air quality (IQAir report)
- ③ Generation of employment
- creation of new jobs, green jobs
- ④ Fulfillment of international commitments
- Panchsheel at COP 26

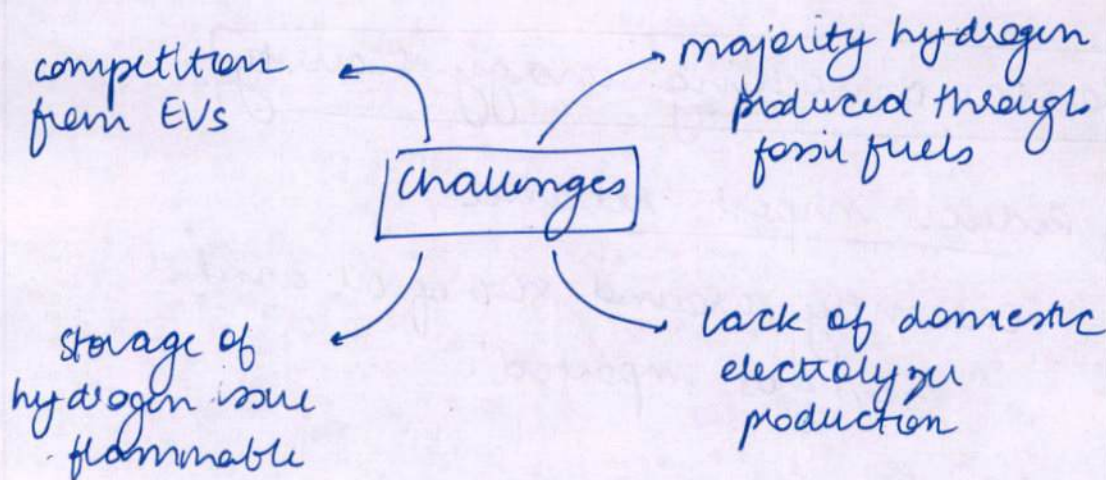
⑤ Rising energy demand

India - 3rd largest producer and
2nd largest consumer of electricity

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⑥ Benefits of hydrogen

- abundant in nature
- zero emissions
- multivariate use - fuel cells
-



National Green Hydrogen Mission

Features

Summit of
production
by 2030

creation of
50 lakh new
jobs

Role in achieving energy security

① Focus on green energy

- produced from electrolyzing water

② reduce usage of coal-based power generation
(currently around 70%)

③ creation of National Green Hydrogen Fund
→ subsidize production domestically

④ self-reliant in energy production
→ conserve forex

⑤

Way forward

- Bring PI scheme for production of electrolyzers
- Invest in R&D currently at 0.7% for green hydrogen
- Test runs for safety CH-CNG buses in Delhi

The Green Hydrogen Mission is a stepping stone towards India's INDC.

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)

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15

The recently formed code on wages has mentioned 'living wage' instead of minimum wage.

living wage refers to the wage required for a comfortable standard of living and differs from area to area.

Benefits of adoption

① From 'base minimum' to rights based approach

minimum wage was not sufficient to maintain a quality life

② Factor in differential costs between areas

Inflation differs from state to state
for eg petrol prices in Delhi v/s Ahmedabad.

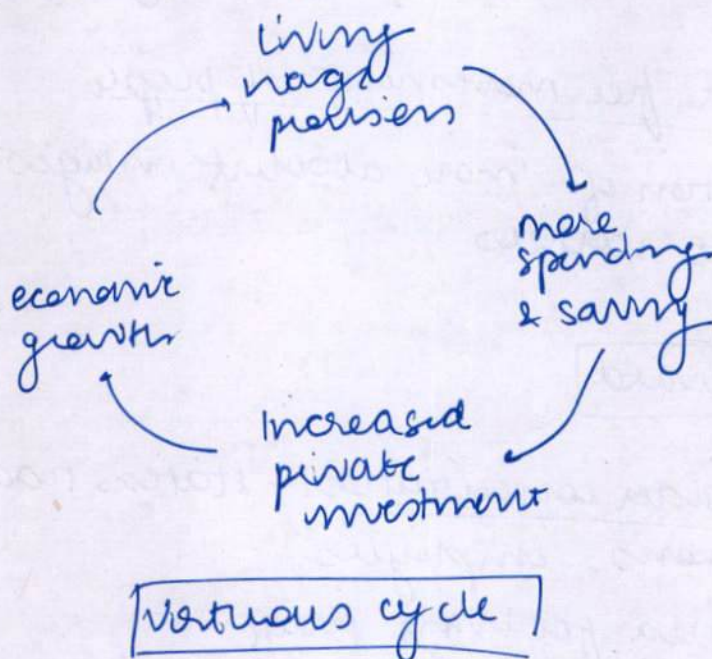
③ Not a one-size fit all approach

A uniform national minimum wage is unsatisfactory

④ Increase human capital

With more income in hand, improves standard of living

⑤ Fuels economic growth



Constraints in living wage

① Subjectivity of decision

can be manipulated by data-dressings

② lack of state-wise inflation data
common CPI and WPI calculations

③ non-adoption by states

Rules have not been formed by
majority of states

④ Difficult to keep track of trends
- will lead to frequent changes

⑤ Hampers free movement of people

Perception of 'more absolute wages'
attract workers

Way forward

- Stakeholder consultation - states, trade unions, employers
- formula for living wage
- defined revision of wages timeline
eg. every 5 years
- learn from international practices

The 'living wage' has been suggested by
ILO for basic labour rights. Need to be
adopted in letter and spirit.

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)

The Union Budget is an estimate of the country's income and expenditure for the coming fiscal year, divided into revenue and capital budget.

Affects almost every sector

- ↳ major schemes outlay
(eg - MGNREGA allocation increased for covid)
- ↳ gender dimensions
(gender budget since 2005-06)
- ↳ direct and indirect impact
(eg - stock market volatility on day of budget)

Budgetary processes - challenges

- ① word dear budget formation with limited public consultation.
for eg - only lobby groups like FICCI consulted

② post budget monitoring

- Parliamentary committees only a post mortem exercise

③ lack of transparency

Eg - Budgets in Australia open for public review

- ④ similar practice followed from national, state and local municipalities

Budgetary policies challenges

- ① skewed budget spending - March Rush
- ② Difference between actual and estimated expenditure
- ③ Ad hoc announcement of schemes
- ④ No real time monitoring of schemes or allocation usage
- ⑤ Public opinion not a factor for revamp of budget

But public scrutiny has been increasing due to

- ↳ media channel debates
- ↳ dashboards and portals like Pragati for tracking
- ↳ consultations by government on major segments

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Way forward

- ① Adoption of open-budget policy
- ② focus on outcome-based budget
(helps realize impact of schemes)
- ③ Involvement of public in parliamentary committees
- ④ Adoption of public finance management system

The budgeting exercise is crucial for achievement of accountable and transparent government — Gandhi's Surajya.

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

India is the world's largest milk producer,
with 'milk' as its biggest crop.

Transformation from milk deficit → surplus

① Government efforts

- operation flood led by Verghese Kurien transformed milk industry

② success of cooperatives

Ex - Amul in Gujarat, Nandini in Karnataka

③ livestock availability

- largest number of livestock (livestock survey)

④ feminization of the sector

- involvement of women for milking cows (~60% of dairy farmers)

⑤ Increasing demand

- rising population (18% of the world)

⑥ Increased value addition

- Milk based products like cheese, ice cream - popular choice

⑦ Additional source of income

- Dairy industry requires limited area which is suitable for the small farm size (1.08 hectares)

Productivity of dairy animals - concern

① Limited professional vets

- India has only 4 vets per 10000 cows

② Limited availability of feed and fodder

- compounded by problems of overgrazing

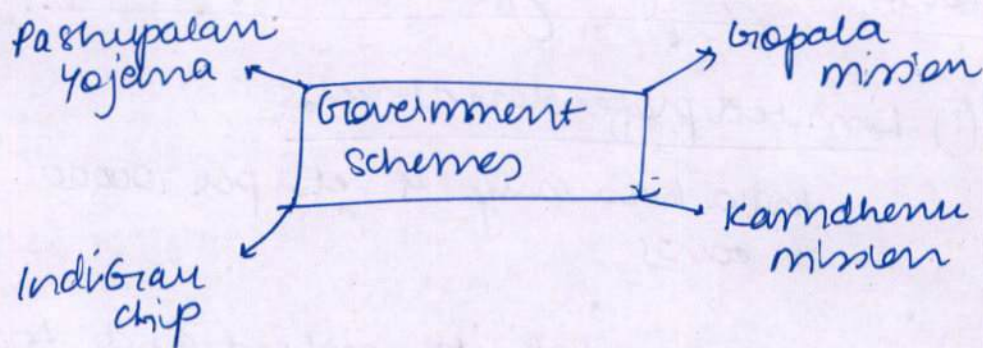
③ Artificial insemination - low adoption

- Hesitancy for new technology

④ Foreign breeds of cows have neglected indigenous breeds
For eg - Jersey cows

⑤ Other concerns

- limited capital available for adoption of new technology, new livestock (70% households indebted)
- increasing diseases - foot and mouth disease of cattle - limited vaccination
- inability to adopt new sources of milk - camel, goat



way forward

- increase number of trained professionals (vets) - new courses
- increase feed quality and quantity
- vaccination of cattle programme
- increase final share of dairy farmers in milk prices - more capital.

India's ability to become the largest milk producer can play a big role in doubling farmer's income (Dahwai committee)

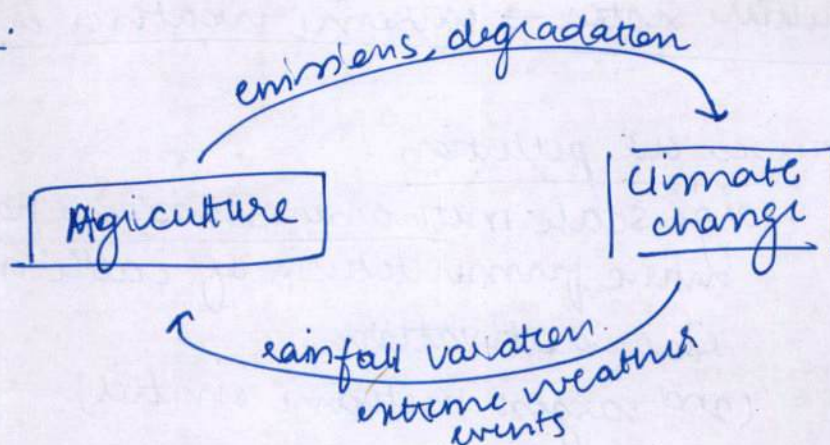
जहाँ एक तरफ जलवायु परिवर्तन, फसल की विफलता के लिए जिम्मेदार है, वहीं दूसरी तरफ चरम मौसमी घटनाओं के लिए कृषि क्षेत्रक स्वयं आंशिक रूप से जिम्मेदार है। विवेचना कीजिए। भारत में कृषक समुदाय की प्रत्यास्थता को सुदृढ़ करने के लिए राष्ट्रीय कृषि आपदा प्रबंधन योजना के तहत क्या रणनीति अपनाई गई है? (उत्तर 250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

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As per IPCC AR6 report, agriculture is both a victim and cause for climate change, and contributes 18% of total GHG.



Climate change → crop failure

- ① Rising temperatures (avg rise of 0.7°C) → causes heat induced stress for plants
eg. wheat crop destroyed by heat wave in February
- ② LCV rainfall (irregular, complex and uncertain)

- low replenishment of reservoirs

-  rainfed agriculture

③ increasing frequency of disasters

eg - Biparjay cyclone destroyed standing crops

Agriculture sector → extreme weather events

① causes air pollution

- large scale methane emissions from enteric fermentation of cattle and rice cultivation
(2nd largest methane emitter)

② Water pollution

- runoff from agri-lands consist of chemical fertilizer

③ Soil pollution

- only 0.1% pesticide reaches target, other leaches in soil → desertification

④ salinisation of soil due to over-irrigation
→ increased frequency of droughts.

National Agriculture Disaster management Plan

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- ① Insurance from variability
Only 35% farmers have insurance (NABARD)
- ② spreading awareness
- crop diversification, micro irrigation
- ③ spending on research & new techniques
- system of rice intensification (SRI)
for lesser emissions
- ④ building resilience of farmers
- alternative non-farm income
source (PM KUSUM), seed banks
- ⑤ decarbonize the sector
- adoption of sustainable agriculture
- ⑥ quick recovery and rehab post disaster
- remuneration

The government's adoption of National
Mission on sustainable agriculture
is a step in the right direction.

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)

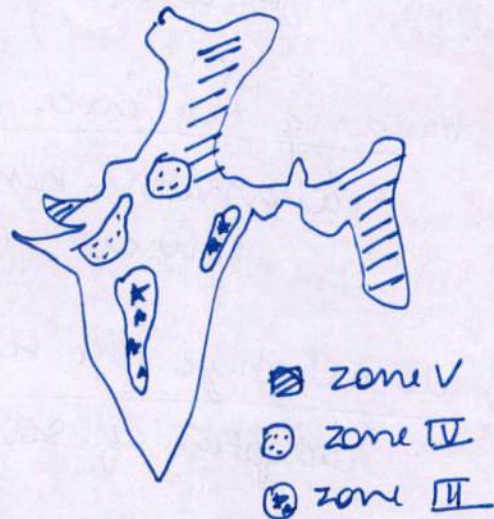
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Recently, Delhi was witness to multiple mini-quakes of small intensity as it lies in zone IV.

Vulnerability of regions

① Earthquakes in Himalayas

- pushing of Indian plate into Eurasian plate by 0.1 cm/year
- convergent boundaries send shock waves
- major fault lines (Indus fault, Karakoram fault) seismically active



Vulnerability to earthquakes

② zone IV - Delhi

- closer to the Himalayan belt (deep seated earthquakes but high seismicity)

- Gujarat : Kutchh region
Vikrol fault passing

③ Human induced earthquakes

- hydropower plants
- minings
- frequent landslides

Both occur in Himalayas -

Institutional measures to mitigate loss

① Zonation by Geological survey
(4 zones from low risk to high risk)

② Early warning dissemination
(Indiaquake App by MOES)

③ retrofitting of buildings and traditional construction

- Eg - National Building code
- Ekra construction in Assam

④ capacity building

- stationing of NDRF forces
- usage of tech to look for stuck people (drones)

⑤ spreading awareness

- Dep. held & cover method of NDMA

Significant gaps

① Reactive approach, not proactive approach

- earthquake prediction methods not accurate

② Inherent construction in mountains (Mahesh chandra committee)

③ limited funding

- SDRFs not fully utilized
- NDMF not formed

④ lack of resilient buildings - no retrofitting

Way Forward

- inter country convergence on earthquake prediction
- National Mission on sustainable Himalayas
- Disaster-resilient infrastructure (CDRI)

We need to move from 3R (React, respond, Rehab) to 3P (Proactive, prepared) approach

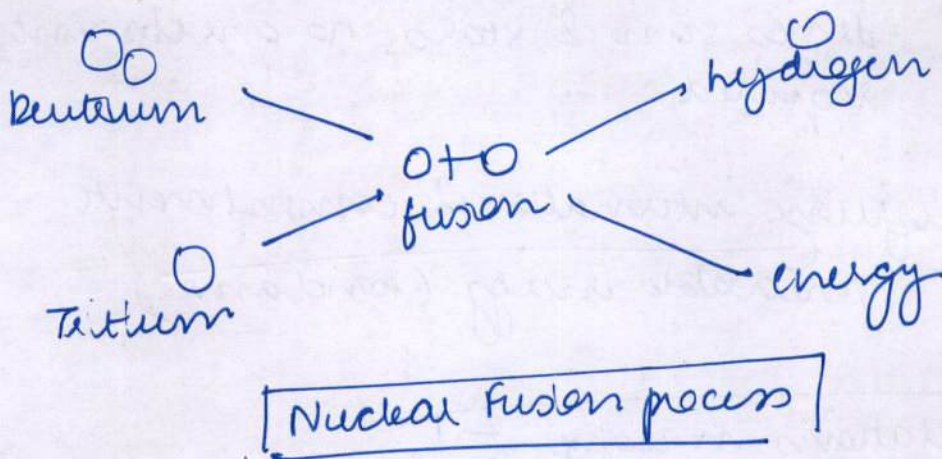
हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों में दीजिए)

Recently, scientists announced net energy gain in nuclear fusion reaction, which is considered as a major scientific breakthrough for the future of clean energy. What are the advantages of nuclear fusion based power generation? What are the limitations in using it to generate electricity at a commercial scale? (Answer in 250 words)

उम्मीदवारों को इस दृष्टि में नहीं लिखना चाहिए
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Nuclear fusion refers to coalition of two atoms to produce energy



Advantages of nuclear fusion

① clean source of energy

- only hydrogen produced as a by product

② No radioactive waste

compared to nuclear fission reaction (produce enriched uranium)

- ③ Immense amount of energy
- 10 times more than fission reactions
- ④ Rare material easily available
- Deuterium is not as limited as Uranium
- ⑤ Natural process
- derives sun & stars, no enrichment required
- ⑥ Fulfilling international commitments
- renewable energy (sustainable)

Limitations in using it

- ① Fusion reaction harder to sustain for long period
- require high temperatures and pressure
- ② limited commercial viability as of now
- Fusion already in use (1.2% of India's energy)
- ③ can lead to breakdown of plant

④ Limited acceptance

- risk factor and negative perception of nuclear energy (Fukushima disaster)

⑤ Alternative sources of renewables

- limited investment in nuclear research

Way forward

- collaboration on international projects - research sharing
(eg ITER France)
- Address misinformation about fusion reactions
- Niti Aayeg's small modular reactor can be right approach.

India has adopted target of 30% ^{increase in} nuclear energy under LT-LEDS - Nuclear fusion is key.

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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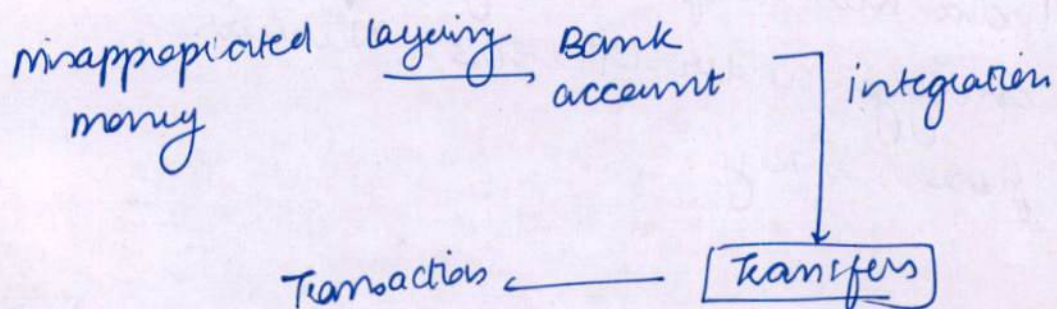
उम्मीदवारों को इस खंड में नहीं लिखना चाहिए
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The Prevention of money laundering Act (PMLA) was established to tackle black money menace, which forms 10% of global GDP as per WEF.

Recent amendment

- ① Assumption of guilt before conviction
- ② Power to ED (Enforcement Directorate) to search before official FIR
- ③ expanded list of predicate offences.

Menace of money laundering - causes



- ① limited ~~coordination~~ coordination with foreign nations (Not signed Vienna convention)
- ② easy tax laws of some areas (Cayman island)
- ③ Bank secrecy laws (Switzerland)
- ④ Increased sophistication and usage of ICT - megabyte money
- ⑤ Use of skilled professionals in laundering
- ⑥ Increasing black money (~ 60% of official)

Efficacy of PMCA

- ① Gives discretionary power to ED to act swiftly
(reduce bureaucratic red tape)
- ② Puts national interest first
(power to arrest in states)
- ③ Increased coordination with foreign agencies (Interpol)
- ④ Fast track courts for dismissal of quick justice

Challenges of PMLA

- ① Assumption of guilt -
violation of spirit of 'innocent
until charged'
- ② vague terms in predicate offences
- ③ Used as tool of harassment - majority
cases against opposition
- ④ low conviction rate - 0.5%.
- ⑤ clash with 'state police' - violates
spirit of federalism

Way forward

- filing of ECIR report before arrest
- clarity on list of offences
- more autonomy - reduce centre's
discretion
- information sharing with state
police and international agencies.

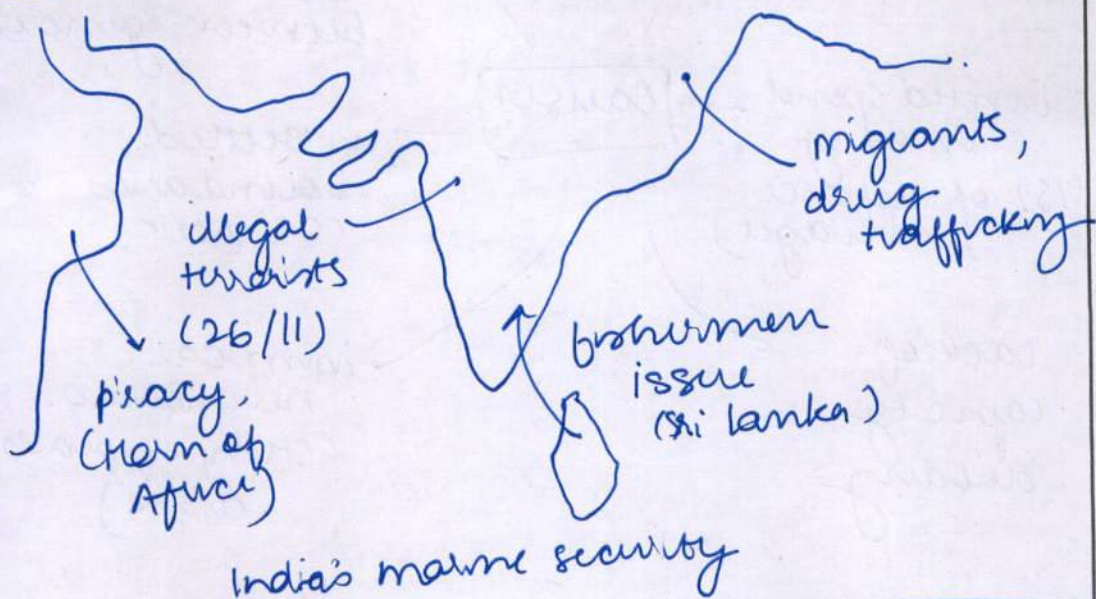
ED cannot be a 'caged parrot' like
CBI and PMLA needs more efficacy.

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 long coastal border, making it vulnerable to security threats.



security threats present

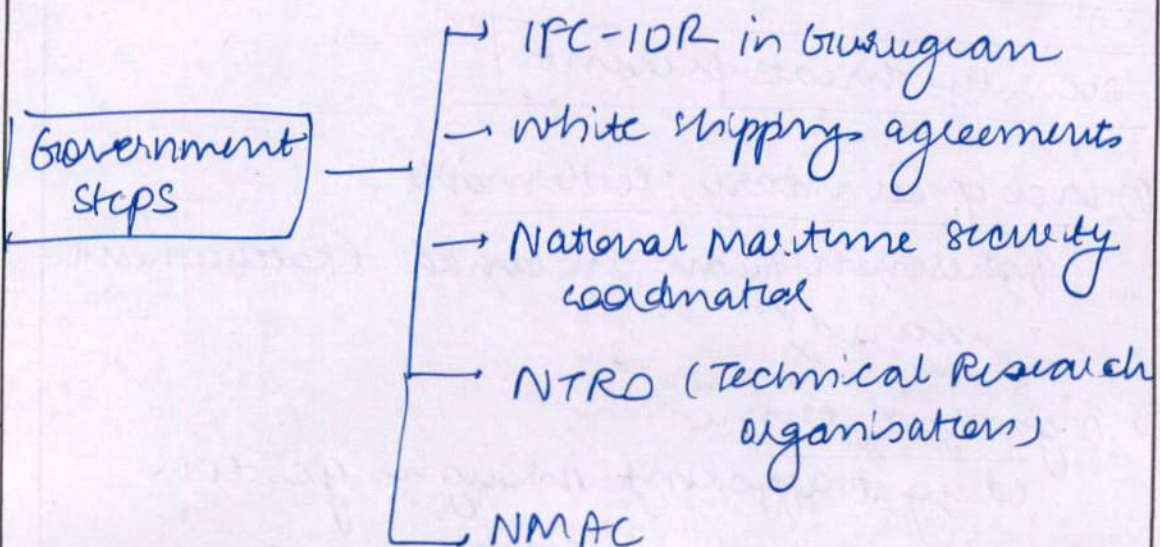
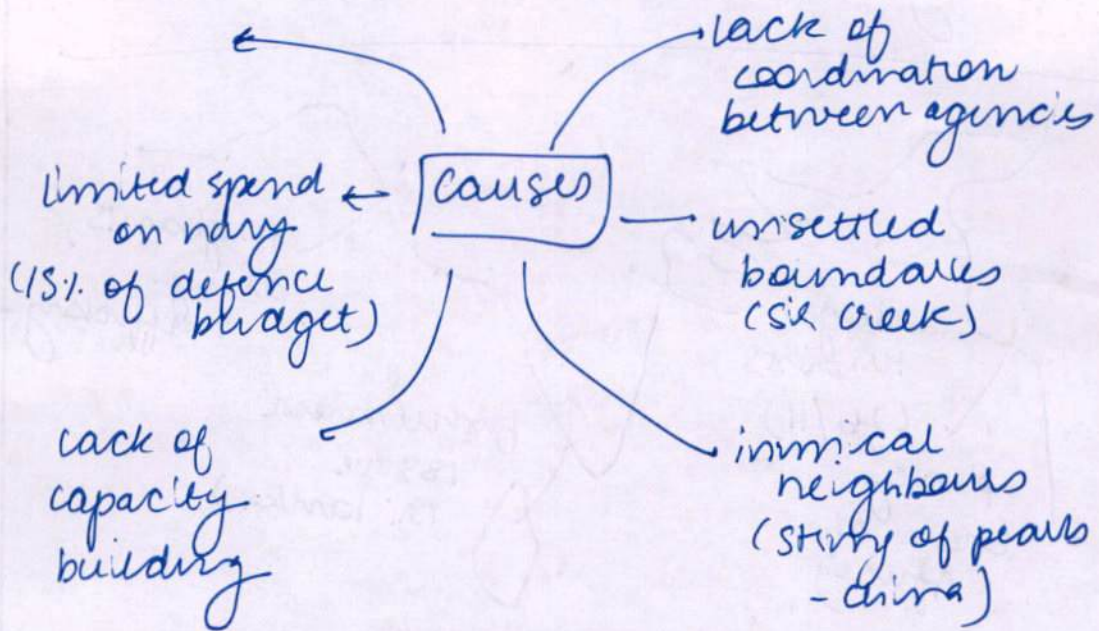
- ① lack of boundary settlement
fishermen from Sri Lanka (Katchatheenu island)
- ② organized crime
(drug trafficking through golden triangle and crescent)

③ Horn of Africa - piracy route

④ Blockage of critical choke points
- Malacca strait

⑤ China's military presence

eg - Gwadar & Hambantota port



Strategy to deal with threats

- ① Increased budget of navy
- growing significance of navy
- ② Bilateral and multilateral military exercises
- show of strength
eg - Vajra Prahar, Malabar
- ③ Increased coordination between agencies
eg - coast guard, navy.
- ④ Indigenous technology
eg - INS Vikrant carrier
- ⑤ Boundary settlement with neighbours
eg - Sri Lanka bottom trawling issue
- ⑥ Capacity building
- Scorpene submarines, coastal guards

India is moving from a land based to sea based thinking. Maritime security is key.

SPACE FOR ROUGH WORK