

**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. : 857571

अभ्यर्थी का नाम/Name of Student : SAKSHI JAMUAR

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

तारीख  
Date

27 Aug, 2023

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

केंद्र  
Centre

Ranchi

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

Shoukay  
27/08/23

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

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
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**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 हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

Food security refers to adequate availability of food and food produce to the population to ensure a dignified living.

### Dimensions

#### ① Agro-productivity

boosting productivity of ag crops ensures constant supply to other sectors.

#### ② Livestock sector

a key to food security since it diversifies farmers' incomes as well as addresses hidden hunger.

#### ③ Industrial growth

↳ food processing industries are key to promoting manufacturing sector  
↳ enhancing livelihoods.

#### ④ Fisheries & horticulture

#### ⑤ Distribution of foodgrains - under

Laws like NFSA, 2013 - to tackle malnutrition & hunger.

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

~~Q. 1000 No~~  
India's status #

① Agro-productivity is low

L 18.1 contribution to GDP yet  
employing 52.1% populace : disguised unemployment.

However, surplus

in rice, wheat

② Livestock sector

L self sufficiency in milk, eggs, poultry

③ Food processing industries have key growth potential yet plagued with challenges like poor raw material quality.

④ Foodgrain distribution

L high leakages (Shanta Kumar Committee)

Addressing the issues

→ boost agro-productivity using crop diversification, precision agri.

→ boost livestock sector via adequate & timely supply of credit

→ Food processing hubs under SAMPADA can be utilized to remedy the sector.

Food productivity &

& security is key to eradicate hunger (SDG 2)

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

Govt's flagship Digital India Mission has heralded a new era of 'techade' characterised by blockchain & Generative AI like Chat GPT. This has wide potential in agriculture:-

### Blockchain in agriculture

① Adequate land records management  
└ land titling  
└ land registry

② Immutable nature of blockchain makes hacking into personal land records difficult.

③ Creation of database to oversee & reduce food storage issues

④ Promote easy transportation of foodgrain.

~~⑤ Know~~  
Challenges → lack of technical-know how  
→ high costs  
→ digital divide & illiteracy

## ChatGPT

- ① Climate forecasting
- ② Provide farmers timely information of use of seeds & fertilisers.
- ③ ChatGPT + IoT sensors
  - ↳ help in detecting crop health
- ④ Soil health monitoring.
- ⑤ Provide market information
- ⑥ Promote farming innovations.

Challenges → digital illiteracy (only 38% population)  
→ low internet penetration

## Way forward

- ① Promote digital literacy
- ② Expand optic network  
(through Bharat Fibre)
- ③ Bring ChatGPT & Blockchain under  
Agri Extension programmes
- ④ Capacity building  
↳ inviting NGOs to train.

ChatGPT & Blockchain  
can transform agri-sector & contribute to  
building knowledge economy.

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

De-dollarisation refers to a phenomenon whereby use of dollars in international transactions is replaced by other currencies, undermining former's clout.

### Factors for de-dollarisation

- ① Dollar diplomacy undermined economic sovereignty of nations  
eg ~~to~~ coercive use of structural Adjustment Measures.
- ② Increased protectionism
- ③ to act as a cushion ~~for~~ against supply chain shocks
- ④ Pandemic induced unemployment & capit poverty was ~~acc~~ facilitated by Dollars.
- ⑤ Emergence of third world
  - ↳ BRICS: for a new currency
  - ↳ India bid for Rupee internationalisation

- ⑥ Russo-Ukraine war  
↳ promoting payments in Roubles/  
Renminbi.

Dollar will not lose dominance anytime  
soon as :-

- ① Hard currency  
↳ practised by majority of  
↳ used  
nations
- ② Countries like UAE, Saudi make  
oil payments in dollars  
↳ hesitant to shift to other  
currency
- ③ Dollar is a medium to act against  
crises emerging out of Balance of  
payments situation.
- ④ Provides revenue & arbitrage to govts.

Regardless, India  
must persevere in its efforts for  
Rupee internationalisation for ~~enhancing~~  
its emerging role as 'Uishwaguru'.

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

Developed countries & the WTO have consistently opposing India's MSP and fisheries subsidies as distorting.

Significant pressure as

- ① Subsidy regime in India ~~is~~ disturbs the free trade regime
- ② Farmers in developed countries at a disadvantage due to higher & stiff competition from India.
- ③ 'Irregular, unregulated' fishing by developed countries & India  
↳ tilts fisheries ~~see~~ dividends in our favour.

Merit in retention

- ① Legally, India's MSP subsidies conform to the 'de minimis' principle laid during Doha

Round :- not outrightly illegal.

- ② Protecting interests of own farmers
- ③ Promoting nutritional security of ~~the~~ population which Govt. is mandated to do under NFCA 2013.
- ④ Promoting employment & livelihood of farmers & marine farmers.
- ⑤ Affirming voice of the global south ~~by~~.

Recent govts' successful plea on extending time for ~~transition~~ <sup>along</sup> away ~~from~~ <sup>with</sup> fisheries subsidies is a step towards protecting local industries.

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 comprises 18.1% of world population but only 4.1% of water resources (World Bank).

### Initiatives addressing water needs

① Jal Jeevan Mission

↳ piped water supply to all by 2024

② Namami Gange programme

↳ 5 tiered mechanism for revival & rejuvenation of Ganga basin

③ PM-Krishi Sinchayi Yojana

↳ promoting constant irrigation facilities

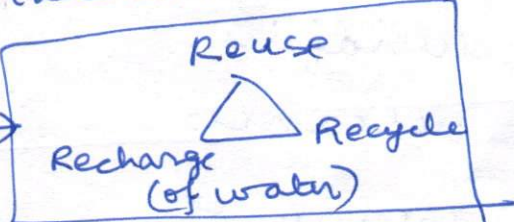
④ Integrated Watersheds Management program — developing catchment area involving community.

⑤ River interlinking projects  
eg Ganga - Burhi Gandak.

## Issues

- ① Groundwater & Surface water pollution
- ② Lack of capacity building among program implementation makers.
- ③ River interlinking projects not with inter state disputes. eg. Mullaperiyar dam
- ④ Lack of civic sense  
↳ promoting wasteful consumption.

## Way ahead

- ① Adopting a 'One Water approach' valuing ~~integrity~~ inherent value of water. so
- ② 3R mechanism → 
- ③ Adherence to National Water Policy, 2012  
↳ mandatory rooftop harvesting
- ④ Crop diversification
- ⑤ Adopting drought tolerant crops.

Resolving India's water crisis is key to reducing inequalities under A-32 of Constitution.

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)

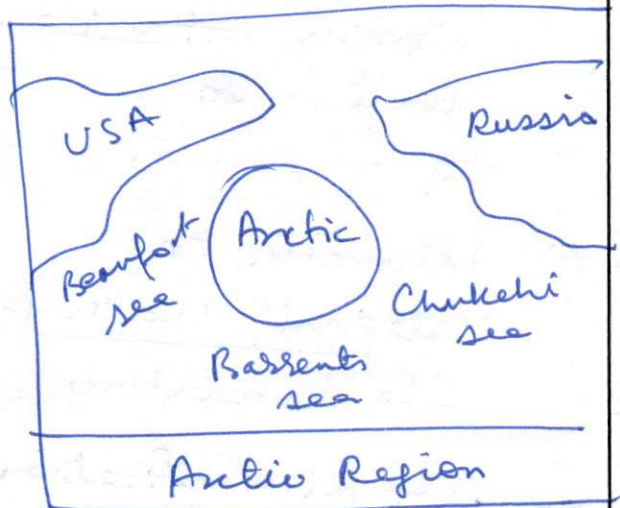
What are the major drivers of glacial retreat in the Arctic? Describe the potential impact of the retreat of Arctic glaciers on the ecosystem. (Answer in 150 words) 10

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

Arctic region is increasingly seeing glacial melting & permafrost thawing - warranting intervention.

### Drivers of glacial retreat

- ① Release of Greenhouse gas  
eg Methane ~~star~~
- ② wildfires
- ③ volcanoes
- ④ Overuse of fossil fuels  
(coal, petroleum)
- ⑤ use of Ozone depleting substances
- ⑥ Ice → high albedo → more retreat.



### Impact

- ① sea level rise
- ② Island submergence
- ③ Coastal erosion

④ ~~Endangering~~ Endangering of fauna  
↳ IPCC : polar bears likely extinct  
by 2100.

⑤ Zombie fires (wildfires)

⑥ ~~Permafrost~~ Permafrost thawing  
↳ methane emissions, creating  
a continuous loop.

⑦ Change in monsoon

positive  
impact

→ new shipping lanes  
→ discovery of new rare  
earth minerals.

### Glacial melting - Solution

① Collaboration @ International level

↳ Cop27

↳ implementing loss & damage  
fund speedily.

② Switch to renewable energy of OSOW06

③ Changing lifestyle practices

↳ (minimisation) of Carbon life.

↳ If we do not  
swim together, we will  
sink ?

— Antonio Guterres.

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, Jeff Bezos (head of Blue Origin) undertook his maiden journey to space

↳ rekindling the debates on space tourism.

### Challenges

① High costs

② Exclusionary in nature

↳ can be afforded by only below 1% of world population.

③ Ethical concerns

↳ ~~offer~~ high opportunity costs (space v. development)

④ Safety of passengers

↳ protecting from radiation

⑤ further space debris

## Measures

- ① Promote R&D in space
- ② Private sector participation must be increased
- ③ Promote safety of tourists via upgrading space equipment.

④ Space tourism has potential to earn huge foreign exchange which might be beneficial to a nation's all round growth.

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 (Chimeric Anti Receptor Therapy) is a gene-editing technology increasingly used in ~~the~~ treatment of cancer.

CRISPR-Cas9 on other hand, involves use of bacteria & molecular scissors to cut away a defective ~~gene~~ <sup>tissue</sup> & replace with a healthy one.

① CART-cell overcoming CRISPR-Cas9 limitations

① ~~Cart~~ → CART-cell minimize & viral/bacterial behaviour [creating a 'chimera']

↳ and use it to trap/lock such microbe. ~~This~~

② Further work is done by

T-cells - of phagocytosis  
↳ killing the  
microbe.

CRISPR-Cas9 has limits  
in sense that it cannot mimic  
a ~~low~~ microbial function. In  
this way, CAR-T Cell is an  
improvement.

### Challenges

- ↳ low R&D
- ↳ high costs in R&D
- ↳ Chances on immune function  
getting compromised.
- ↳ absence of clear cut guidelines
- ↳ IPR issues

### Way forward

- ① promote funding & R&D
- ② ↑ industry academia linkage
- ③ Informed consent of patients

CAR-T cell can  
prove to be a gamechanger in domain  
of biotechnology & uphold patients  
right to health  
(A-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 हशिप में नहीं लिखना चाहिए  
Candidates must not write on this margin

The present world order is mixed by widespread extremist rampage using novel methods to further their cause:—

- ① Additive manufacturing  
↳ using 3D printed parts to make guns.
- ② Using Dark Web (eg. Onion. tor)  
↳ for money laundering
- ③ AI and deepfakes  
↳ brewing cyber-warfares
- ④ Hacking into critical information systems  
eg recent AIIIMS data leak
- ⑤ Blockchain & cryptocurrency for organised crime like drug trafficking, organ trade etc.
- ⑥ Drone warfare  
eg Pakistan launching drone attack in Kashmir.

## Need concerted global efforts

- ① International collaboration on Intelligence.  
eg ~~is~~ between NIA - Interpol
- ② Performing due diligence on offshore transactions, especially in tax havens.
- ③ International agreements in lines of Budapest convention
- ④ Heightened cybersecurity infrastructure at national levels, data localisation
- ⑤ Promoting awareness & capacity building of all individuals to counter cybersecurity threats.
- ⑥ Curbing cross border drone attacks needs upgraded border infrastructure.

Concerted global efforts will promote international peace & security, a firm principle embodied in UN Charter.

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)

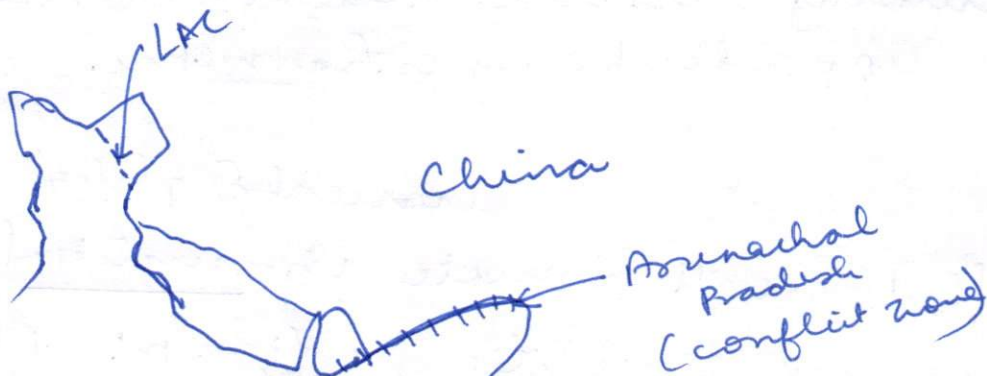
उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates must not write on this margin

10

Indo-China rivalry and border issues have been a source of constant headache for Indian security.

### Indo Tibetan Border Police

- ① Constant guarding of borders along Arunachal Pradesh.
- ② 24/7 vigilance upon an
- ③ Collaboration & community outreach to border villagers.



④ Intelligence information & dissemination to Home Ministry .

⑤ Supporting creation of border infra  
eg Vibrant Villages programme .

## Challenges

- Chinese repeated incursions
- China naming India's villages as its own
- presence of multiple border ~~police~~ forces
  - ↳ coordination issues .
- Issues of terrain / forested area .
- Inferior armory vis a vis Chinese

## Way ahead

- Upgrade border by technological inputs ( CCTV )
- Raise Informers group to assist ITBP by providing discrete information
- Capacity building of border villagers
- ~~Road~~ Border roads upgradation ( Shaktikar committee )

ITBP plays key role in maintaining sovereignty, integrity & security of India

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

Agriculture sector employs about 52% of the population yet its contribution to GDP is 18%. (Economic survey)

↳ highlighting low land productivity.

Shift to Irrigation water productivity needed as:-

- 1) Overreliance on erratic monsoon  
↳ (50%)
- 2) Unsustainable land practices  
↳ leading to groundwater depletion
- 3) focus on monocropping makes land vulnerable to natural vagaries
- 4) Disguised unemployment due to overreliance on 1 land
- 5) Irrigation water will ~~also~~ promote food & nutritional security

## Challenges in making the shift

- ① Subsidies like MSP  
↳ promote monoculture &
- ② Power subsidy  
↳ wasteful use of water
- ③ Unscientific cultivation of water  
intensive crops  
eg growing sugarcane in Udarbho
- ④ High costs of water irrigation facilities  
like drip & sprinkler irrigation.
- ⑤ Lack of support to farmers, attitudinal  
hesitancy in shifting to newer methods.
- ⑥ Land fragmentation  
lay forward
- ⑦ Use of precision agriculture  
↳ drip, sprinkler irrigation
- ⑧ Promote use of drought tolerant  
crops as they need less irrigation.
- ③ Agri-extension services for the  
know-how

(4) River- interlinking

(5) Integrated Watershed Management  
programme

↳ plantation around catchment  
area, groundwater recharge.

Shifting to  
irrigation water productivity will  
promote agricultural growth.

12.

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

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

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

15

Green hydrogen refers to the production of hydrogen energy from renewable energy sources.

### Unlocking energy security

- ① Reduce import dependence  
↳ bridging CAD
- ② Reduce reliance on fossil fuels
- ③ Promoting battery storage
- ④ Versatility  
↳ H<sub>2</sub> energy in one area can be used in another
- ⑤ helpful in fertiliser industry  
↳ used to make ammonia which is created from fossil fuels
- ⑥ Powering vehicles  
eg H<sub>2</sub>- fueled buses in Pune.

## Green Hydrogen Mission

- [Strategy for Intervention in Green Hydrogen]
- ① SIGHT program  
↳ for promoting R&D in hydrogen sector.
  - ② Assisting industries via mentoring & capacity building.
  - ③ promoting energy production about 5 Million Metric Tonnes by 2030.
  - ④ Boosting academia - industry linkage.
  - ⑤ Incentivising production  
eg of Hydrogen fuel cells

## Challenges

- ① low R&D
- ② limited awareness
- ③ Overreliance on fossil fuels  
↳ 51% on Thermal energy alone
- ④ Flammable nature of hydrogen  
↳ dissuading adoption

## ⑤ Regulatory hurdle

↳ overlap between Min. of  
Power and Ministry of New &  
Renewable Energy

### Way forward

- ① Tackling regulatory hurdles via laying down clear set of guidelines & delineating roles
- ② R&D to ~~reduce~~ reduce issues like flammability of hydrogen.
- ③ Promoting awareness among people via IEC campaigns.

Green Hydrogen Energy  
Mission is a step towards  
achieving India's Panchamrite  
goals.

13. हाल के दिनों में, सरकार न्यूनतम पारिश्रमिक की जगह जीवन निर्वाह पारिश्रमिक को अपनाने पर विचार कर रही है। भारत में जीवन निर्वाह पारिश्रमिक को अपनाने के लाभ और इसमें विद्यमान बाधाएं कौन-सी हैं? (उत्तर 250 शब्दों में दीजिए)
- The government has been weighing a transition from minimum wage to living wage in recent times. What are the benefits and constraints in the adoption of living wage in India? (Answer in 250 words)

The directive principles of State policy  
emphasise on the state to provide living wage to workers.

↳ living wage is beyond a step ahead of minimum wage in the sense that it also accounts for leisure & enhancing quality of life of workers.

### Benefits

- (i) Better living standards
- (ii) Improve quality of life
- (iii) living life with dignity - in all its richness & fulness  
↳ embodiment of A.21 of Constitution (Maneke Gandhi)
- (iv) Productivity & growth of economy
- (v) Developing other sectors

- (v) Workers with living wage will provide better facilities of education, healthcare etc. to children.

### Constraints

- (1) More fiscal burden
- (2) Enhanced Revenue expenditure will divert limited funds away from developmental purposes
- (3) Fuels inflation
- (4) Moral hazard  
↳ money may be used for profligate consumption.

### Way ahead

- (1) Comprehensive SWOT analysis of the issue must be done.
- (2) Enhance social security measures  
↳ ILO: only 24% population

under social security.

- ③ Promote insurance penetration
- ④ Strengthen labour codes so that high cost & spending chances does not arise.
- ⑤ Use of ICT like DBT to transfer salaries  
↳ to eliminate middlemen.

Concept of living wage can be a good step in upholding worker's happiness, but it must only be adopted if social security measures fail.

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

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

Art. 112 of Indian Constitution provides for 6 Annual Financial Statement<sup>s</sup> or budget which is a set of estimated receipts & estimated expenditures for the Union in a given financial year.

The Budget affects every sector ranging from

- agriculture
- manufacturing
- service sectors
- emphasis on revenue expenditures
- defence etc.

### Budget policies Under Public Scrutiny

① Through Parliamentary Committees

eg Govt. is required to formulate an Action Taken Report based on Public Accounts Committee

## Recommendations .

- ② Debates & discussions in Parliament
- ③ Presure of Comptroller & Auditor General to examine whether budgets involve fiscal prudence
- ④ Debates among the Media, dissent  
↳ enforcing govt. accountability
- ⑤ Outcome budgets  
↳ set timelines emphasising quality of service delivery . If poorly functioned → low allocation of grants next year.

lacunae in budgeting making  
sounding evasive

- ① Money bill  
↳ bypasses Rajya Sabha role.
- ② Lack of adequate discussions on budget —

③ Decline in referrals to committees.  
↳ 27.1. bills were referred in present  
Lok Sabha (PRS)

④ Lack of public outreach by Govt.

⑤ Overuse of Official Secrets Act 1923.  
Way ahead

① Repeal of Official Secrets Act  
to promote transparency (ARC2)

(i) Govt. must facilitate debates &  
discussions at the house.

(ii) Committee systems be given more  
power and access to scrutinize.

(iii) Using GST Council to bolster  
Centre - State relations & hear  
their voices.

(iv) Role of NITI Aayog to promote  
decentralised & contentual approach  
to budgeting.

Budgeting plays  
key role in wealth redistribution  
under A.39 thereby ~~reducing~~  
upholding social justice.

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 largest milk producer & exporter of the world, ~~whereas~~ and contribution of dairy & livestock to agro-GDP is around 30%.

Transformation from milk deficit to surplus as

- ① Colonisation resulted in decline in agro-productivity & famines (eg 1943 Bengal famine)
- ② Cooperative farming recommended by Kumarappa Committee proved to be first step.
- ③ Efforts of Verghese Kurien and support from Hon'ble Ex PM Lal Bahadur Shastri  
↳ National Milk Grid : self sufficiency.

- (4) Biotechnology promoting better yield  
↳ surplus & high export potential.

### Challenges in dairy sector

- (1) Inadequate availability of veterinarians in villages.
- (2) Lack of immunisation
- (3) susceptibility to diseases  
eg Mad Cow disease
- (4) Inferior quality of milk due to over use of chemicals & artificial injections.
- (5) Poor feed quality
- (6) Lack of institutional credit.

### Way forward

- (1) Leverage Animal Husbandry Infrastructure Development fund
- (2) Provide institutional credit via adequate enforcement of Priority Sector lending.
- (3) Value addition - milk to curd,

cheese a

④ Quality checks

⑤ Leveraging technology to boost productivity

L AI to check ~~cow~~ cattle health

⑥ Promote veterinarian services in villages by hiking budget

⑦ Improve cattle feed using healthy fodder eg, millet byproducts.

⑧ Promote

Milk sector is key to doubling farmers' income & ensuring nutritional security.

16.

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

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

15

Present era is marked by extreme weather events like heatwaves, droughts, global warming, pollution

Climate change  
↳ partly caused by agri  
↳ sector as :-

- ① Use of greenhouse gases (eg Carbon dioxide, carbon monoxide)
- ② natural factors  
↳ volcanoes, wildfires  
↳ droughts, floods :-> crop failure.

Agri-sector partly responsible as

- ① high methane emissions  
↳ has high global warming potential.
- ② Groundwater exploitation  
↳ causing water table depletion

- ③ Excessive fertiliser use  
↳ land pollution & contamination
- ④ Air pollution via stubble burning
- ⑤ Agricultural runoff  
↳ surface water pollution

### National Agricultural Disaster Management Plan

- ① Tackle methane emissions  
↳ by improving quality of animal feed.
- ② Emphasis on drought tolerant crops of millets
- ③ Crop diversification
- ④ Integrated farming  
eg Bihar model : using pisciculture on same land where paddy is grown

⑤ Agro-forestry

↳ aquiculture + tree plantation  
to tackle soil erosion.

↳ groundwater recharge.

⑥ Integrated watersheds development  
plan

↳ community participation  
(as 'first responders'.)

↳ boost green spaces &  
availability of water.

⑦ Drought insurance to farmers.

⑧ forecasting about extreme events.  
eg via Bihan app.

Building disaster

resilience in agriculture will ensure

SDG 10, SDG 5.

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  
Candidates must not write on this margin

Earthquake refers to the sudden vibration & oscillation of earth's crust due to friction in lower layers.

Some regions highly vulnerable

(i) Country divided into 5 Earthquake prone zones - Zone I, II, III, IV, V.

(ii) Zone V  $\Rightarrow$  maximum intensity while Zone I  $\Rightarrow$  minimum.

(iii) Himalayan regions as well as Delhi, Punjab, Haryana

$\hookrightarrow$  largely fall in Zone IV

$\hookrightarrow$  hence highly vulnerable

(iv) presence of convergent

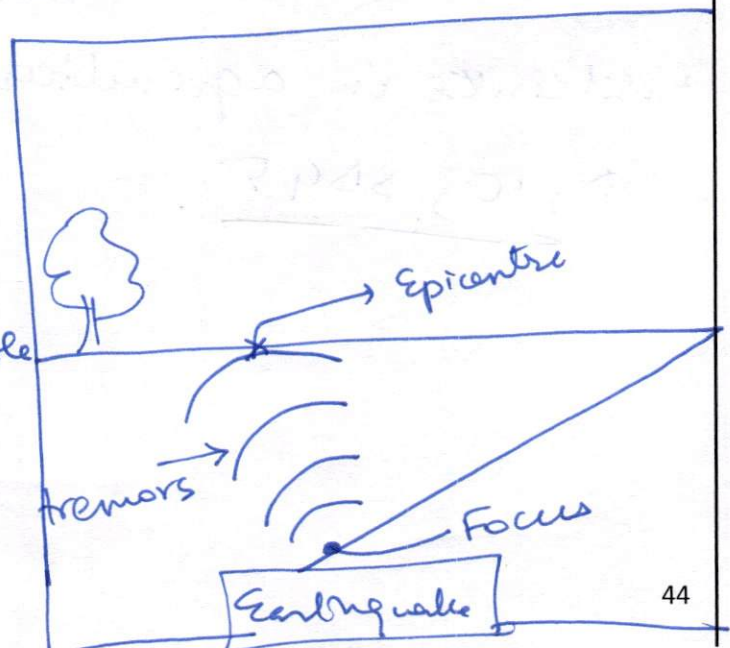


plate boundaries in Himalayas make them vulnerable.

## Institutional Measures towards Mitigation

- (i) NDMA, 2005.
- (ii) Adherence to Sendai Framework 2015 and Disaster Management plan 2016.
- (iii) Risk assessment
  - ↳ hazard zone mapping  
~~eg via sat~~
- (iv) Inter-agency coordination - from ~~all~~ top down approach
- (v) Structural measures
  - ↳ disaster resilient infrastructure building
- (vi) Non structural measures
  - ↳ capacity building of locals.

## Gaps

- (1) NDMA plan very broad
  - ↳ no clear cut guidelines
- (2) top down approach hampers smooth coordination

③ Lack of adequate capacity building of locals

④ high encroachment on lands

↳ hurdles in building disaster-resilient infrastructure.

### Way forward

① Bottom up approach

↳ local disaster management plans must be made.

② Utilising traditional knowledge

eg Taq, Uroosi, Dhajji Dinari houses in J&K have withstood earthquakes.

③ Technology use

↳ 3D printing for resilience

④ mock drills, curriculum for capacity building.

Newly created

Infrastructure Management Fund as per recent budget can help mitigate earthquake losses.

18.

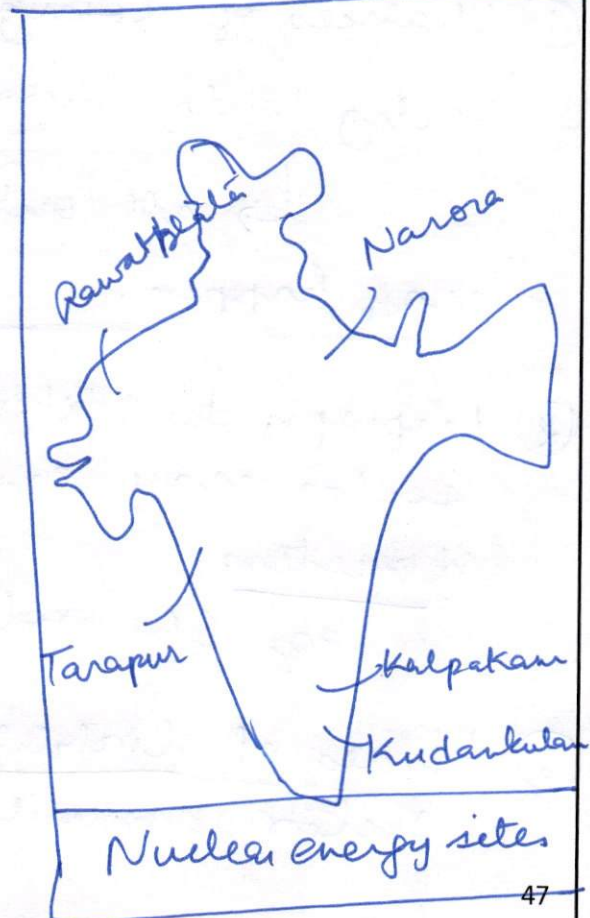
हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों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

Nuclear fusion is a form of reaction where two atomic particles fuse & combine to form a third element  
↳ involving massive energy production.

### Advantages of nuclear fusion power generation

- (i) Clean energy
- (ii) Reduce reliance on fossil fuels  
↳  $51.1\% = \text{thermal energy}$
- (iii) Reduce import bills ~~from~~  
(due to lower reliance on oil).



(iv) ~~For~~ Power generation for developmental purposes

↳ key to universal electrification  
of villages  
↳ promote industrial growth.

(v) Improve India's diplomatic stature globally.

↳ as a self-reliant, independent nation.

### Limitations

(1) Chances of ~~going~~ nuclear power going into wrong hands.

↳ all out nuclear war may happen.

(2) Improper due diligence by commercial sector may create nuclear disasters  
eg Chernobyl

(3) Issues of liability — Commercial sector unwilling to invest

due to it .

eg Union Carbide Corporation had to pay billions and is still paying .

- ④ Overdominance of thermal power  
~~for~~ . (57.6)
- ⑤ Presence of alternative renewable  
energy eg solar power

### Way forward

- ① Setting liabilities ~~by~~ under Public Insurance Liability Act, Absolute liability
- ② Promote peaceful civil use, monitoring
- ③ due diligence measures
- ④ Guidelines on proportionate ~~as~~ penalties  
~~on~~ on perpetrators.

Nuclear energy  
has huge potential for ~~has~~ heralding  
growth of the nation but it must  
be utilised with adequate safeguards.

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

The PMLA, 2002 has been launched to combat money laundering which refers to acquiring money illegally and using it for illicit gains.

### Recent amendments

- (i) Adverse burden of proof
- (ii) Stringent twin bail conditions
- (iii) expeditious completion of investigation

### Advantages

- (i) Stringent twin bail conditions  
↳ ensures the Accused does not go out of the reach of law.
- (ii) Completion of investigation within 180 days  
↳ promoting speedy justice

(iii) Upholding constitutionality of ED

↳ ~~no~~ autonomy in  
decision-making.

(iv) Stringent & strong powers to the  
ED as chargesheet by ED is  
different from those of CRPC

↳ a special law warrants  
special treatment: this motto  
has been upheld.

(v) Tackling money laundering through  
crypto currency & Casinos

↳ wider ambit.

### Challenges

① Court's ruling in Vijay Madanlal  
Chowdhary upholding strict  
bail condition

↳ disproportionate punishment  
(against 'bail not jail' rule)

② Poor conviction rates (0.5%)

③ More powers to ED

↳ misused by

## Centre to target Opposition States

(u) Newly emerging forms of money laundering

L eg in Darkweb (Onion .tor)

causing difficulty in tracking :

(u) Low manpower in ED

### Key forward

(1) ED must not work like a caged parrot of Centre.

(2) Twin bail ~~conditions~~ <sup>conditions</sup> - must be given adhering to proportionality test (Puttaswamy)

(3) Promote international cooperation eg With Interpol

(4) Expand due diligence rooms to real estate sector, lawyers, casinos

Combating money laundering is crucial to attain SDG goals (SDG 16.4)

20.

हिंद महासागर क्षेत्र (IOR) में मौजूद उन सुरक्षा खतरों पर चर्चा कीजिए, जिनका भारत के समुद्री सीमा संबंधी हितों पर सीधा असर पड़ता है। इन खतरों से निपटने के लिए एक मजबूत रणनीति सुझाइए। (उत्तर 250 शब्दों में दीजिए)

Discuss the security threats present in the Indian Ocean Region (IOR), which have a direct bearing on India's maritime border interests. Suggest a robust strategy to deal with these threats. (Answer in 250 words)

15

India has a 7515 Km long maritime border — making it highly vulnerable to security threats.

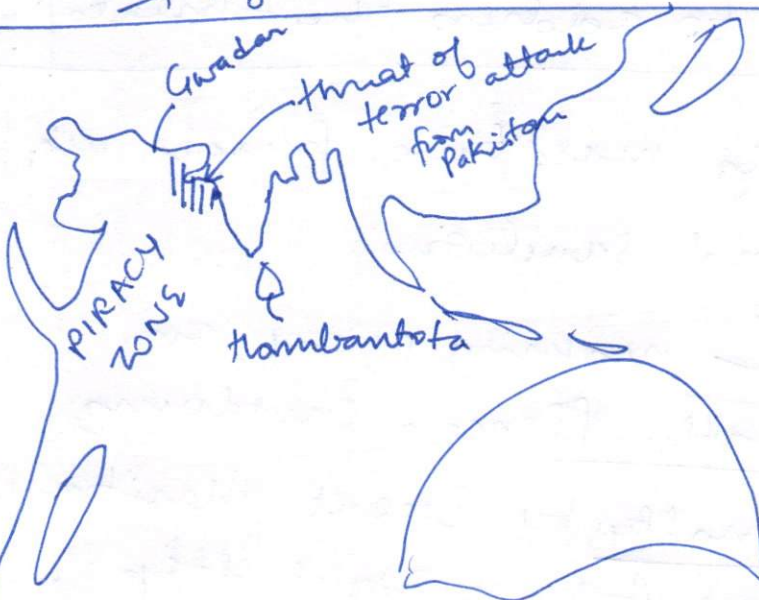
## Security threats to India

### ① Maritime piracy

↳ which is on a rise in recent years.

### ② Threat of terror attack from Pakistan

eg Ajmal Kesab came to attack



India on a boat.

- ③ Oil spills in the territorial zone  
↳ chances of fire in the sea & boats.
- ④ Cyber attacks on Indian vessels  
eg cyber warfare
- ⑤ Growing Chinese footprint in Indian Ocean  
↳ submarine presence near Andaman & Nicobar  
↳ building ports at Gwadar, Hambantota, Kyauksew (Myanmar).

### Strategy to address the threats

- ① Tackling maritime piracy via enhanced sanctions  
↳ making piracy an extraditable offence, involving death penalty. by recent Maritime Piracy Act a right step.

- ② Upgrading coast guards capacities via training, more artillery & armouery.
- ③ Conducting maritime exercises eg ex. Malabar
- ④ Dersuading China by building collaborations with the West (eg joining QUAD, 1202), more port building (eg Duqm in Oman)
- ⑤ Developing Great Nicobar project expeditiously
- ⑥ Intelligence exchange with neighbours like Sri Lanka.
- ⑦ Promote bonhomie with littorals eg developing Agalega island in Mauritius.

Maritime security ensures India's self-preservation as well as affirms commitments under the UNCLOS, 1982.

SPACE FOR ROUGH WORK

REAL

(A) Identifying the problem  
 (B) Identifying the objectives  
 (C) Identifying the resources  
 (D) Identifying the constraints  
 (E) Identifying the stakeholders  
 (F) Identifying the risks  
 (G) Identifying the opportunities  
 (H) Identifying the threats  
 (I) Identifying the strengths  
 (J) Identifying the weaknesses  
 (K) Identifying the advantages  
 (L) Identifying the disadvantages  
 (M) Identifying the benefits  
 (N) Identifying the costs  
 (O) Identifying the impacts  
 (P) Identifying the consequences  
 (Q) Identifying the outcomes  
 (R) Identifying the results  
 (S) Identifying the effects  
 (T) Identifying the implications  
 (U) Identifying the significance  
 (V) Identifying the importance  
 (W) Identifying the relevance  
 (X) Identifying the applicability  
 (Y) Identifying the feasibility  
 (Z) Identifying the sustainability