



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. : 1103916

अभ्यर्थी का नाम/Name of Student : Srishti Dabas

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

26/Aug/2023

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

केंद्र
Centre Bhai Toga Singh
School, Karol Bagh, Delhi

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 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
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

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

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



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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.

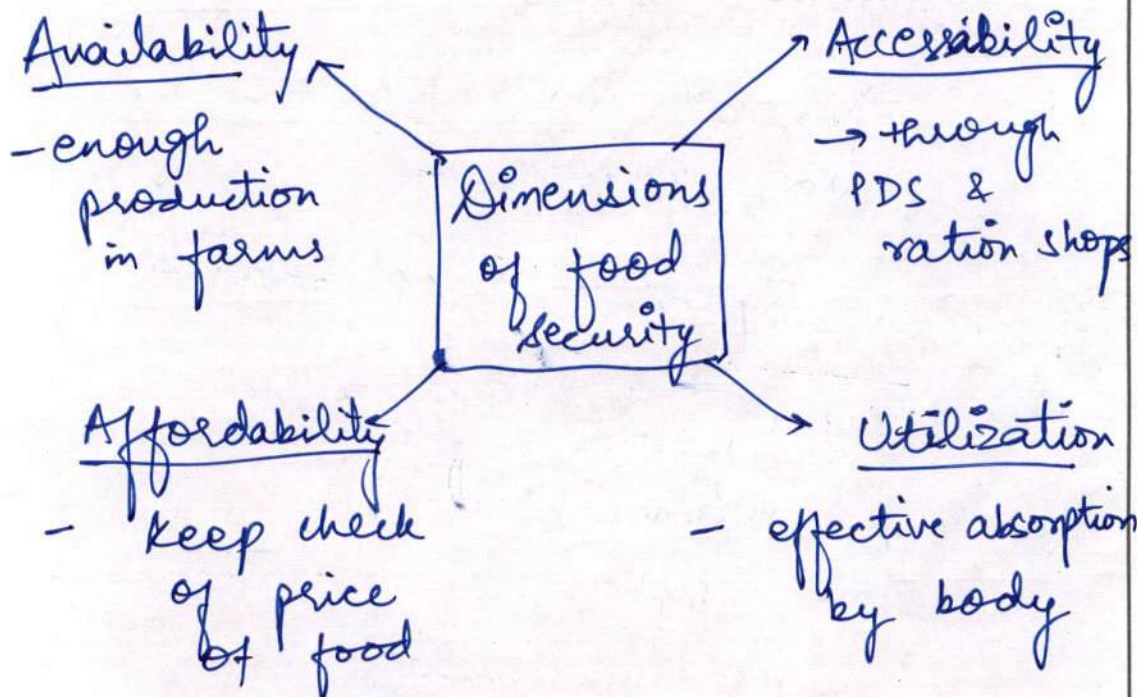
खाद्य सुरक्षा के विभिन्न आयाम क्या हैं? इन आयामों के मद्देनजर खाद्य सुरक्षा सुनिश्चित करने के संदर्भ में भारत की स्थिति का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

As per WHO, food security refers to the availability & affordability of nutritious food, to all people, at all times, to ensure standard of living & healthy lifestyle.



India's status in food security

There is dichotomy → largest cereal producer
→ yet, hunger ridden

Negative status

1) High level of hidden hunger.
→ lack of micronutrients like Fe, Zn.

2) Health outcomes
 ↓ ↓ ↓
Stunting Wasting Underweight
 35% 32% ≈ 30%

3) Due to huge poverty → around 230 mn multidimensionally poor.

4) High anemia in girls due to iron deficiency. (≈ 57%)

But, some positive steps taken:-

① Biofortification of rice
of Vitamin A

② PDS & MSP systems to ensure food availability.

③ India successfully in bringing out 415 mn out of poverty in 15 years.

Hence, we are in the right direction to ensure Swasth Bharat (Healthy India)

2.

ब्लॉकचेन और चैटजीपीटी जैसी आधुनिक प्रौद्योगिकियां कृषि को अधिक कुशल और संधारणीय क्षेत्रों 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

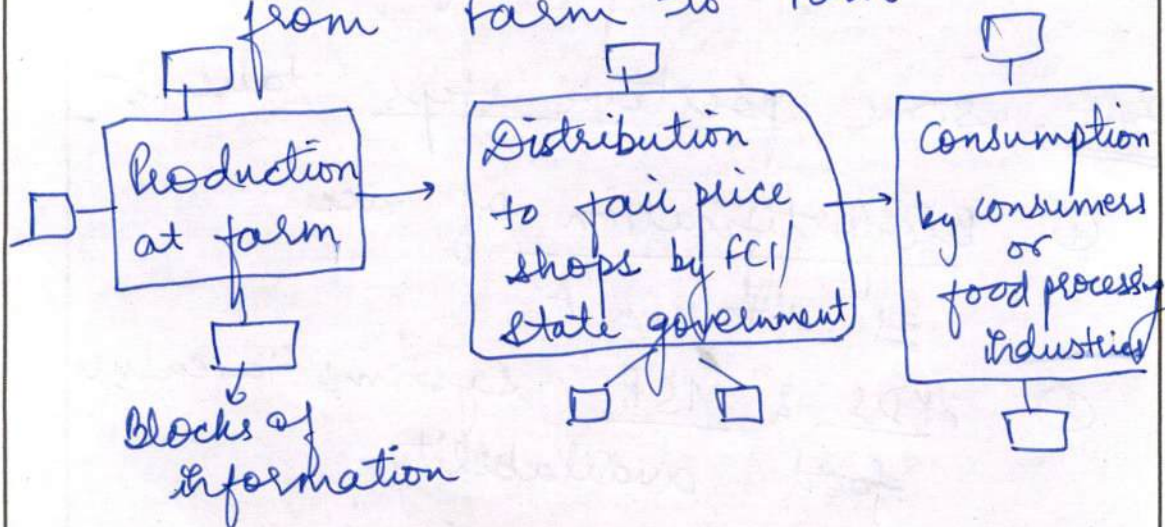
उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए
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We are living in the INTERNET AGE where technologies are spreading like fire with applicability across sectors.

Potential of Blockchain in Agriculture

① supply chain management

from farm to fork.



②. Efficient management of Public Distribution System →

check leakages and inclusion, exclusion errors.

③ Storage in godowns & transportation can also be streamlined →
reduce corruption (currently 49% in PDS-CAG)
→ reduce wastage (currently Rs 92,000 crore) = Niti Aayog

Potential of ChatGPT in Agriculture

① provide advisory services to farmers regarding → inputs to be used.
→ climatic suitability to different crops.

② help increase awareness of farmers as well as consumers about nutritional benefits of crops of millets as Nutri cereals.

③. Resolve queries, provide extension services, devise plans for farmers for crop management

Hence, technologies like IoT, Quantum, AI, etc. also will lead to SMART FARMS & SMART FARMERS

making our ANNADATAS as AGRIPRENEURS

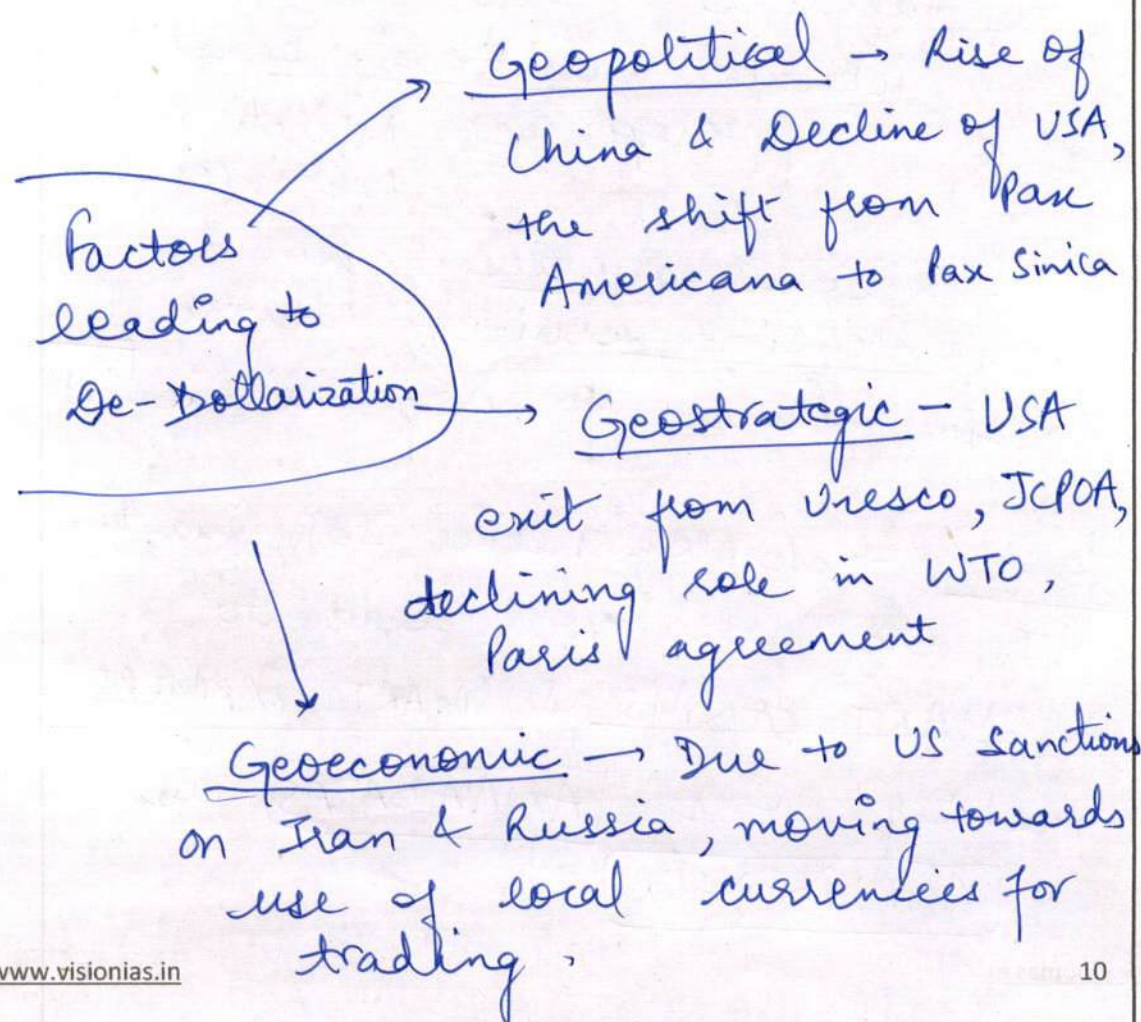
3.

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 दृष्टि में
 नहीं लिखना
 चाहिए
 Candidates
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De-Dollarization refers to the phenomenon of dollar losing its significance and as a global currency and other ~~currencies~~ currencies gaining prominence.

⇒ Recent move towards Yuan Internationalization



Dollar losing dominance soon

Yes |

↳ Rupee Internationalization in talks.

↳ Rupee-Ruble mechanism established for trade with Russia.

↳ Hegemony of China's Yuan rising

↳ The Vostro accounts opened can deal in local currencies, bypassing US dollar.

No |

↳ Full capital account

convertibility of other currencies less likely (\because volatility)

↳ Hegemony of US dollar

immense \neq SWIFT controlled.

↳ more than 90% trade occurs in \$.

Hence, there are both possibilities as economy of the globe is in flux (Russia Ukraine war & supply chain disruptions by covid). Only time will tell whether \$ prevails or demises.

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)

उम्मीदवारों को
इस कक्ष में
नहीं लिखना
चाहिए
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10

India's food security regime,
including MSP, PDS through
fair price shops and NFSA
(National Food Security Act- 2013)
is under pressure by →

1) WTO → challenged by
developing nations
as trade distorting →
question whether to consider
them under blue box or
amber box.

2) Peace Clause → India takes
benefit of peace clause as
developing nation which is
often criticised.

3) USA - time & again challenges
India's food subsidies
of power subsidy, fertilizer
& food subsidy.

India's stand to retain food subsidies

उम्मीदवारों को
इस कक्ष में
नहीं लिखना
चाहिए
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- 1] Developing nation, with largest population (1.4 billion) & huge poverty (230 million) necessitates government help.
- 2] Welfare state model of India's governance \Rightarrow art. 38, 39 to reduce inequalities.
- 3] The subsidies meant are not trade distorting, and within permissible rules.

Yet, we must agree that there are some challenges \rightarrow huge fiscal burden

$\left\{ \begin{array}{l} (\approx 17 \text{ Lkr on MSP}) \\ \text{4 2 Lkr food subsidy} \end{array} \right.$
 \rightarrow exclusion & inclusion errors
 \rightarrow leakages & corruption
(49% in PDS as per CAG)

Hence, need to overcome these challenges by digitizing supply chains, use of technology (eg: blockchain) & effective targetting of ANTYODAYA for their SARVODAYA |

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)

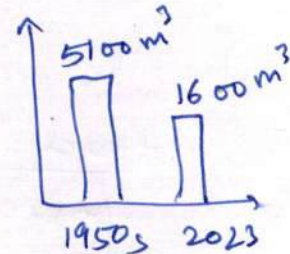
10

उम्मीदवारों को
इस दृष्टि में
नहीं लिखना
चाहिए
Candidates
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this margin

"Water-Water everywhere,
not a drop to drink."

— Rhyme of the ancient
mariner.

India is facing water crisis as
evident from per capita
water availability



dedicated
Jal Shakti
Ministry

Steps taken
by government
to address
water needs

Har Ghar Jal to
ensure tap water
connections by 2024.

Atal Bhujal Yojana
for groundwater
recharge.

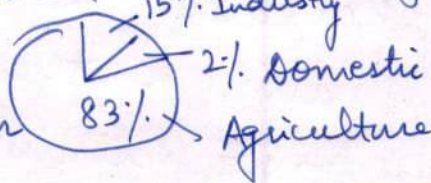
JAL Shakti Abhiyan
Catch the rain when it
falls, where it falls

Jal Teerav Mission

Yet, issues prevail

Water availability

- ↳ 30% population does not have access to safe drinking water
- ↳ water scarcity situation when per capita water availability $< 1700 \text{ m}^3$ & water stress when $< 1300 \text{ m}^3$
- ↳ Urban floods & Globs further cause water shortage & in Shimla 2019
- ↳ Due to skewed usage of groundwater



Water Quality

- ↳ heavy metal contamination of groundwater of Uranium
- ↳ Waste water management is poor.
- ↳ Storm water mixes with domestic supplies
- ↳ Industrial effluent discharge

Hence Prioritised Intervention needed →

- ↳ Traditional water saving of Tankas
- ↳ Rainwater harvesting
- ↳ Water Quality Audits
- ↳ sustainable agriculture
- to ensure SDG - Safe Water for all

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 सत्र में
नहीं लिखना
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ce

Climate change : Today shifting
from Global warming to
Global Boiling”

— Antonio Guterres

The effects visible across Arctic
through glacial retreats, major
drivers of which are →

Natural factors:

1] Melting of glaciers & ice caps
due to global warming, altering
ocean currents.

2] Anthropogenic factors:

→ increase in pollution of
air, water, soil

→ waste discharge in oceans

→ deforestation & unsustainable
urbanization.

→ change in land use patterns
more concretization leading
to Urban Heat Island effects

Impacts of glaciers retreat

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इस इतिहास में
नहीं लिखना
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① Ecological Impacts

- ↳ release methane from permafrost
- ↳ release the zombie virus and
invasive alien species
- ↳ threat to small island
developing nations of Vanuatu.
- ↳ increase in frequency & intensity
of climate disasters of floods,
cyclones.
- ↳ loss of biodiversity
of coral bleaching

② Social Impacts

- ↳ loss of livelihood to fishermen
- ↳ damage due to floods
- ↳ distress migration : climate
Refugees
- ↳ social cost of carbon

③ Economic Impacts

- ↳ loss to GDP & economic growth
- ↳ cost of rehabilitation

Hence, need for → climate smart agriculture

- ↳ behavioural change
- ↳ sustainable tourism

to keep MOTHER EARTH protected
through BIOCENTRISM |

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 becoming a reality with the launches by SpaceX as well as endeavours of new startups in India.

of Mission Prarambh - Vikram's

But Challenges associated are -

1) Financial → huge cost of operations & maintenance
↳ trade off with social expenditure.

2) Ethical → the space being used as new arena of warfare
↳ lead to militarization of the global common.

3) Infrastructural → lack of trained manpower
↳ lack of technologies

4) Geostrategic → competition with China
→ Increase in space junk.

5) Inequalities → Increase as only rich
can afford.

Measures to be taken to address this

① Astro Carta → need of global legislation
for all nations

② Sustainable use of Global Common
↳ as Elinor Ostrom (Nobel prize
winner) described in book
'Managing the Global Commons.'

③ Financing through private sector

④ ~~PPPP~~ → public private philanthropic
partnerships!

⑤ Keep check on space debris
to prevent Kessler Syndrome.

⑥ Innovations & R&D.

Hence, all nations must aim at
preserving space for benefit of
humanity.

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)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए

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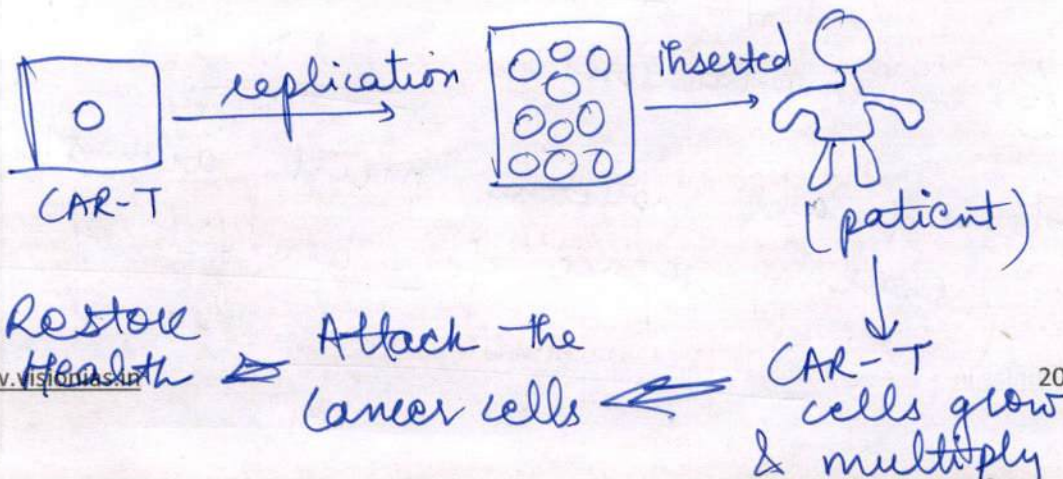
10

In this age of technological advancements, Biotechnology is one such arena which has gained huge prominence post covid.

CAR-T cell therapy: Game Changer in Treatment of Cancer

Process :-

- ① The healthy cells/tissues are taken which are made to replicate in synthetic material → placed into cancer patient



- ② easy process to implement.
- ③ cost effective → other treatments for cancer are unaffordable by poor.
- ④ easy to administer → unlike the chemotherapy which pains.

CAR-T therapy overcomes limitations of CRISPR-Cas 9 technology

1] CRISPR-Cas 9 alters ~~genes~~ genes hence seen as → a) risky
b) unethical

CAR-T therapy does not tamper with human genes directly.

2] CRISPR-Cas 9 still under research
↳ not yet deciphered completely due to challenges of mutations

3] CAR-T therapy much more economical & safer than CRISPR

Yet, more research & improvement is needed in CAR-T cell therapy also → to ensure Safety & Beneficence (prevent Maleficence) of Biotechnology.

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 खण्ड में नहीं लिखना चाहिए
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Rise of extremism & terrorism is spreading like 'termites' in the society, hampering peace & stability.

New & emerging technologies used

1) Cryptocurrency → to route illegal money (Money Laundering) for financing organized crimes

2) Deep Web & Dark Web → to evade scrutiny of intelligence agencies.

3) Advanced armmunitions → more destructive & harmful (beyond Ak 47)

4) Drones → for surveillance, transportation of weapons

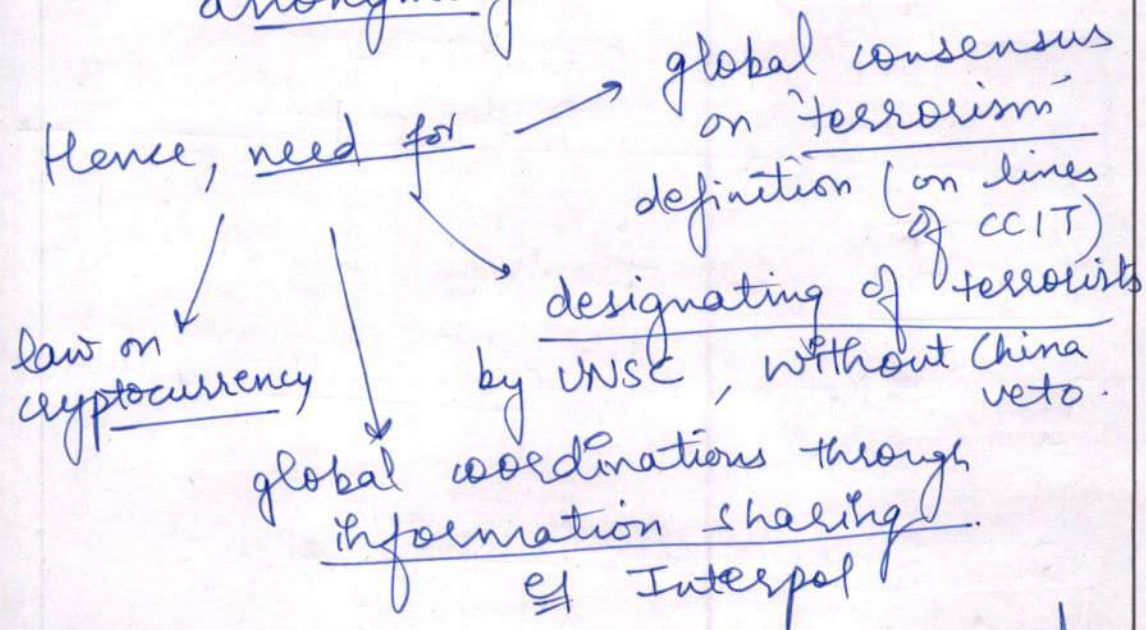
5) AI & IoT → for better planning & coordination

6) Virtual & Augmented Reality → to stimulate future attacks beforehand

उम्मीदवारों को इस बाशिरे में नहीं लिखना चाहिए
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Need for concerted global efforts

- ① crimes are transnational in nature
- ② variety of interlinkages between organized crimes - of drug & money arms trafficking
- ③ evades intelligence scrutiny → anonymity.



Steps already taken in this regard

- ↳ ① ~~Delhi~~ Delhi Declaration by India
- ② coordinated efforts by FATF, Interpol
- ③ GPAI - Global Partnership on AI.

all these are steps in right direction

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
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The border skirmishes between India & China have had long history:

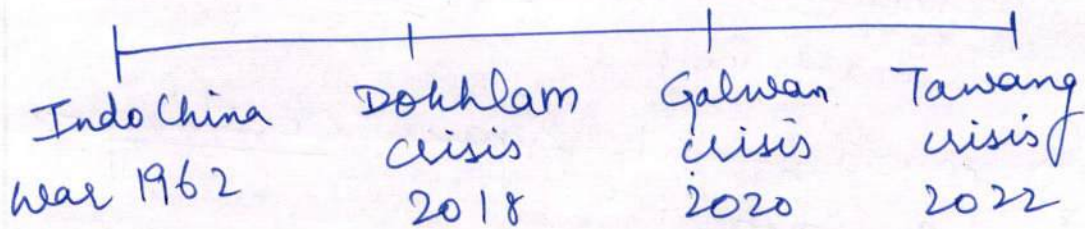


Fig: Evolution of Border disputes

Reasons for tension at border:-

- 1) violation of ceasefires by Chinese army
- 2) Infrastructural build up by Chinese army.
- 3) Security Dilemma & lack of trust between 2 neighbours.
- 4) India sees China as revanchist power & predatory hegemon.
- 5) failure of border talks.

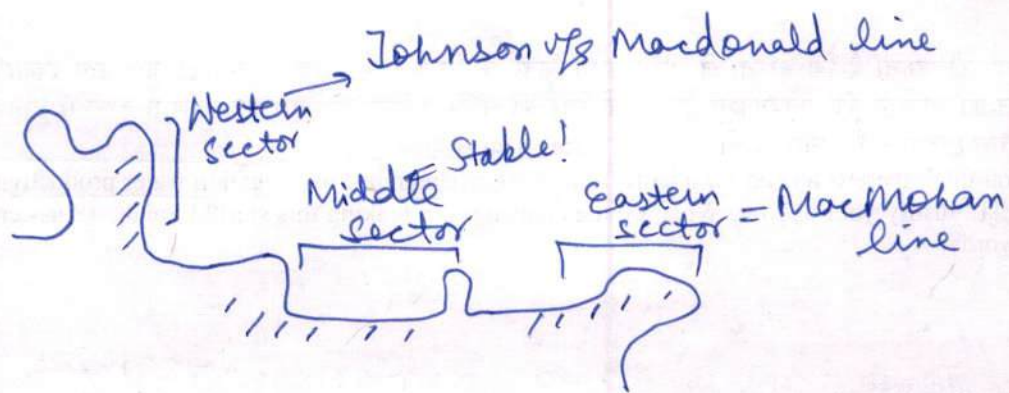


Fig: India China borders dispute

Role of ITBP in handling situation

① keep surveillance & reconnaissance on the region.

② coordinate with Border Roads Organization (BRO) to ensure infrastructure stability on Indian side.

③ constant communication (use Quantum technology)

④ use of technologies like AI, IoT, drones for better monitoring of ground realities.

⑤ be prepared for war like situation — 'hard power'

⑥ Yet, ensure SMART POWER as per situations

This will ensure sovereignty & territorial integrity 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)

उम्मीदवारों को इस सही में नहीं लिखना चाहिए
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Both land and water determine the outputs of agriculture or industry, being factors of production, along with capital & entrepreneurship.

Recently, there has been need for Shift from land productivity because -

1) declining yield of land → the food grains productivity reduced.

2) soil degradation because overexploitation of groundwater due to

water guzzling crops
of Rice 1kg needs 1600 l water

free electricity
leads to overuse & mindless use of waste

MSP regime
↳ MSP to rice, sugarcane & less focus on millets

3) rising population pressure → India becomes largest population of world (1.4 bn) → hence ↑ food requirements

4) urbanization & industrialization
↳ on limited land space available

5) instability of land ∴ landslides/earthquakes

Hence, shift towards Irrigation water productivity →

① use of micro irrigation →
drip irrigation, sprinkler irrigation

efficiency of
water usage
by crops ↑ by
50-70%

efficient
fertilization

better crop
harvest →
↑ yield

② collaboration with Israel for
such technologies + efforts
of ICAR with more R&D.

③ Precision agriculture → using
right amount of inputs at right
time, plus use of ICT →
e.g. using nano technology ~~of~~ ^{of} nanos
biotechnology of GM crops

Challenges faced →

- ① huge cost of such water efficient technologies.
- ② lack of R&D → use of conservative traditional methods
- ③ lack of trained manpower → poor extension services.
- ④ impeding water crisis → due to simultaneous droughts & floods
- ⑤ low awareness among farmers about drip irrigation, etc

Hence, need for →

- ① more R&D & innovations.
- ② capital infusion by government
- ③ financing through Green Bonds, Blue Bonds.
- ④ skilled manpower → new courses in agricultural universities

This is needed to double farmers' income (Dalwai panel), yet keep it sustainable.

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)

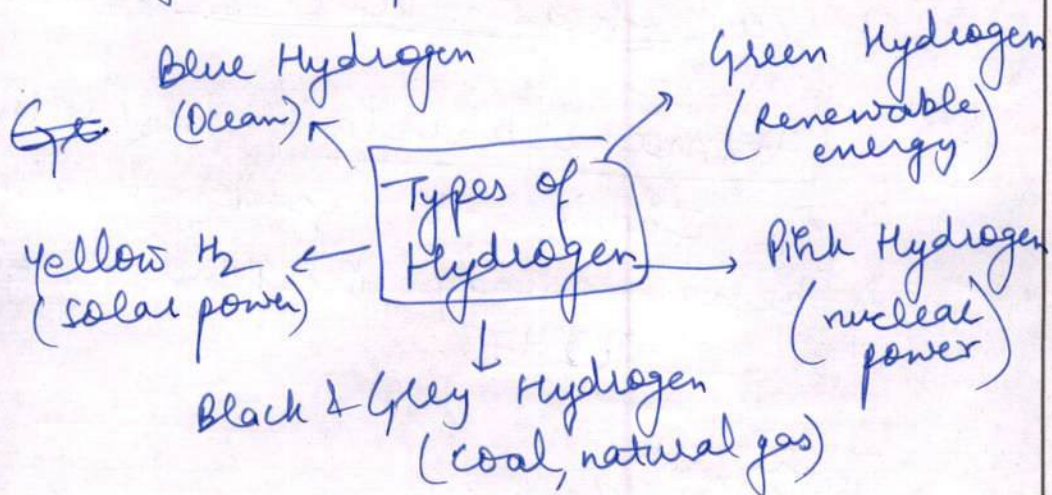
Examine the role that green hydrogen can play in unlocking the energy security of India. How can the National Green Hydrogen Mission help India in achieving its energy goals? (Answer in 250 words)

उम्मीदवारों को इस इतिहास में नहीं लिखना चाहिए
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"Hydrogen will soon be the new oil."

The rising population & increasing energy needs of India, necessitate for alternative sources of energy which are sustainable → Hydrogen being the prime of them.



Green Hydrogen: Unlock energy security of India

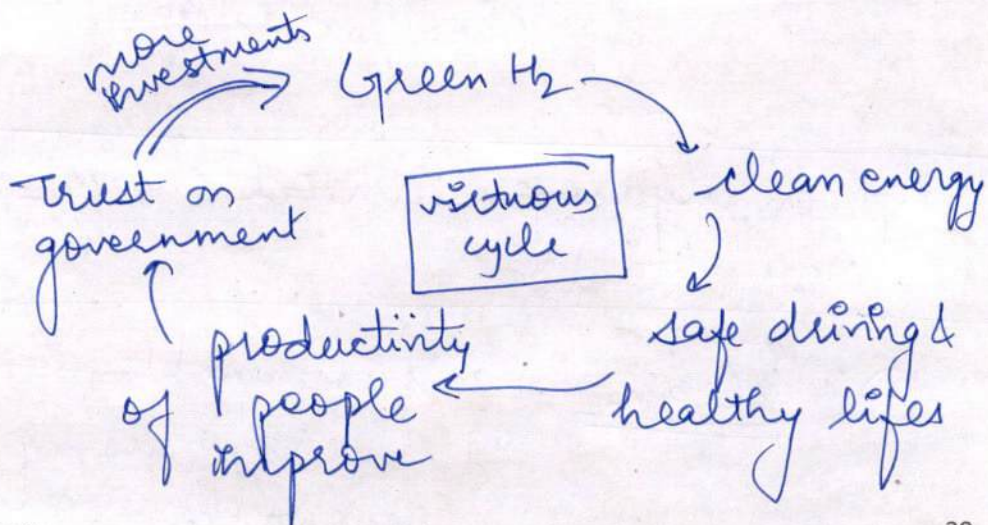
① Clean → sustainable source of energy using renewable sources (only water as byproduct)

② raise production of energy \Rightarrow reduce imports \Rightarrow save forex reserves \Rightarrow improve Balance of payment

③ boost to industrial sector \rightarrow wide applicability in all spheres of iron & steel industry

④ Sustainable Mobility \rightarrow reduce pollution, release of harmful gases.
Hence, health benefits also.

⑤ Atmanirbharata \rightarrow self reliance
of India to achieve aim
of being energy independent by 20247.



National Green Hydrogen Mission

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

The aim of GOI to enhance production of Green H_2 to 5 mn tonnes through →

- 1) more Investments in hydrogen infrastructure
- 2) more research & innovations in this sunrise sector
- 3) enhancing global collaborations of Germany, Denmark
- 4) give boost to Green Grids Initiative & help achieve INDCs of India.

Yet, challenges remain → difficulty in handling highly inflammable H_2

↓

difficult to streamline entire process → storage problem.

↓

lack of usage & awareness among people.

Hence, push to National Green H_2 mission necessary to achieve PANCHAMRIT.

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)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
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India being a welfare state aims at ensuring social security & EASE OF LIVING to all people — from rich to poor.

The debate on transition from minimum wage to living wage holds both sides of arguments.

(I) favour of moving to living wage
ie. BENEFITS of adoption of living wage

1) DSRs — article 38 & 39
to reduce inequalities
↳ article 42 directly mentions 'Living wage'.

2) Failure of states to ensure minimum wages → lack of uniformity across states

3] discrimination based on gender
 ↳ women not get equal wages
 ↳ goes against article 41.

4] huge informalization of workforce
 ↳ over 90% lacks social security
 & minimum wages.

5] Denial of minimum wages →
 leads to poverty, inequalities
 (Oxfam Time to care report: 1% owns
 40% wealth)

Living wages will tackle these issues
 & ensure
 ↳ sustainable livelihood.
 ↳ quality of life of dignity

More importantly, necessary for
vulnerable

↳ PWD ↳ Transgenders

II Against shifting to living wage

ie. CONSTRAINTS in adoption of living wage
 1] minimum wage is statutorily
mandated through Minimum
 wages Act-

2) Lack of clarity over definition of living wage → might increase inequality.

3) easy to enforce minimum wage than living wage : Judicial intervention necessary

4) Living wage is subjective & will differ from person to person
↳ rich will need more as per high standard of living.

But, minimum wage is the base minimum, a 'floor wage' to ensure survival for all.

Hence, there is need for. →

- ① enforcement of minimum wages
- ② streamline & bring uniformity in minimum wages across states
- ③ proactive bureaucracy to keep check.

This will fulfil SDG 1 = No poverty
& SDG 10 = reduce inequalities

14.

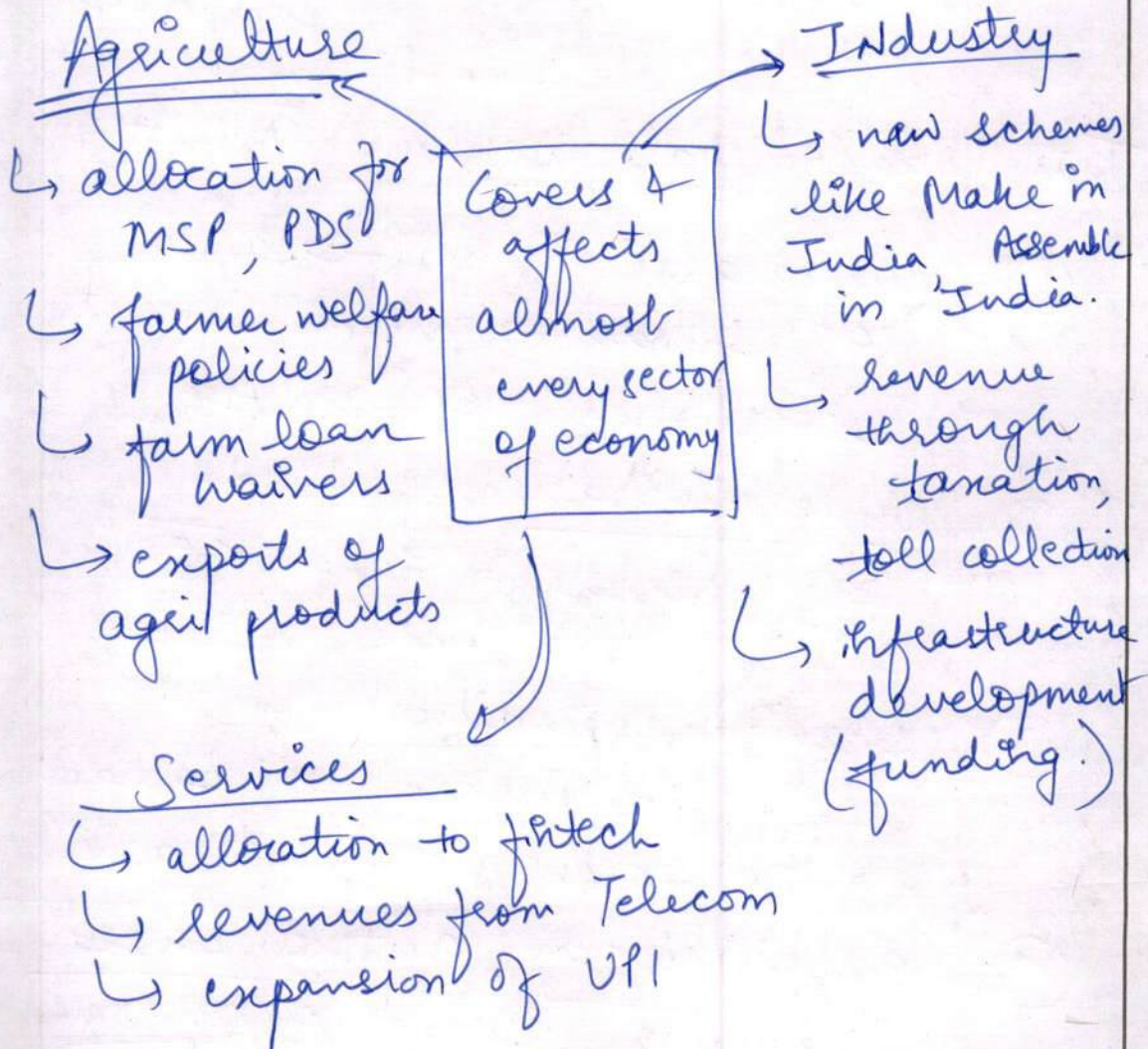
केंद्रीय बजट भारतीय अर्थव्यवस्था के लगभग हर क्षेत्रक को प्रभावित करता है, फिर भी न तो बजटीय प्रक्रियाएं पर्याप्त सार्वजनिक जांच के दायरे में आती हैं और न ही बजट नीतियां। क्या आप इस कथन से सहमत हैं? अपने उत्तर का औचित्य सिद्ध कीजिए। (उत्तर 250 शब्दों में दीजिए)

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)

उम्मीदवारों को इस हशिग में नहीं लिखना चाहिए
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The Budget is the document highlighting the expenditure & revenue of the government, the estimates of current year as well as actual figures of preceding year.



Budgetary process & budgetary policies not in substantial public scrutiny

उम्मीदवारों को
इस हार्डिप में
नहीं लिखना
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→ the internal discussions
& debates not live
streamlined.

→ meetings of parliamentary
committees & DRSCs
not disclosed.

→ only key
dimensions
known

of total
allocation
in public
but sub-
components
as per
ministry.

This leads to challenges like:

① misfeasance & malfeasance
of funds → mismanagement,
corruption of MPLADS

② underutilization of funds
of Nibbhaya funds < 50%
utilized.

③ skewed expenditures
of Beti Padhao Beti Bachao
70% - 80% allocation to ad.

④ emphasis on output based
framing instead of outcome
based

Q number of schools & hospitals counted, not quality of education & health outcomes.

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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But, Budgetary process & policies are under public scrutiny.

→ the accountability → entire budgetary document checked by Parliament over executive is in a way people's scrutiny as they vote & select MPs/MLAs → sub-targets are also mentioned

→ The opposition keeps check through question hour, adjournment-motion, etc.

Hence, further there is need to ensure

- ① more transparency
- ② replies - timely & effective to RTI queries
- ③ live streaming of budget preparation meetings

This will ensure people trust in government.

15.

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

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

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

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India is the largest milk producing country \Rightarrow about 190 mn tonnes constituting 24% of global production.

The transformation from Milk Deficit $\xrightarrow{\text{White Revolution}}$ Milk surplus
(Dr. verghese kurien efforts)

White revolution led to \rightarrow

- ① \uparrow production of milk
- ② \uparrow cattle rearing & livestock farming
- ③ enhanced breeds of cows
- ④ export of milk & milk products globally

⑤ cooperative farming & rise of FPOs.

⑥ better use of technology.

Yet, productivity of dairy animals remains a concern because:-

① Less & poor fodder is fed to the cows & buffaloes, reducing the milk production.

② veterinary usage of drugs, medicines to increase milk production (eg: injections of colostrum) affect dairy animals in long run (despite short term gains) → reduce quality of milk & productivity

③ farmers focus on subsistence farming → focussing on self needs of family, and not aim at increasing production for export sake.

④ Less focus on genetic engineering → to produce

hybrid cattle → with enhanced milk production ∴

- a) conservative mindset of farmers
- b) risks of genetic manipulation on biodiversity.
- c) associated costs.

⑤ failure of FPOs & cooperatives
due to

- a) lack of coordination
- b) poor marketing & branding
- c) financing challenges

Hence, there is need to →

- 1] enhance incentives for farmers to ↑ export of milk
- 2] focus on food processing industry to enhance value addition to milk to form cheese, butter, ice cream (currently <10% milk processed) → need cold storage & infrastructure.
- 3] use of biotechnology for better breeds of dairy animals

to rejuvenate the WHITE REVOLUTION
to make India the DAIRY HUB of world.

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।
Candidates must not write on this margin

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Climate change is prevalent, as seen from the rising figures of

<u>CO₂</u>	<u>Methane</u>	<u>NO_x</u>
<u>150%</u> increase (419 ppm now)	<u>260%</u> rise	<u>123%</u> increase

owing partly to agriculture.

Climate Change due to Agriculture

- ① Groundwater pollution → water guzzling crops grown
(∴ MSP) e.g.: Rice, sugarcane
→ free electricity leads to overextraction
- ② Air pollution ⇒ stubble burning
by farmers of Punjab, Haryana
- ③ Methane pollution ⇒ livestocks
release methane through rumination
+ dung

In turn climate change responsible
for crop failure

-
- ```
graph TD; A[More fertilizers to ↑ production] --> B[Soil degradation]; B --> C[Heat waves, loss of soil fertility]; C --> D[climate change]; D --> E[loss of crops productivity]; E --> F[crop failure]; F --> A;
```
- More fertilizers to ↑ production
- crop failure
- loss of crops productivity
- climate change
- Heat waves, loss of soil fertility
- Soil degradation
- Vicious cycle
- 42



# National Agricultural Disaster Management Plan

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए  
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Measures to strengthen resilience of farming community -

- ① climate smart agriculture  
≡ millets farming
- ② crop rotation, contour farming, terrace farming, mixed cropping  
↳ enhance soil fertility & stability
- ③ conservation agriculture  
≡ zero tillage, ZBNF.
- ④ Organic farming → using Teewarrit, Beejwarrit, Waphasa, mulching. ≡ Sikkim.
- ⑤ Precision agriculture → use micro irrigation, fertigation
- ⑥ Genetic engineering → to produce pest & drought resistant crops

Yet, strategy has challenges of → finances  
↓  
farmer awareness      R&D      extension services

which need to be tackled to ensure  
CLIMATE FRIENDLY AGRICULTURE



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)

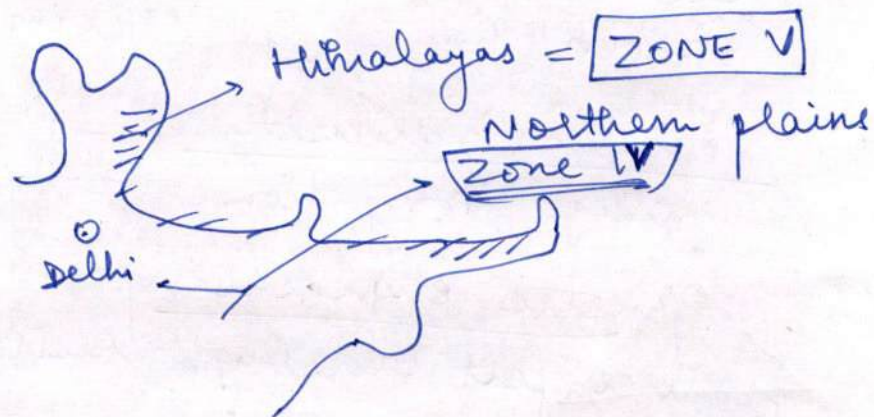
Some regions in India, including Delhi, are highly vulnerable to the impact of earthquakes originating in the Himalayas. Discuss What institutional measures have been taken to mitigate earthquake losses in India? Do you think there are significant gaps that still exist? (Answer in 250 words)

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उम्मीदवारों को  
इस क्राशिए में  
नहीं लिखना  
चाहिए  
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write on  
this margin

Earthquakes refer to the release of seismic energy from earth's crust due to movement of lithospheric plates. It leads to huge destruction of life & property.

Vulnerability to earthquakes originating in Himalayas



- ① High population density in North India → more loss & damage
- ② Zones & hotbeds of seismic instability.



- ③ Huge infrastructure outlays  
↳ rails, roads → vulnerable!
- ④ huge rainfall during monsoon  
destabilize soil → landslides  
trigger earthquakes
- ⑤ Illegal sand mining in Himalayas  
destabilize land.
- ⑥ climate change induced avalanches
- ⑦ unsustainable tourism.
- ⑧ overloading of superincumbent  
pressure of buildings, restaurants

### Institutional measures taken to mitigate earthquake

#### Structural

- earthquake resilient buildings
- retention walls to prevent earthquakes
- shelter houses for rehabilitation

#### Non Structural

- hazard mapping
- Early warning system.
- mock drills
- capacity building of masses

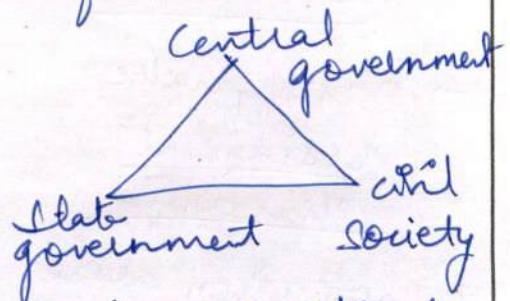


## Significant gaps still exist

- ① lack of proactive response of NDRF.
- ② lack of coordination between NDRF & SDRF.
- ③ unstable tourism → waste disposal, high footfall of tourists
- ④ nexus between bureaucrats, corporates & land mining mafia
- ⑤ more focus on rehabilitation, reconstruction & relief (RRR) rather than prevention, preparedness & mitigation.

Hence, the need of the hour is to

1] collaboration between



2] better early warning systems  
of use NISAR.

to Build Back Better!



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)

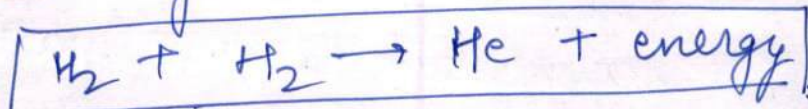
उम्मीदवारों को इस भाग में नहीं लिखना चाहिए  
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Nuclear energy is derived from the powerful forces of the nucleus.  
→ harnessing the energy at atomic & sub atomic levels.

The recently announced net energy gain in nuclear fusion points towards

→ The reaction of nuclear fusion is v. challenging & requires huge energy to bring 2  $H_2$  atoms together:



The release of energy has been increased over & above that required to initiate the process!

→ guide to create Artificial Sun of Tokamak

∴ huge scientific breakthrough.



# Advantages of nuclear fusion based power production →

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
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- ① cleaner & greener energy
  - ↳ huge amount of energy.
  - ↳ sustainable process, less pollution
- ② less nuclear waste as compared to nuclear fission.
- ③ equivalent to energy produced within the sun: The ultimate source of energy.
- ④ Technological advancements harnessed across varied spheres

→ Transportation — powers mobility for long distance.

→ Medical → use for diagnosis & treatment of diseases  
≡ chemotherapy

→ Defence → nuclear triad  
≡ INS Arihant

→ Space exploration → light weight, more durable fuel  
→ ↑ mission life



→ Scientific research  
of gravitational waves study

## Limitations of using nuclear fusion at commercial scale

- ① difficult to harness energy  
↳ requires huge outside source  
of energy which is mostly  
non-sustainable (coal)
- ② lack of skilled & trained man-  
power to handle such complex  
process.
- ③ requires huge capital investment  
↳ trade off with social expenditure
- ④ opposition by people →  
of against Jaitapur power  
plant
- ⑤ issue of land acquisition
- ⑥ nuclear waste + disasters  
of Fukushima, Chernobyl.

Hence, need for better oversight,  
R&D, financing to explore the  
SUNRISE SECTOR of FUTURE ENERGY



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 हिसाब में नहीं लिखना चाहिए  
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Money laundering refers to illegally routing money from illegal activities. It involves:

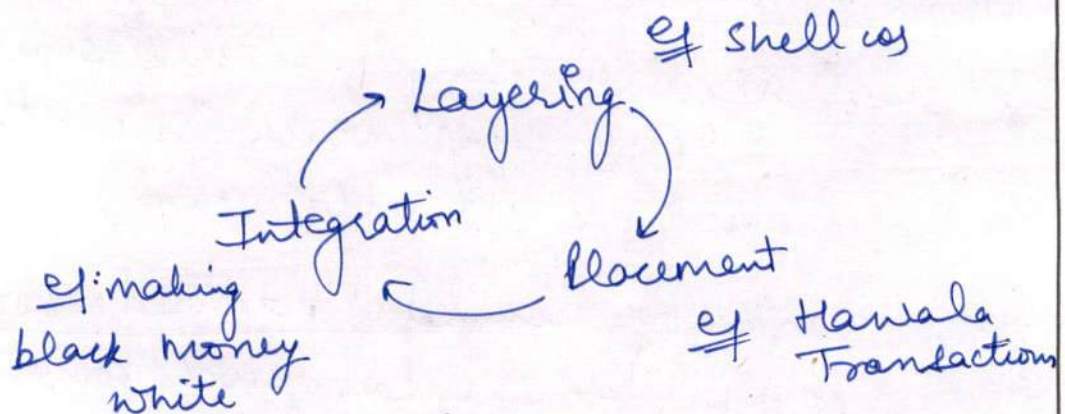
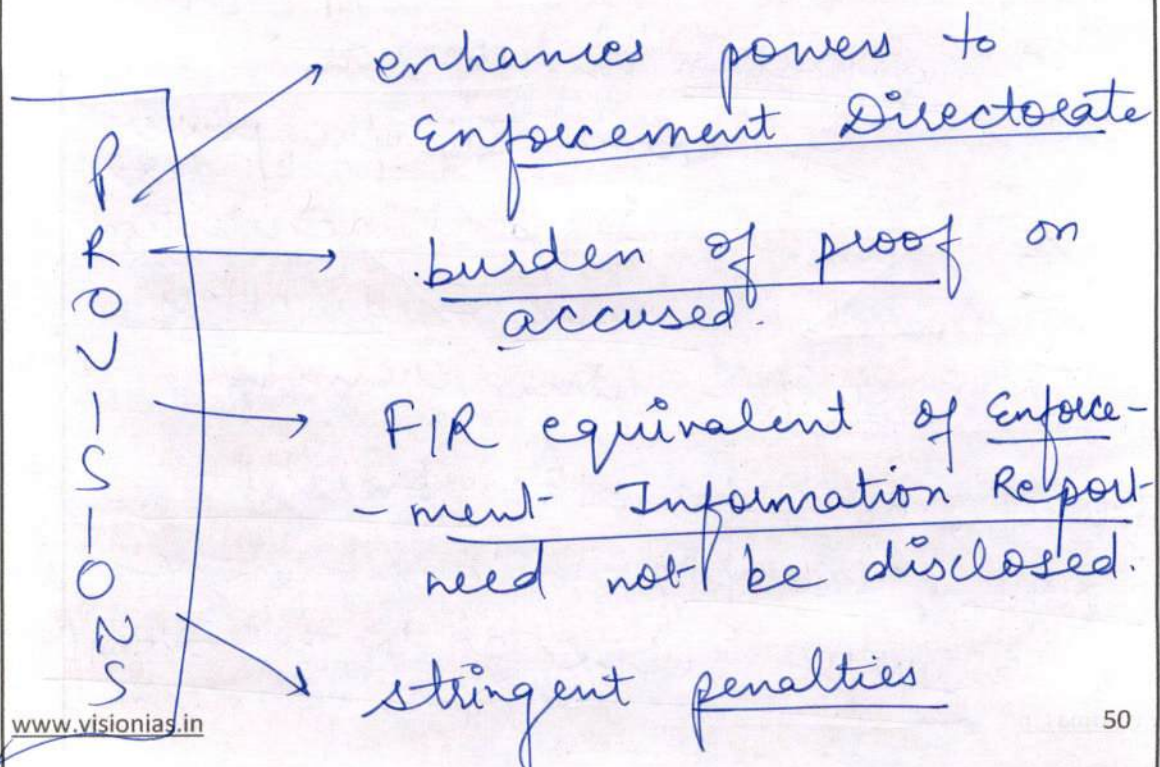


Fig: M.L.

## Recent Amendment to PMLA 2002





The amendment is efficient in tackling money laundering as →

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- ① proceeds of crime to be taken by ED immediately.
- ② money laundering considered a standalone crime → as a grave threat to national security.
- ③ powers to ED enhanced to ensure stringent crackdown on the money launderers.
- ④ Supreme Court also favoured that double burden of proof lies to take up the matter by judiciary ⇒ to streamline the investigation & justice delivery.

But, amendment is challenged on following grounds ⇒

- ① Burden of proof on accused  
→ against natural law of justice  
→ goes against innocent until proven guilty.



② Makes the investigative process itself punishment.

③ ED given police powers → out of jurisdiction.

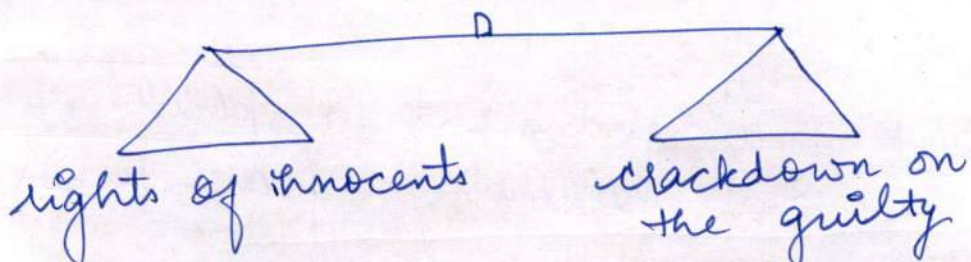
④ gives ED tyrannical powers → establishing Oswellian state → where innocent can be accused too.

⑤ Arrested person need not be informed of reason of arrest → goes against art 22.

⑥ passed as money bill to bypass RS  
Currently, this matter under consideration of larger SC bench.

### Way Forward

① Balance needed between



② principle of necessity & proportionality to be applied to ED.

③ Global collaboration with FATF, Interpol → SDG 17

to curb menace of Money Laundering



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

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

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"The Indian Ocean Region<sup>(IOR)</sup> is the new hotbet of security threats." — Fareed Zakaria

The centre of gravity of emerging security threats has shifted to IOR, impacting India's security.

### Security Threats

### Direct Bearing on India's Maritime Border Interests.

① Piracy: Illegal entry of men through routes of ocean → involved in unorganised crimes of drug trafficking

→ makes Indian coastal states vulnerable to menace of drugs, arms, human trafficking

② Maritime border disputes of with Sri Lanka on Katchatheevu island.

→ leads to clashes & disagreements - difficult to arrive at consensus



### ③ Terrorism

through the route of water  
e.g. attackers on Mumbai (Taj)  
came through Ocean.

lack of proactive response & coordination among Indian forces. + rise in fundamentalism & Terrorism

### ④ Climate change

the biggest threat of 21<sup>st</sup> century.

submergence of coastal <sup>states</sup> ~~nations~~ of Mumbai.

→ affect fishermen livelihood.

### ⑤ Illegal, unregulated fishing → ballast water released.

depletes fisheries resources! harm coastal states economy.

### ⑥ Surveillance of China

e.g. recently Yuan Wang 5 docked at Hambantota.  
→ (An amphibious power)

→ threat not just to India's maritime borders but entire territory.

All these PROBLEMS WITHOUT BORDERS

have created threat to Indian sovereignty territorial integrity, economy & coastal security.



# Robust strategy to deal with threats

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

① Global collaboration (SDG 17)  
⇒ with UN to enforce UNCLOS → China aggression  
⇒ Regulate High Seas

② Bilateral cooperation  
with Sri Lanka → the nearest maritime neighbour.

③ enhance military → i.e. Naval power across coasts  
⇒ Naval Security Guards

④ Sensitization of people → behavioural change to reduce global warming

⑤ secure livelihood of fisher-men & coastal communities.

⑥ Coordination with Interpol to curb terrorism

A multi-pronged strategy needed to secure maritime borders for Peace & Tranquility



## SPACE FOR ROUGH WORK