



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. : 1492371

अभ्यर्थी का नाम/Name of Student : Muskan Srivastava.

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English.

तारीख

Date

27th Aug. 2023

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

केंद्र

Centre

KANPUR

CENTER CODE (27)

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	महत्वपूर्ण अनुदेश	Important Instructions
	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।	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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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

According to World Bank,
food security means availability of nutritious food to everyone and all the time.

Dimensions of food security

① Availability

- ↳ physical availability of food crops
- ↳ related to agri. production
- ↳ nutritious food availability

② Accessability

- ↳ ~~some~~ access to food even in remote areas

③ Affordability

- ↳ in reach of poorest of poor

④ Stability

- ↳ supply must not be disrupted even in exceptional situations

India's Status

(1) Availability → India is largest producer of cereals in world.

However,

- ↳ lags in pulses production → sources of protein
- ↳ nutritious food like millet
- ↳ climate change led decline in productivity

(2) Accessibility

- ↳ working PDS system network across the country
- ↳ However, issues of migrant and refugees → unable to access food.

(3) Affordability

- ↳ NFSA → cereals at ₹1, 2, 3 kg.
- ↳ this fee ~~was~~ waived at CoVID and one more year
- ↳ However, inclusion & exclusion errors

(eg) death of child in Jharkhand on non-connection of Aadhar with Ration card.

(4) Stability

- ↳ presence of food even in times of disaster and lockdowns

Thus, India's food security is not a issue wrt to availability and affordability but wrt management of food and hidden hunger.

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

Human history is filled with example on how each modern technology can transform agriculture. (Eg) mechanization increased productivity, HYV seeds doubled the production. etc.

New technologies like ChatGPT and blockchain can transform agriculture into a more efficient and sustainable sector

(1) AI tech especially Chat GPT

↳ helps in easy information dissemination to farmer

↳ helps in identification of pattern
(Eg) pest attack pattern etc.

↳ Automate responses

↳ (Eg) appropriate response triggered to farmers in case of hail storms etc.

↳ 24x7 monitoring of farm ⇒ raises efficiency & losses

(2) Blockchain technology

- distributed ledger technology with efficient record keeping
- help in digitization and conclusive land records keeping
- sustainable land use planning

उम्मीदवाते को इस छवि में नहीं लिखना चाहिए
Candidates must not write on this margin

(3) Other technologies

(Eg)

IoT

- Appropriate crop specific monitoring of variable
- can decrease inefficient use of fertilizer and irrigation
- real-time data collection for suitable agro-ecological planning
- Climate Smart Agriculture - using appropriate info

Way forward :

- (1) Building capacity of farmers for adoption of such technologies
↳ digital training
- (2) connecting farms with broadband
(Eg) Bharat Net
- (3) Securing data → indigenous servers

India needs a revolution in agriculture to feed its growing population

3.

वैश्विक अर्थव्यवस्था में वि-डॉलरीकरण की प्रवृत्ति में हालिया तेजी के लिए कौन-से कारक उत्तरदायी हैं? क्या आपको लगता है कि डॉलर का प्रभुत्व जल्द ही समाप्त हो जाएगा? (उत्तर 150 शब्दों में दीजिए)
What factors have led to the recent acceleration in the trend towards de-dollarization of the global economy? Do you think the dollar will lose its dominance anytime soon? (Answer in 150 words)

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

De-dollarization of global economy means decreasing the use of dollars in the international transactions.

Factors: —

(1) Covid 19

↳ lockdowns
↳ forced countries for bilateral transactions

(2) Reducing significance of USA in global economy

↳ rising emerging powers → (eg) China
pressing for use of RMB

(3) De-globalization or Restricted globalization trends

↳ coming up regional blocs

(eg) BRICS → contemplating for 'BRICS currency'

- ④ To protect from external crises → eg)
Russia - Ukraine war → FDI outflows
from developing nation.

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

Dollar dominance

It may not end any time soon, as:-

(1) $\boxed{> 65\%}$ international transaction still
in USD

(2) Most of the countries trade intricately
like with the USA

eg) India, → USA is largest partner.
China

(3) USA's dominance in economic
multilateral institutions

eg) IMF = 17% shareholding

(4) No real alternative

↳ eg) RNB → suspicion by other countries
Euro → crisis in Europe.

De-dollarization is a global
phenomena in contemporary world, it
provides India with an opportunity
to make INR a global currency

4.

विकसित देशों द्वारा भारत पर खाद्य सस्तिडी 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

According to developed countries, India's food subsidy falls under 'not allowed' category of WTO → Agreement on Agriculture.

India's food subsidy bill is much higher than the specified 10% limit.

Why Western Developed Countries pressuring

(1) Trade imbalance threat

(2) Reduces competitiveness of other countries agricultural products

(3) India dominant global exporters of agricultural products

↳ Eg Rice → largest
maize → 3rd largest

Merit in Retaining policy support

(1) Incentives to farmers → ~~good price~~

Farm subsidy and MSP

↳ reduces vulnerability

eg 86% of Indian farmers → small and medium farmers

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

(2) Ensuring food security

↳ large population to feed → 1.4 bn

↳ large poor population → 16% multi dimensionally poor

↳ PDS for accessibility in remote areas

(3) Large dependence of workforce on agricultural sectors

↳ provide livelihood to 48% workforce

↳ women empowerment → large participation of women in agriculture

Despite criticism, thus, India's continued policy support to its agricultural sector is a good step

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

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

India is a paradox of land of 1000 rivers and water scarcity.

Initiatives by govt to address water needs

→ Jal Teewan Mission

→ Jal Shakti Abhiyan

→ Atal Bhujal Yojana

→ Creation of new min: Jal Shakti

→ PM Krishi Sicheai Yojana

↳ PIM

↳ catch the rain

→ National Water Mission.

Issues of Water Availability and Water Quality

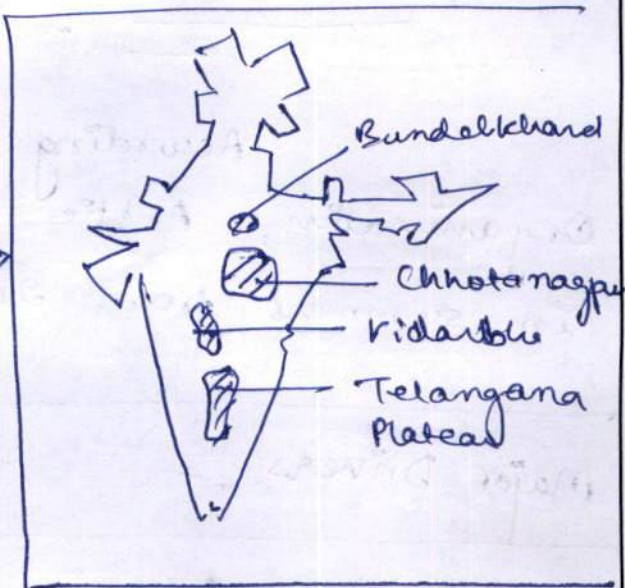
(1) Temporal variations

↳ ~~winter~~ → hydrology.

- ↳ early summers → droughts like condⁿ
- ↳ SW monsoon → flooding

② Regional disparities

- ↳ some regions chronic water shortages



③ Water Quality Issues

- ↳ Water contamination

- ↳ Groundwater

↳ Eg. Rising Arsenic levels in NW India

- ↳ Salinization → coastal areas

- ↳ Surface water pollution

↳ Eg. Yamuna flooding during 2021

Way forward

- (1) Addressing groundwater issues:

- ↳ declining GW Table & pollution

↳ rationalizing power subsidy

- (2) Afforestation across river flood plains

- ↳ flooding & droughts ↓

- (3) Traditional Knowledge application

↳ Eg. Gujarat's Jal Mandir

- (4) Rainwater harvesting and integrated agricultural planning

6.

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

What are the major drivers of glacial retreat in the Arctic? Describe the potential impact of the retreat of Arctic glaciers on the ecosystem. (Answer in 150 words)

10

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

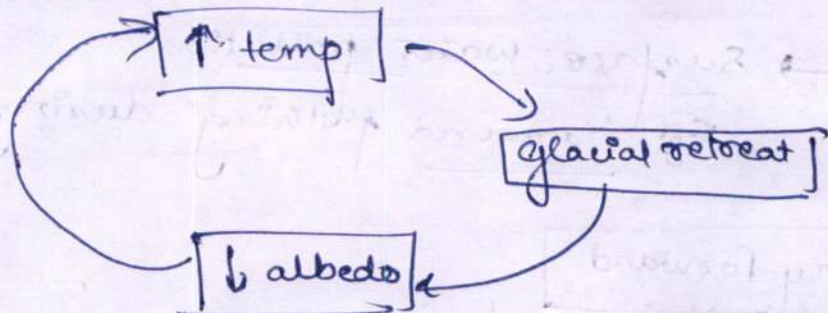
According to World Meteorological Organization, Arctic will be ice-free in summer from 2045.

Major Drivers :-

(1) Global Warming

→ leading Arctic Amplification

→ feedback mechanism



(2) Anthropogenic Incursions

→ Black carbon particles found in Arctic due to pollution

→ ↑ tourism in area (Ex) Greenland, N^o Norway

→ ↑ exploration for oil and gas

→ finding new trade routes across Arctic.

Potential Impact on the Ecosystem

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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1) On Hydrosphere

- increase in sea levels
- disturbance in salt budget of area
- ocean acidification → water as carbon sink
- Reducing speed of AMOC

2) On Biosphere

- loss of habitat for endemic species
 - polar bears, seals etc
- new forms of diseases
 - Ex) New worm found after thawing of permafrost

3) On Atmosphere

- changes in moisture condition of the areas
- variations in regional weather pattern

Arctic is one the ~~th~~ tipping point identified by IPCC.
Once crossed, will have widespread ramification across globe

7.

अंतरिक्ष पर्यटन, जिसे सीधे तौर पर एक साइंस फिक्शन फिल्म के रूप में देखा जाता था, अब बिना किसी बाधा के वास्तविकता बन रहा है। अंतरिक्ष पर्यटन से संबंधित चुनौतियां क्या हैं? इन चुनौतियों से निपटने के लिए क्या उपाय किए जा सकते हैं? (उत्तर 150 शब्दों में दीजिए)

Space tourism, which was viewed as something straight out of a science fiction movie, is now becoming a reality albeit not without hindrances. What are the challenges associated with space tourism? What measures can be taken to address these challenges? (Answer in 150 words) 10

space tourism is no more a fiction in aftermath of space X and Virgin Galactic flights.

Challenges Associated :-

(1) Cost

↳ average ticket \$ 200000
↳ not in reach of lower and middle classes

(2) Technology

↳ Reusable vehicles still in nascent stage of development
↳ safety issues

(3) Space ~~pot~~ related

↳ issue of space debris
↳ 'traffic jams' in space

(4) Pollution

↳ atmospheric pollution → GHG emissions
↳ exploitation of scarce resources for

Fuelling purposes of rocket

उम्मीदवारों को इस खण्ड में नहीं लिखना चाहिए
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Measures to Address challenges

(1) Development of new techniques

↳ eg Gravitational manoeuvring techniques of ISRO



- lower pollution
- lowers cost

(2) Space Debris clean up

↳ • identification and monitoring network eg NETRA of ISRO

↳ to prevent Kessler's Syndrome

(3) Finding New Fuels

↳ Green hydrogen and renewable energy



• to reduce impact on the @ Earth's atmosphere.

Space tourism is an exciting new arena that will not only attract resources of private sector in space sector but also promote new R&D. but this has to be done keeping sustainability in mind.

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)

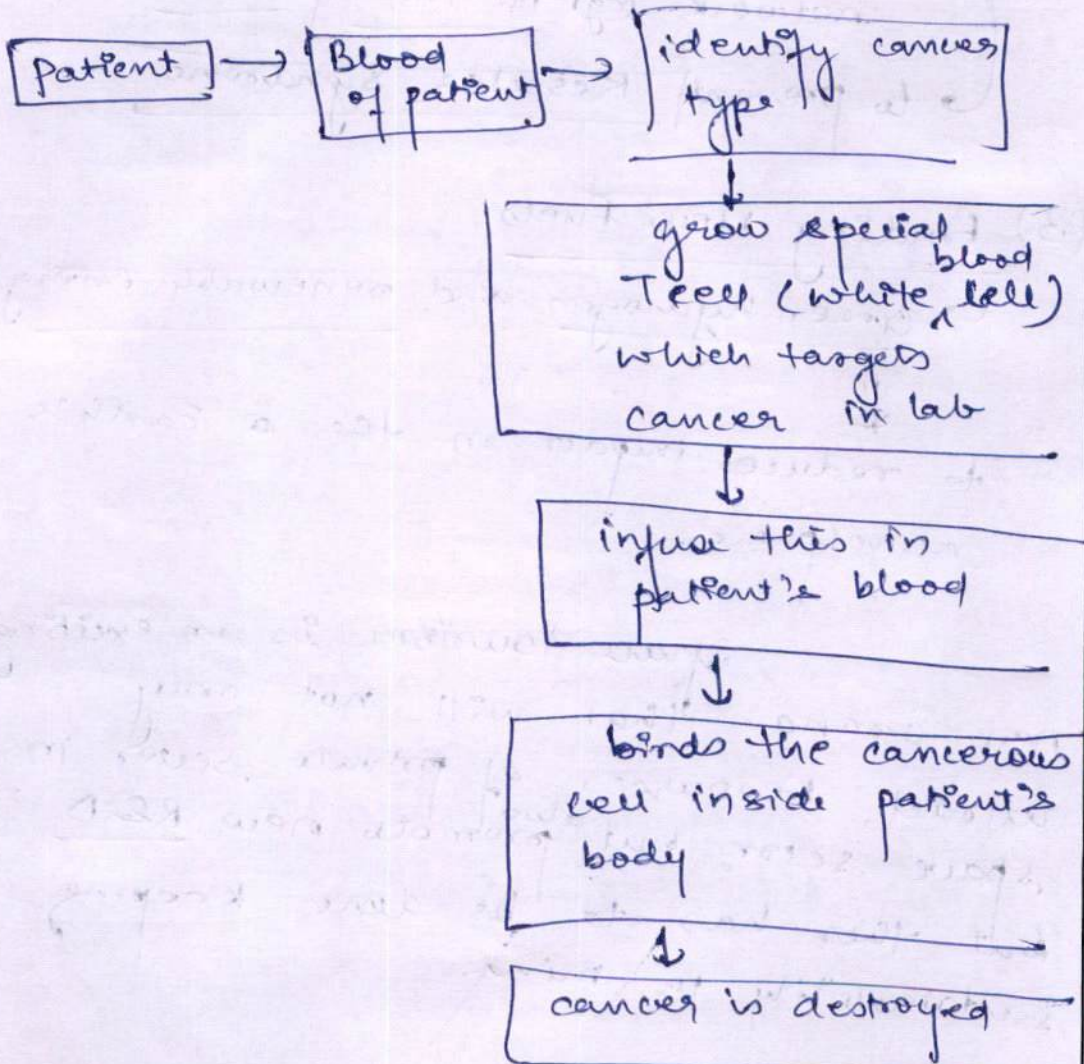
10

उम्मीदवारों को इस हशिप में नहीं लिखना चाहिए
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CAR-T cell therapy is biotechnology technique aiming at treatment of cancer.

CAR-T

↳ chimeric T-cell therapy



How can CAR-T cell overcome limitation of CRISPR-Cas9?

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

(1) CRISPR-Cas9

↳ op need to operate inside the body to identify gene

CAR-T → cells can be grown outside the body.

(2) CRISPR-Cas9

↳ can introduce unwanted changes while using molecular scissors

[CAR-T] → cells not inserted inside body until proven safe

(3) CAR-T → virtually any treatment of cancer is possible

- completely destroys cancer

CRISPR-Cas9

↳ such success was not observed as it not specifically a anti-cancer treatment.

more than a p million people die every year due to cancer. CAR-T cell therapy is a welcome step to give them hope. But safety and affordability must be tested before deployment 21

9.

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

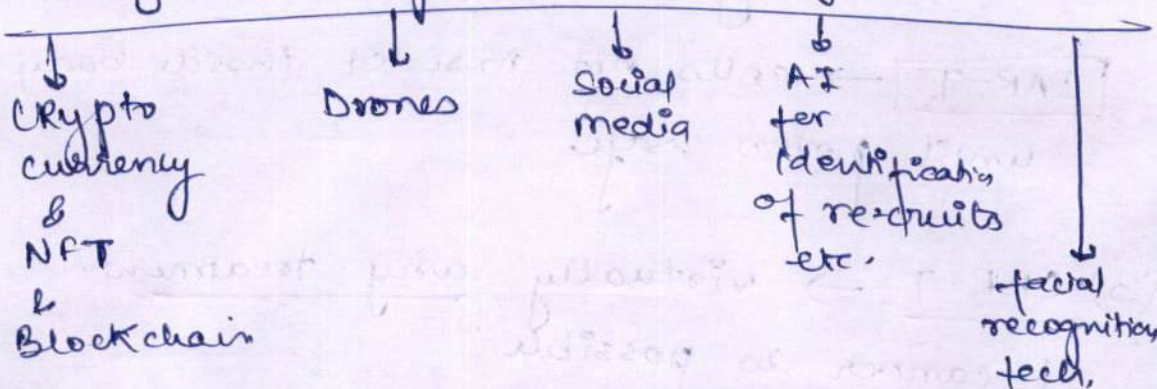
Discuss why the rising deployment of new and emerging technologies by prominent violent extremist organizations demand concerted global efforts. (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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According to Interpol, there is an increasing trend of usages of drone, cryptocurrency etc. by extremist organization.

Types of New and emerging technologies being used by Extremist organization



Why concerted Global Efforts :-

(1) Borderless technologies

↳ (eg) quick movement of cryptos like bitcoin

(2) Anonymity → social media accounts, blockchain tech etc.

(3) difficult to monitor

↳ use of VPN → agencies unable to identify area of origin

(4) Global reach

↳ geographical border now meaningless

(Eg) ISIS Radicalization from Iraq in Syria India using social media

(5) Using vulnerabilities in data systems

↳ personal data at risks.

Way forward :

(1) International Collaborations

↳ (Eg) No money for Terror Conference
targeting cyptos

(2) Involving creating global framework

↳ Institutional & Procedural framework

↳ UNSC can play a role

(3) Involving tech development corporation

↳ building safeguards in the system to identify such accounts

Extremist organization causes substantial financial losses and human lives. Global efforts are needed to fight this menace

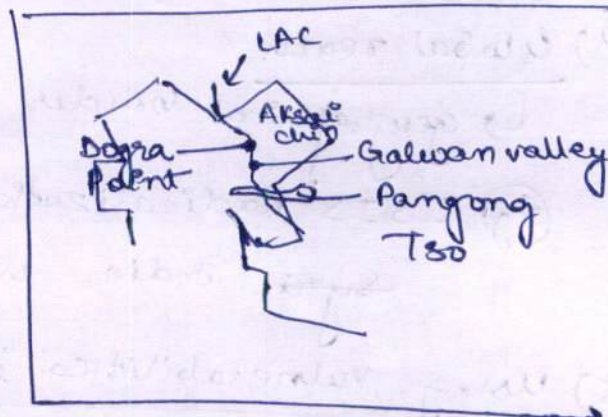
10.

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

Line of Actual Control is the ~~the~~ ground position line between China and India post 1962 war



Galwan Incident and Yangste incidents



led to 3 year border standoff

between two nations



No immediate ~~de-escalation~~ de-escalation expected in near future.

Ramping of Border Infra

→ India

→ Vibrant Village Programme

→ Chenab Railway Bridge

→ Chardham Project

China → highways → ~~route~~ connecting
Xinjiang with Tibet
Karakoram highway

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

Role of ITBP:

Paramilitary force raised after 1962
war
guards Indo-China border

Roles -

- ↳ guarding border states with China
- ↳ 1st line of defence
- ↳ assists army in wars
- ↳ assists border infra projects
- ↳ guards infiltration → especially in
Eastern Sector of the border.
↳ NE
- ↳ Anti-insurgency operation especially
in NE fuelled by China.

ITBP has been an important
force in assisting India against
Chinese adventurism.

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

In India, agricultural productivity is measured on the basis of amount of crop produced per hectare of land. This is land productivity measure.

~~In~~
Irrigation water productivity = Amount of crop produced per unit of irrigation water used.

Need for such shift

(1) Poor agro-ecological planning

↳ Eg growing water intensive crop like rice and sugarcane in semi-arid area like Punjab & Haryana.

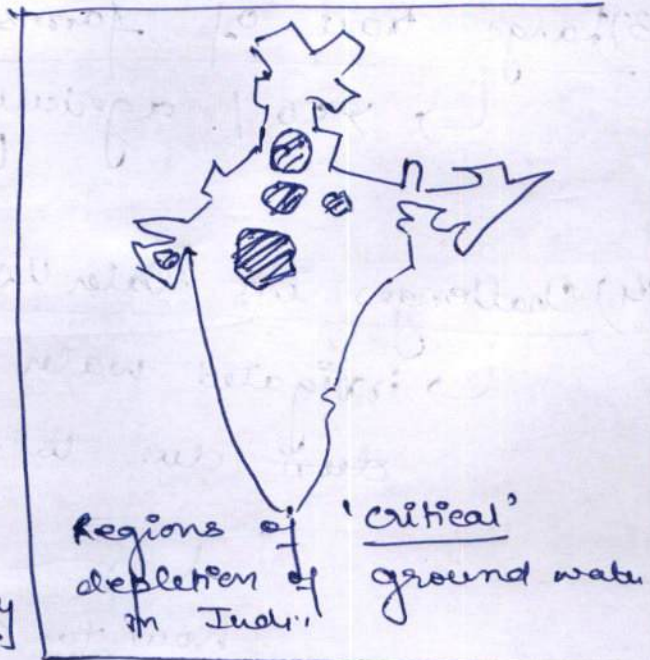
(2) 'Virtual Water Export' → India largest exporter of water intensive crops -

rice, jute, sugarcane etc.

(3) Declining Ground water Table

(4) low water use efficiency

(eg) India uses 4 times water to grow same crops than china.



(5) Power Subsidy

→ over irrigation by farmers using pumps

→ creating other problems

→ soil salinization

→ desertification

→ leaching ~~soil~~ soil nutrients

→ soil erosion.

Challenges in making the shift

(1) Lack of clear data

→ how much water is used where?

(2) Difficult in monitoring amount of

water used on each field.

- (3) Large tract of farms → unirrigated
↳ > 50% agricultural land in India
↳ rained.

- (4) Challenges in Water Use efficiency
↳ irrigated water can be lost
~~down~~ due to ground absorption,
evaporation
↳ how to account that

- (5) Difficult to understand by the farmers.

Way forward:-

- (1) farm surveys → nature of irrigation used
- (2) creation of All India level picture of irrigation water productivity
↳ with simple and broad parameters
- (3) Targeting priority areas first

In wake of climate change, with increasing shortage of water ~~resources~~ resources, moving towards irrigation water productivity a welcomed steps.

12.

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

Examine the role that green hydrogen can play in unlocking the energy security of India. How can the National Green Hydrogen Mission help India in achieving its energy goals? (Answer in 250 words)

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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Green Hydrogen is a hydrogen based energy system using renewable energy.

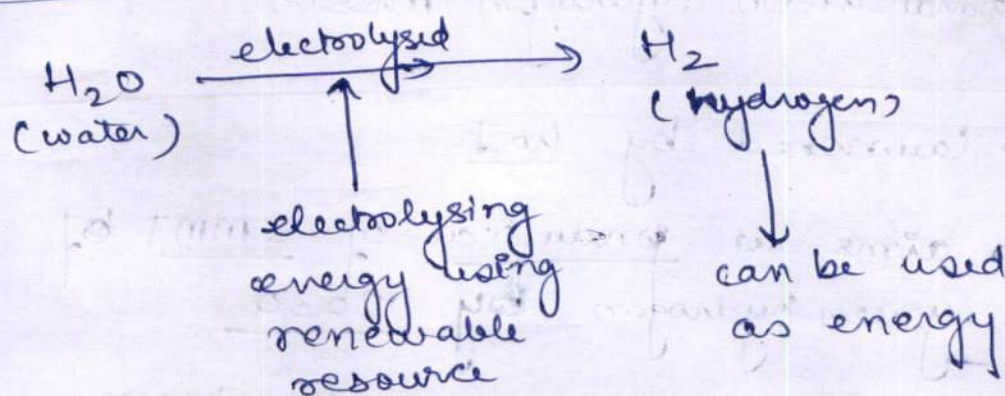


Fig: - Green Hydrogen

Role of Green Hydrogen in Energy Security of India

(1) Raw material → widely available → water, hydrogen etc.

(2) Reduces import dependence

↳ reduces vulnerability in exceptional matters like covid 19 etc.

(3) Potential for large scale deployment

↳ ↑ access to energy in unserved areas (eg) NE

(4) Cleaner form of Energy

↳ continuity during Energy transition
in wake of the Paris deal commitment

National Green Hydrogen Mission

↳ launched by GoI

↳ aims at production of 5 MMT of green hydrogen by 2030

↳ subsidy given for electrolyser

↳ reduces import ~~tariff~~ tariff on
imp. raw materials

↳ identifies PSUs to promote
green hydrogen production
(eg) NTPC - Renewables.

↳ 2 components: SHIP
SIATH

How it can help :

- (1) Viability by Cap funding in setting up green hydrogen plants → incentives to private sector
- (2) PSO led production
- (3) Reduces high initial cost through subsidy
- (4) Increases awareness about green hydrogen
- (5) Incentivizes adoption

Way forward :

- (1) Supply chain Resilience — electrolyzers require platinum → scarce resource → needs imports
- (2) Hydrogen storage development
 - hydrogen highly inflammable
 - cryogenic storage needed.
- (3) Most electrical system → coal based
 - transition towards hydrogen based

According to IEA, India is at cusp of green hydrogen in the world. This mission is a welcome step in this regard.

13.

हाल के दिनों में, सरकार न्यूनतम पारिश्रमिक की जगह जीवन निर्वाह पारिश्रमिक को अपनाने पर विचार कर रही है। भारत में जीवन निर्वाह पारिश्रमिक को अपनाने के लाभ और इसमें विद्यमान बाधाएं कौन-सी हैं? (उत्तर 250 शब्दों में दीजिए)

The government has been weighing a transition from minimum wage to living wage in recent times. What are the benefits and constraints in the adoption of living wage in India? (Answer in 250 words)

15

Minimum wage is equivalent to the minimum money that can lift an individual out of extreme poverty. It includes only basic needs—clothing, food and shelter.

On the other hand, living wage means min. wage that can earn a decent living — includes cost of education, health etc. It is a broad concept than min. wage.

According to Art 21 — Right to life includes right to live with dignity — not just animal existence. Hence living wage becomes imperative.

Govt's transition towards living wage

- (1) Increasing wages in MNREGA
- (2) Increasing MSP for better price realization ~~in~~ for farmers
- (3) ~~Social~~ Labour codes - Social security code - implicitly identifies living wage
- (4) Food subsidy → assisting the vulnerable section,

Benefits of living wage :-

- (1) Justice Approach in Economic planning
- (2) Reduces vulnerability of poor strata
- (3) Allows them to avail → education
↳ health
- (4) Multiples impact on production capacity of the economy.
↳ healthier and educated population
- (5) Eradication of poverty
- (6) Achievement of SDG → SDG 1, 2, 3 etc.

Constraints :

(1) Limited resources of the state
(2) Increases cost of production for firm

↳ Reduces ease of Doing Business

↳ lessen the competitiveness of Indian economy

↳ most MNCs in search of cheaper labour

↳ can lead to dislocation of industry industries

(3) Administrative challenges

↳ inclusion and exclusion errors

↳ leakages corruption in govt. schemes like MNREGA ~~spoke~~

⇓
wages not delivered at last mile

Living wage is a welcomed concept. However, the steps towards should be taken with involvement of all stakeholders

14.

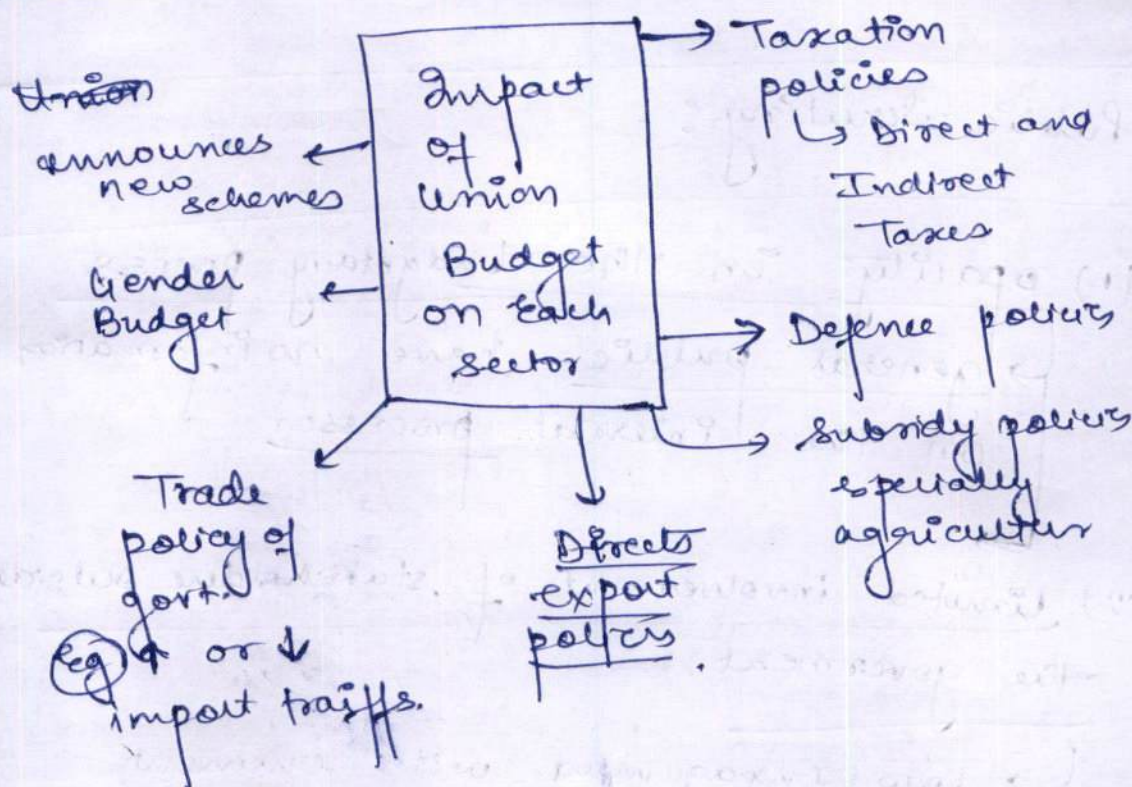
केंद्रीय बजट भारतीय अर्थव्यवस्था के लगभग हर क्षेत्र को प्रभावित करता है, फिर भी न तो बजटीय प्रक्रियाएं पर्याप्त सार्वजनिक जांच के दायरे में आती हैं और न ही बजट नीतियां। क्या आप इस कथन से सहमत हैं? अपने उत्तर का औचित्य सिद्ध कीजिए। (उत्तर 250 शब्दों में दीजिए)

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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15

Union Budget is mentioned under Art 112 as 'Annual Financial Statement'.
It is presented every year by the Finance Minister.



Budgetary Process

- ↳ Prepared by Department of Eco. Affairs
- ↳ Each ministry sends its scheme

- and requirement to the above dept
- dept analyses - outcome budget
 - and decides priorities
 - involves stakeholders for all ministries
 - finalised by cabinet with finance
Min. at the steer

Budget Policy → determined by the cabinet.

Public Scrutiny :-

(1) opacity in the budgetary process

- general public have no information
on the internal processes

(2) limited involvement of stakeholders outside
the government

- low engagement with eminent
economists
- industrial sectors etc.

(3) Parliament dominated by the Executive's
party

- cannot pass cut-motion

- ↳ fragmented opposition
- ↳ overburdened departmentally related committees
- ↳ increased use of guillotine motion (eg) 170% of budget in 2023 was passed without discussion

leads to lack of accountability on the budget

- (4) Budget → no fixed ~~law~~ policy →
- changes • year to year
 - finance min. to finance min
 - ruling party to other party

Non-coherence for public ~~scrutiny~~ scrutiny

According to Kautilya, budgetary govern-
ment is finance. Thus, scrutiny
of budgetary policies and budgetary
process needs to be strengthened.

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

Pre 1960s, India was a milk deficit country. With advent of White Revolution, India has become largest milk producer with 25% of global share.

White Revolution
Success

→ steered by V Kurien

→ set up of 3-tier cooperatives

→ incentives to farmers to produce more milk

Productivity of Dairy Animals - Concerns

(1) Much below global productivity

India - ~1450 kg / lactating period / cattle

Global - ~2200

Why low?

(1) Geographical factors

↳ tropical and moist condition —
naturally low productivity

temperate condition like Denmark —
higher productivity

(2) Other factors

↳ Nutritious feed for ~~cattle~~ animals
unavailability

↳ diversion of good pasture land for
other land uses

↳ diseases ~~eg~~ lumpy skin disease
in cows

↳ lack of veterinary services
~~eg~~ UP → 19% deficit in veterinary
doctors

↳ unhygienic condition of stables

↳ lack of mechanism in milching

↳ most cattle in India — hand
milched.

Way forward :

(1) Creation of database of highly productive indigenous breeds

(2) Targetting 2 areas

NW India

- high productive indigenous breeds already present

(Eg) Gir, Sahiwal, Haryana

Himalayas

- temperature allow breeding with foreign high capacity breeds

(3) ~~break~~ Incentives / Subsidy to farmer for good quality feed

(4) Extension of veterinary services

(5) Vaccination against diseases

Dairy sector is revolution in terms of productivity is needed not just for agricultural enhancement but also for women empowerment

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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According to IPCC, the temperature over India have increased by 0.9°C impacting severely especially the agriculture sector.

Climate Change Responsible for crop failures

(1) Increasing temperature

- reducing productivity
- (eg) wheat losses in India due to heat waves in 2022
- increases evapotranspiration,
- droughts conditions

(2) Increasing disaster frequency

- (eg) hail storms in Zaid season in 2023 in Northern plains

(3) Insects attacks and pests attacks

(4) other sectors

- decline in productivity of cattle
- over oil production in fishes
- [undesirable]

↳ avian diseases : lumpy skin diseases,
Avian Influenza etc

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

Agriculture responsible for climate change

(1) Emission of GHG

↳ Methane → flooding technique of Rice
↳ methane by cattle

(2) Changing land use pattern

↳ diversion of forest land into
agriculture land
↳ loss of carbon sinks

(3) Changes local biogeochemical cycles

↳ overuse of urea
↳ imparts Nitrogen
↳ changes local
weather characteristics

(4) Depleting water resources

↳ ground water and pollution of
surface water
↳ impacts water cycle

Strategy Under National Agriculture Management Plan

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

11) Demarcating Agro-Ecological Zones

↳ identifying suitable crops for each region's weather.

(Eg) Rice not suited for semi arid region of Punjab.

12) Adoption of New techniques

(Eg) Direct Rice Seeding in Rice

↳ reduces methane.

↳ Methanogenesis Reduction feed for cattle

(3) Micro Irrigation techniques

↳ less loss of water in evapotranspiration

(4) focussing on millet → more suitable in rising temperature

(5) Insurance of farmers to save from crop failure.

Proofing ~~the~~ Agriculture from climate change is essential for 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)

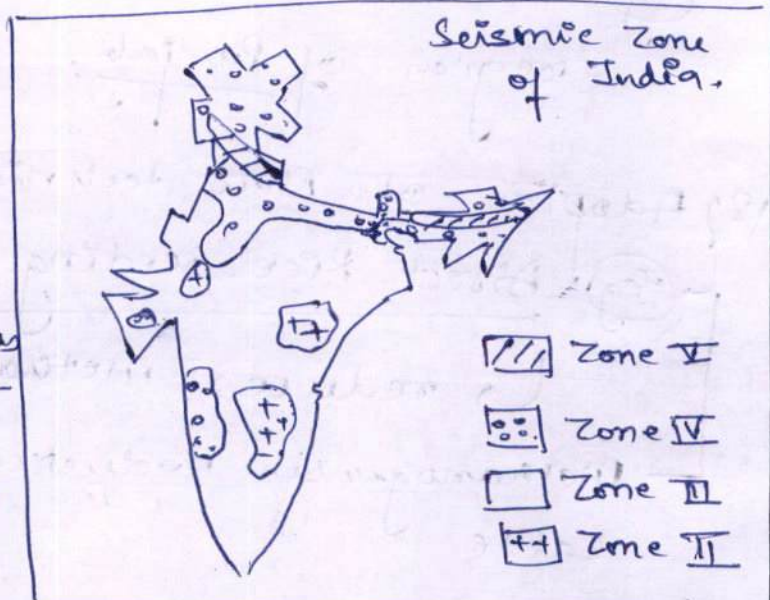
Some regions in India, including Delhi, are highly vulnerable to the impact of earthquakes originating in the Himalayas. Discuss. What institutional measures have been taken to mitigate earthquake losses in India? Do you think there are significant gaps that still exist? (Answer in 250 words)

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए
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India has high vulnerability to Earth quakes

Some Regions are highly vulnerable to impact of EQ in Himalayas



(1) Lesser and middle Himalaya lie in seismic

Zone V — highest vulnerability to Himalaya

(2) Rest of Himalaya — Zone IV

(3) This is due to Plate Tectonics

(4) It increases vulnerability in other regions like Delhi :-

↳ geographical proximity to Himalayas
($< 500 \text{ km}$)

↳ Himalayan EQ after > 6 on Richter scale

eg) Nepal EQ of 2010s → 7.8 Richter Scale

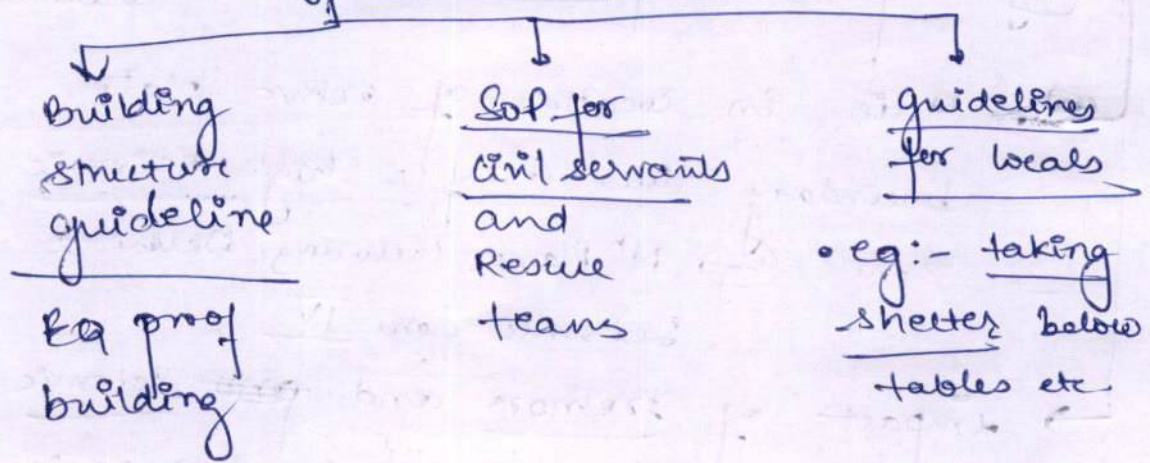
→ lie in location of active plate boundary thus itself high seismic zone eg) Nⁿ Plane including Delhi → Seismic Zone IV

→ impact of tremors and ~~para~~ seismic waves of Himalayan EQ → easier to travel in Nⁿ area due to presence of unconsolidated sedimentary structure

Institutional Measures Existing:

- (1) Disaster Management Plan under DM Act, 2005 → specific targets EQ
- (2) Institutional forces → NDRF and SDRF for rehabilitation and rescue operation.
- (3) Special guidelines for Himalayan states
 - ↳ frequent drills
 - ↳ local population capacity building
- (4) Early Warning Systems
 - ↳ Radars and seismographs ~~is~~ across India

(5) NDMA guidelines ~~for~~



Significant gaps:

There are few gaps:

(1) Unintegrated planning with other disasters

eg) EQ often trigger landslides, tsunamis etc.

(2) Overburdened NDMA forces

(3) limited capacity in early warning system

(4) Rampant construction in Zone V

eg) Joshimath land subsidence case

EQ is a natural hazard that becomes a disaster because lack of preparedness.

18.

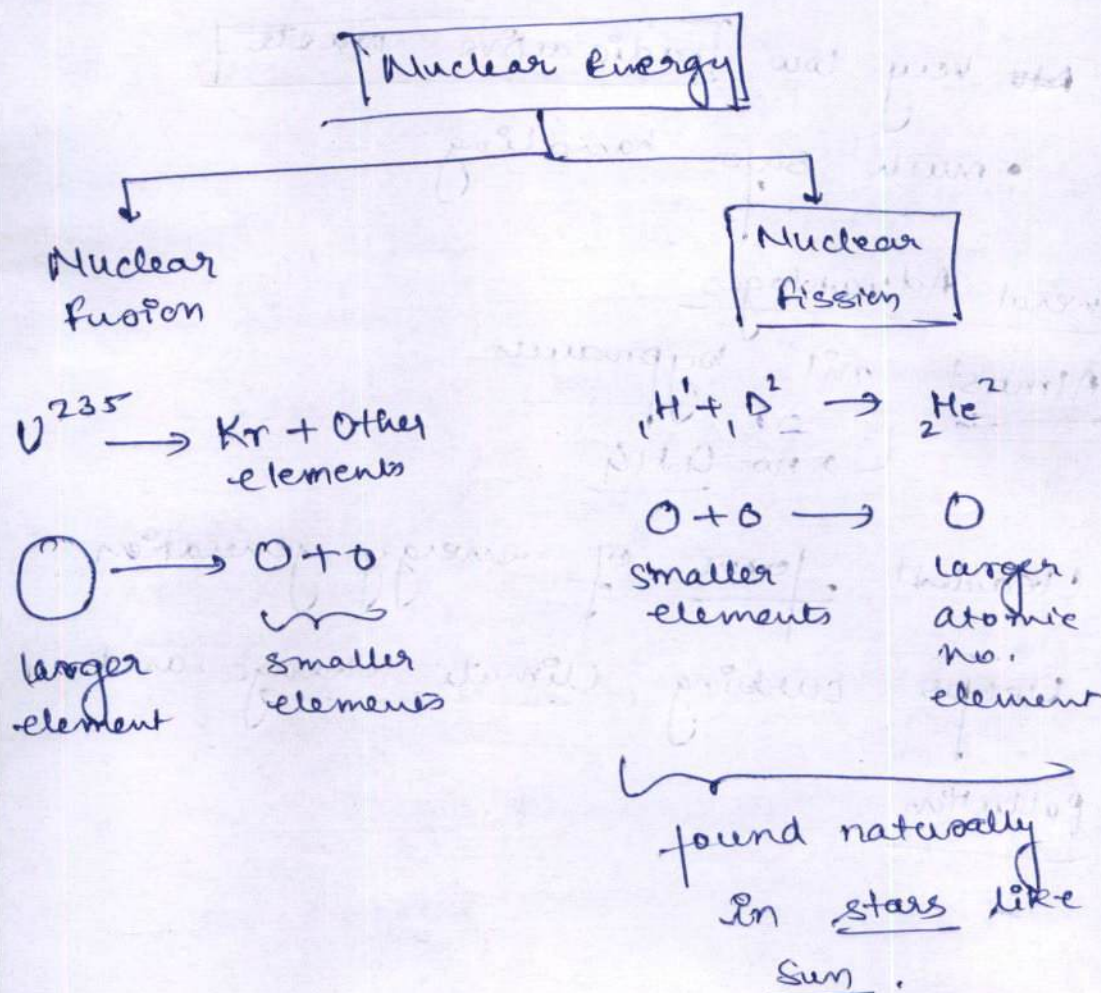
हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों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

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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ITER project, building the world's largest Tokamak reactor ~~to~~ had reported to gain net energy in nuclear fusion Reaction.



Limitation in generating at large scale

उम्मीदवारों को इस इतिहास में नहीं लिखना चाहिए
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(1) Nascent technology

↳ still developing

eg ITER, 'China's Artificial Sun' etc.

(2) Requires massive amount of energy for initiation of fusion reaction.

(3) Fusion Reaction → very high temperatures

↓
matters in 'plasma state'

↓
difficult to contain
at commercial scale

↓
can cause explosion

(4) Hydrogen → highly inflammable ↳ challenges in collection, storage and transportation.

Nuclear fusion is a technology of tomorrow. Once achieved it give energy security to entire planet for indefinite period of time.

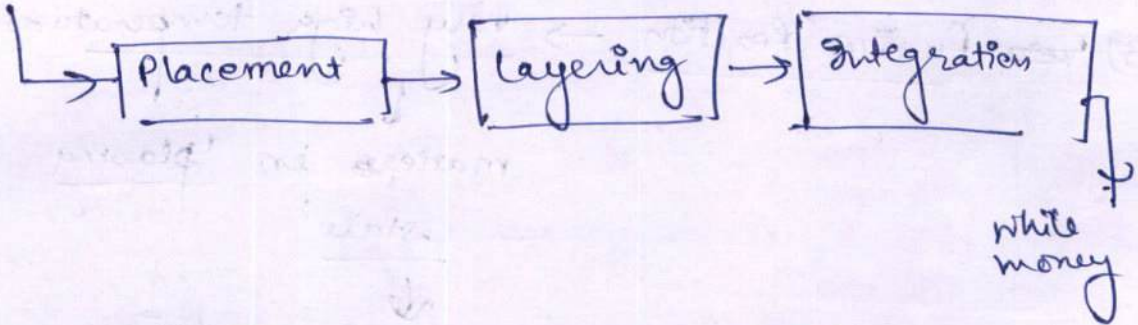
19.

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

According to INTERPOL, Money laundering is the process of making illegitimate money to appear from legitimate sources.

It is a three step process
black money



Menace of money laundering

(1) Economic

(a) loss of Revenue for the state

(b) Artificial Inflation

↳ especially in real estate sector

(2) Social menace

(a) ~~loss~~ mistrust by public in government run financial system

(b) fuels inequality in society

(3) Security Menace

- (a) terror financing
- (b) politician - criminal nexus

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए
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PMLA and Amendments

PMLA

- major anti-money laundering law in India
- gives investigating powers to ED

Recent Amendments

- Burden of proof on the accused
- enhances power of ED
 - search and seizure
- time limit specified for ED to file chargesheet

Efficacy of PMLA :

Positives : -

- (1) According to AML Index of Interpol, India has improved its rank to 70 in money laundering

(2) Able to collaborate and with other
multi lateral institutions

eg) during Panama papers case

Negatives:

(1) Unable to stop money laundering —
India still a 'high' category jurisdiction

(2) Arbitrary and discretionary powers
to ED

↳ used more as a political tool

(3) ~~Countering~~ issue of fake currency
not specifically dealt in PMLA

↳ major source of money laundering

Way forward:

(1) Integrated Institutional Approach
↳ major investigation agencies to collaborate

(2) Breaking politician - criminal nexus in
money laundering

(3) strengthening Anti - Corruption law
to ↑ efficacy of PMLA

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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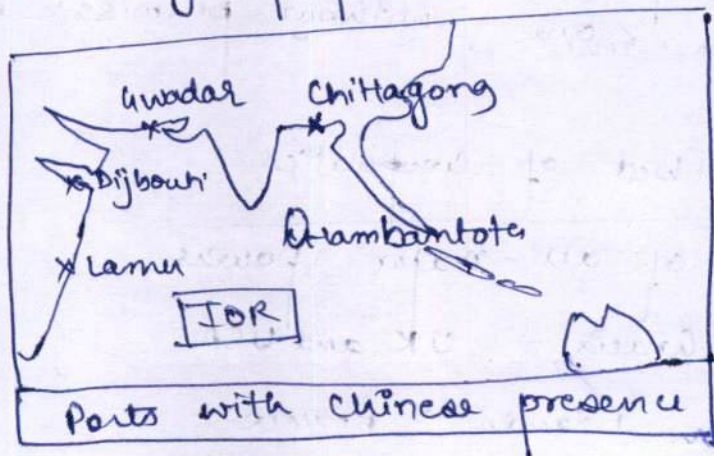
Indian Ocean is the 'backyard of India', Maritime security in India thus cannot be achieved without securing IOR.

Security threats in IOR having impact on India's maritime interest

(1) Increasing Chinese Adventurism

Ex: Docking of Yuan Wang 5 at Sri Lanka

↳ String of pearls strategy



Threats :-

- surveillance of Indian coasts
- choke points

(2) Increasing piracy

→ ~~International~~ IMO has declared Northern Indian Ocean as highly vulnerable to piracy

Threat:- 90% of trade of India uses maritime routes

(3) Maritime boundary disputes

- Sir Creek → Pakistan
- New Moore Island → Bangladesh.

(4) ~~fishmen~~ fisherman issues

→ often crosses international boundaries

(5) Freedom of Navigation Operations by other countries

⊙ USA → passed inside India's Contiguous Zone without permissions

(6) IOR as hotbed of Geopolitics

→ presence of all major powers

⊙ Diego Garcia → UK and USA
Reunion Islands → France

⑦ IOR is highly vulnerable to climate change

↳ increasing frequency of disaster etc.

Threat: coastal infra and population of India

↳ (1/3rd) lives along coast

- megacities → Mumbai, Kolkata etc.
- ports etc.

Robust Strategy:

(1) International Collaboration

↳ Institutional: IORA, BIMSTEC, Indian Ocean Naval Symposium.

↳ countering Chinese presence: QAUD

(2) Internal Steps

↳ increasing coastal security mechanisms

↳ Increasing patrolling by Naval Guard

↳ increasing collaboration among navy, naval guards and state marine police

↳ capacity building of coastal population

↳ disaster management drills etc.

Gaps in coastal security had led to infiltration in India that caused 26/11 attacks. Thus robust planning in this domain is sine qua non for the population.

SPACE FOR ROUGH WORK

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