



**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. : 1217762

अभ्यर्थी का नाम/Name of Student : Animesh Pradhan

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

English

तारीख  
Date

27/08/2023

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

केंद्र  
Centre

Delhi - 03

निरीक्षक के हस्ताक्षर  
Invigilator's Signature

Ashs

<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>
<p>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।</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>
<p>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।</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>
<p>3 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>
<p>4 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>
<p>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।</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>
<p>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।</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>
<p>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।</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>
<p>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।</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
परीक्षक के हस्ताक्षर Signature of Examiner(s)	

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

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



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निर्धारित समय: तीन घंटे

Time Allowed: **Three Hours**

अधिकतम अंक: 250

Maximum Marks: 250

**प्रश्न-पत्र संबंधी विशेष अनुदेश**

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

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

सभी प्रश्न अनिवार्य हैं।

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

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

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

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

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

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

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

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

*All questions are compulsory.*

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

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

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

*Keep the word limit indicated in the questions in mind.*

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

## EVALUATION INDICATORS

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

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

**All the Best**

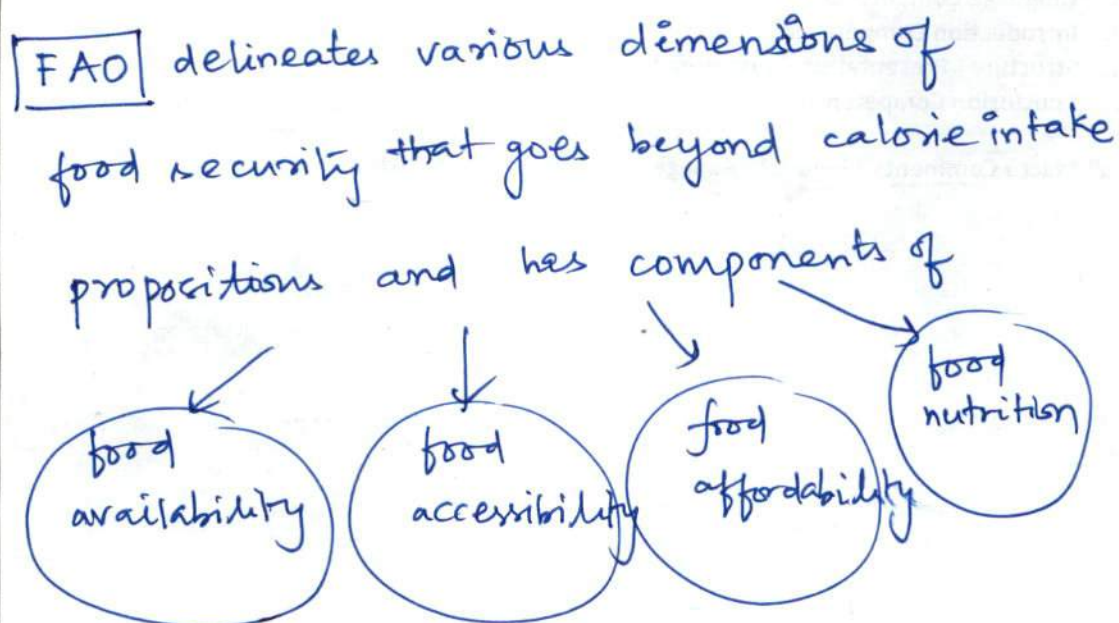
1.

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

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

10

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



India's status in terms of ensuring food security →

① **Food Availability** - With adequate production

of food grains (72% rice & grain), India is the largest rice exporter, 2nd largest producer, 2nd largest fruits/vegetable production & 2nd largest milk production

But, low production of pulses, palm oil and limited millet production (16 MT - 5% of grain)

② Food Accessibility

Positive	shortcomings
<ul style="list-style-type: none"> <li>→ <u>NFSA, 2013</u> led PDS system covers 67% of population</li> <li>→ Automation of fair price shops (e-POS) &amp; <u>Aadhar seeding</u> helps in robustness</li> </ul>	<ul style="list-style-type: none"> <li>→ <u>Logistics sector</u> underdeveloped</li> <li>→ <u>Food wastage</u> accounts for ~35% of loss</li> <li>→ 16% of Indians under multidimensional poverty line</li> </ul>

③ Food Affordability

Positive	shortcoming
<ul style="list-style-type: none"> <li>- Schemes like <u>PM Garib Kalyan Yojana</u>, PDS &amp; subsidy on food, <u>Ujjwala</u> scheme help in affordability.</li> </ul>	<ul style="list-style-type: none"> <li>- Food inflation rising, as seen in <u>tomatoes &amp; wheat</u>.</li> </ul>

④ Nutrition

Positive	shortcoming
<ul style="list-style-type: none"> <li>- PM POSHAN, ICDS, Anaemia Mukta Bharat, <u>Rice Fortification</u> progr</li> </ul>	<ul style="list-style-type: none"> <li>- 35% stunting, 18% wastly</li> <li>- 50% women anaemic</li> <li>- Rise in obesity</li> </ul>

Way Forward

- aggressive fertilization & PM POSHAN
- Tamil Nadu Breakfast Policy
- Millet production increase
- Strengthen PDS (Shanta Kumar Committee)

Hence SDG-1 of 'No Hunger' must be fulfilled to ensure food security

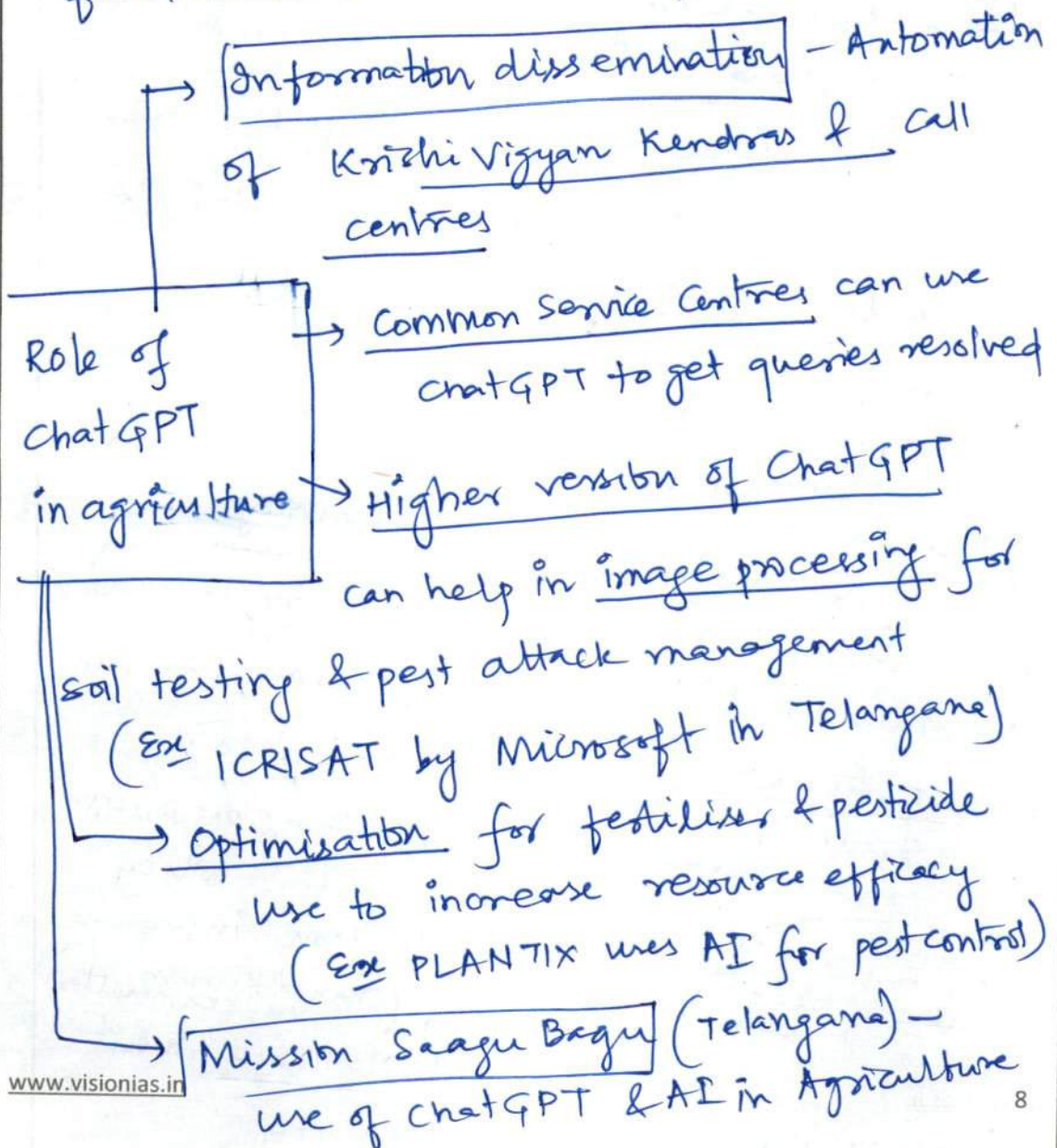
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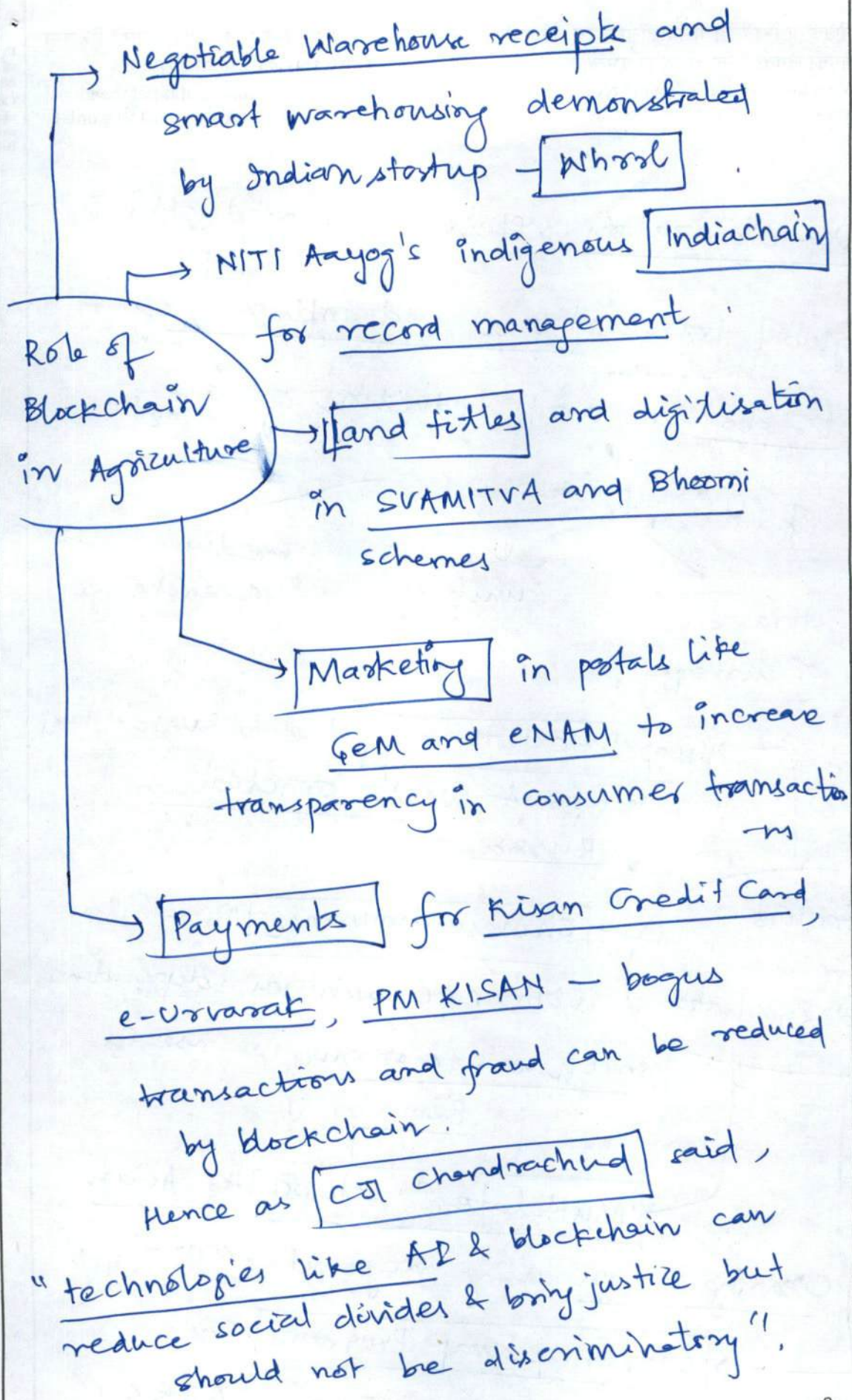
ब्लॉकचेन और चैटजीपीटी जैसी आधुनिक प्रौद्योगिकियां कृषि को अधिक कुशल और संधारणीय क्षेत्रक में बदलने की अपार क्षमता वाले शक्तिशाली साधन हैं। भारत के संदर्भ में चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)  
Modern technologies such as blockchain and ChatGPT are powerful tools with immense potential to transform agriculture into a more efficient and sustainable sector. Discuss in the context of India. (Answer in 150 words)

10

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

As per Accenture, chatGPT based AI technologies can add US \$ 1 trillion to Indian economy and emerging technology like blockchain will be used in 30% of fundamental economic operations.





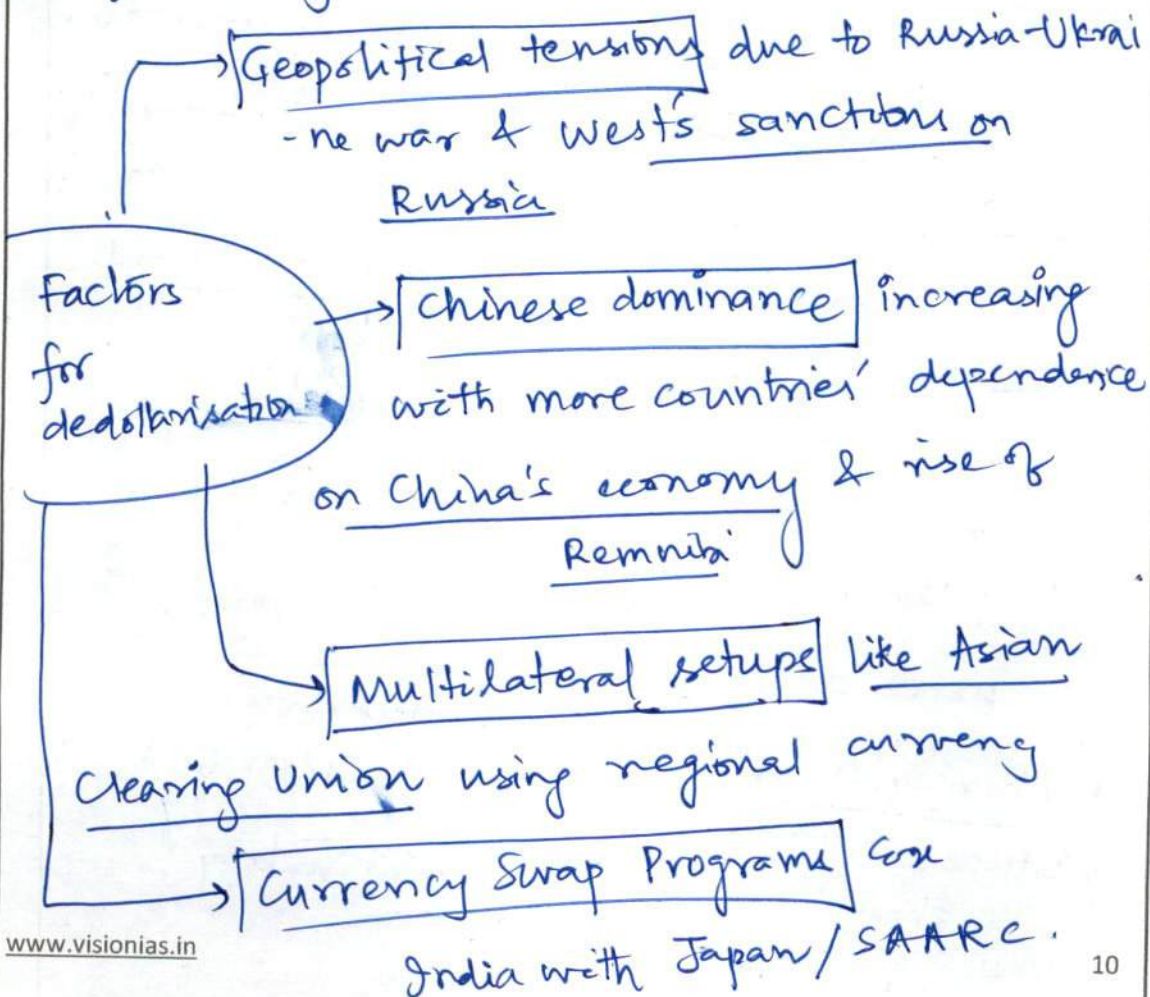
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वैश्विक अर्थव्यवस्था में वि-डॉलरीकरण की प्रवृत्ति में हालिया तेजी के लिए कौन-से कारक उत्तरदायी हैं? क्या आपको लगता है कि डॉलर का प्रभुत्व जल्द ही समाप्त हो जाएगा? (उत्तर 150 शब्दों में दीजिए)  
What factors have led to the recent acceleration in the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

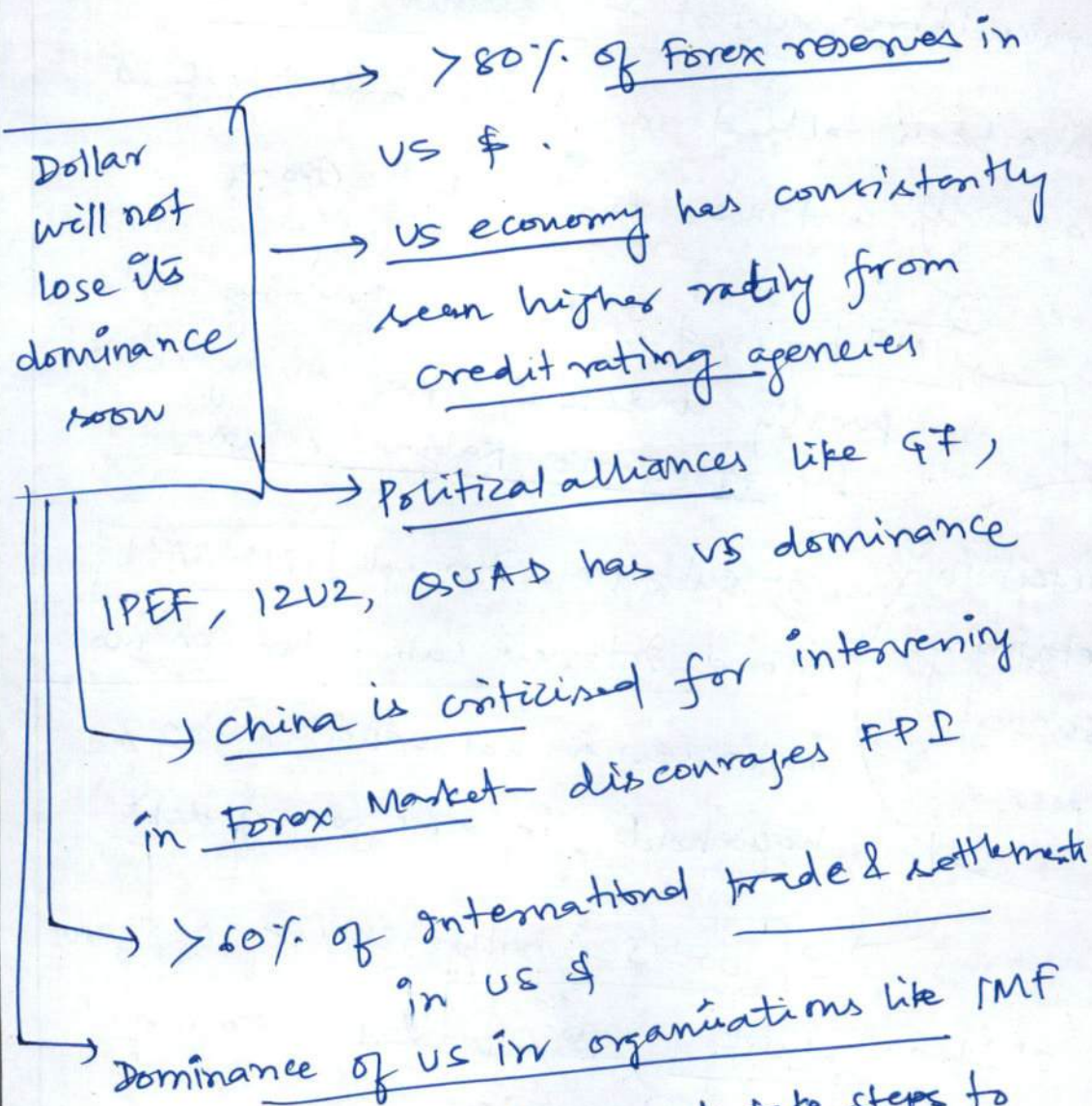
उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
Candidates are not to write on this margin

De-dollarization refers to the reduction in global transactions and influence of US dollar and reduction of usage

of US \$ as  
↓  
storage of currency      unit of value      medium of exchange



- Increased volatility in capital markets due to sudden withdrawals by FDIs.
- Reforms in IMF - Ex Inclusion of Chinese Yuan and increase in its strength.
- Rise of cryptocurrency and Bitcoin - reduction in US \$ transactions



Hence, India must take steps to benefit from the wave of dedollarisation but with calculated risks.

4.

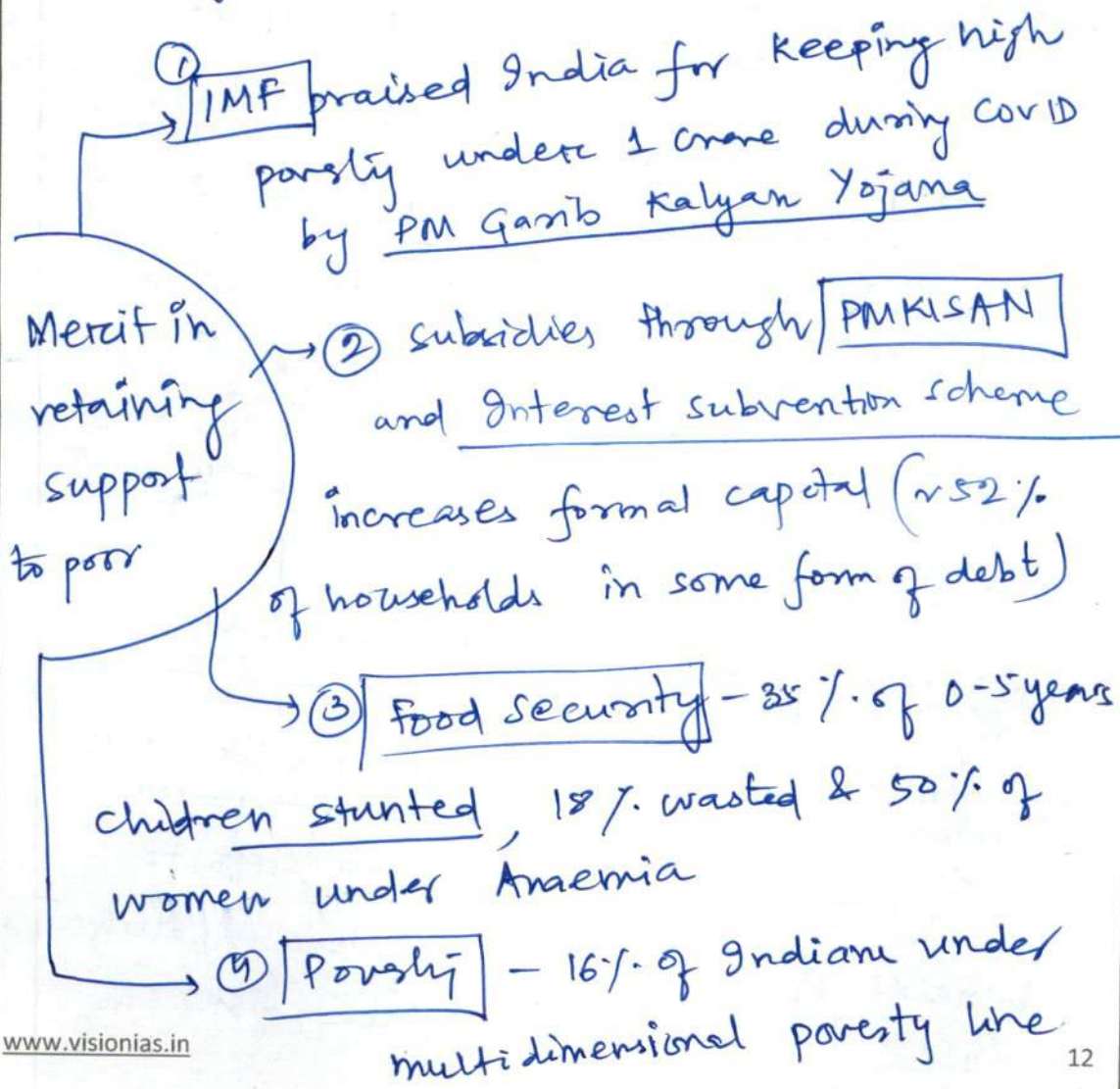
विकसित देशों द्वारा भारत पर खाद्य सब्सिडी व्यवस्था में बदलाव करने के अत्यधिक दबाव के बावजूद, भारत के लिए निर्धन व्यक्तियों हेतु अपना नीतिगत समर्थन बनाए रखना एक उचित कदम होगा। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

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)

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

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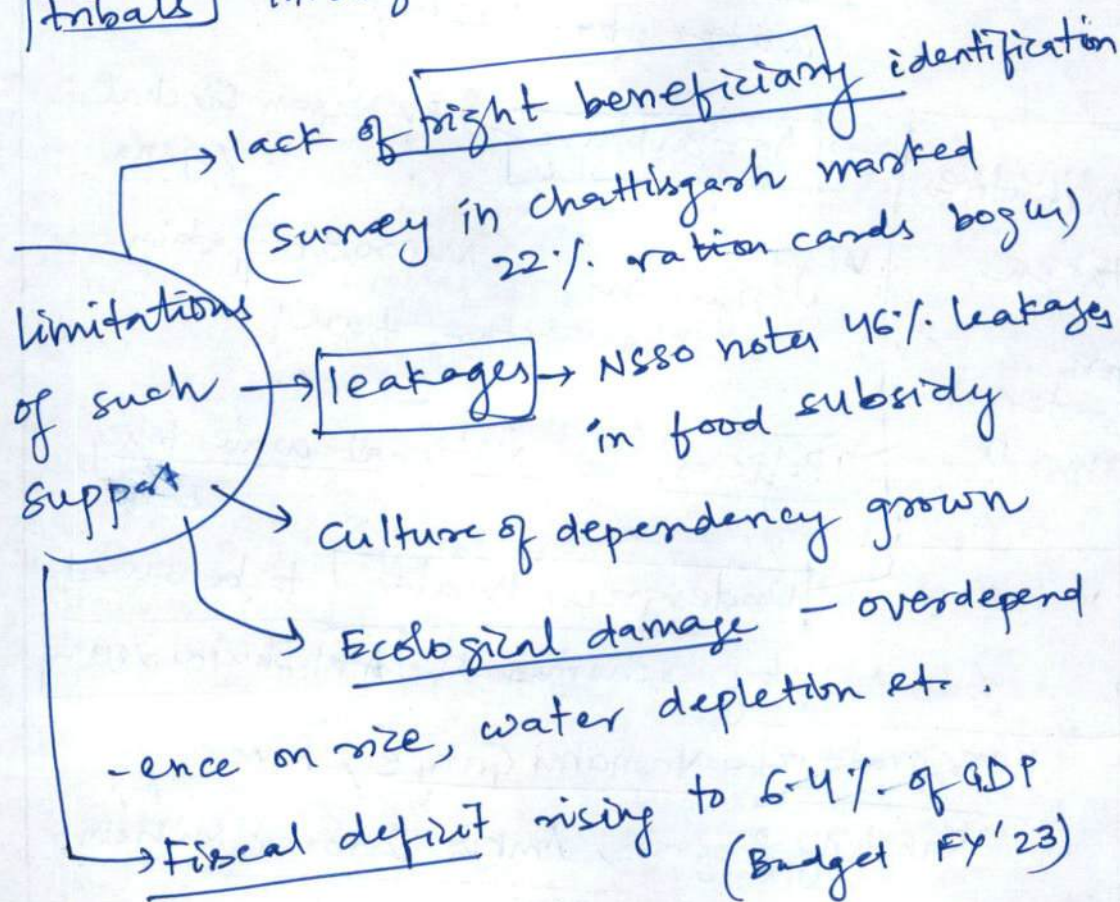
The various mandates of WTO of 'green' and 'amber' box and limitations of agricultural support & de minimis levels have been factled by India and its food subsidy continues to benefit crore.



→ ⑤ subsidy through PM Fasal Bima Yojana help in crop diversification & risk taking agriculture entrepreneurship.

→ ⑥ for urban poor, SVANIDHI, National Urban Livelihood Mission for employment generation & empowerment

→ ⑦ vulnerable section like women benefited through Mahila Shakti Karam Yojana, tribals through PM Vandhan Yojana etc.



Hence, India must continue to support poor to fulfill goals of SDG-142.

5.

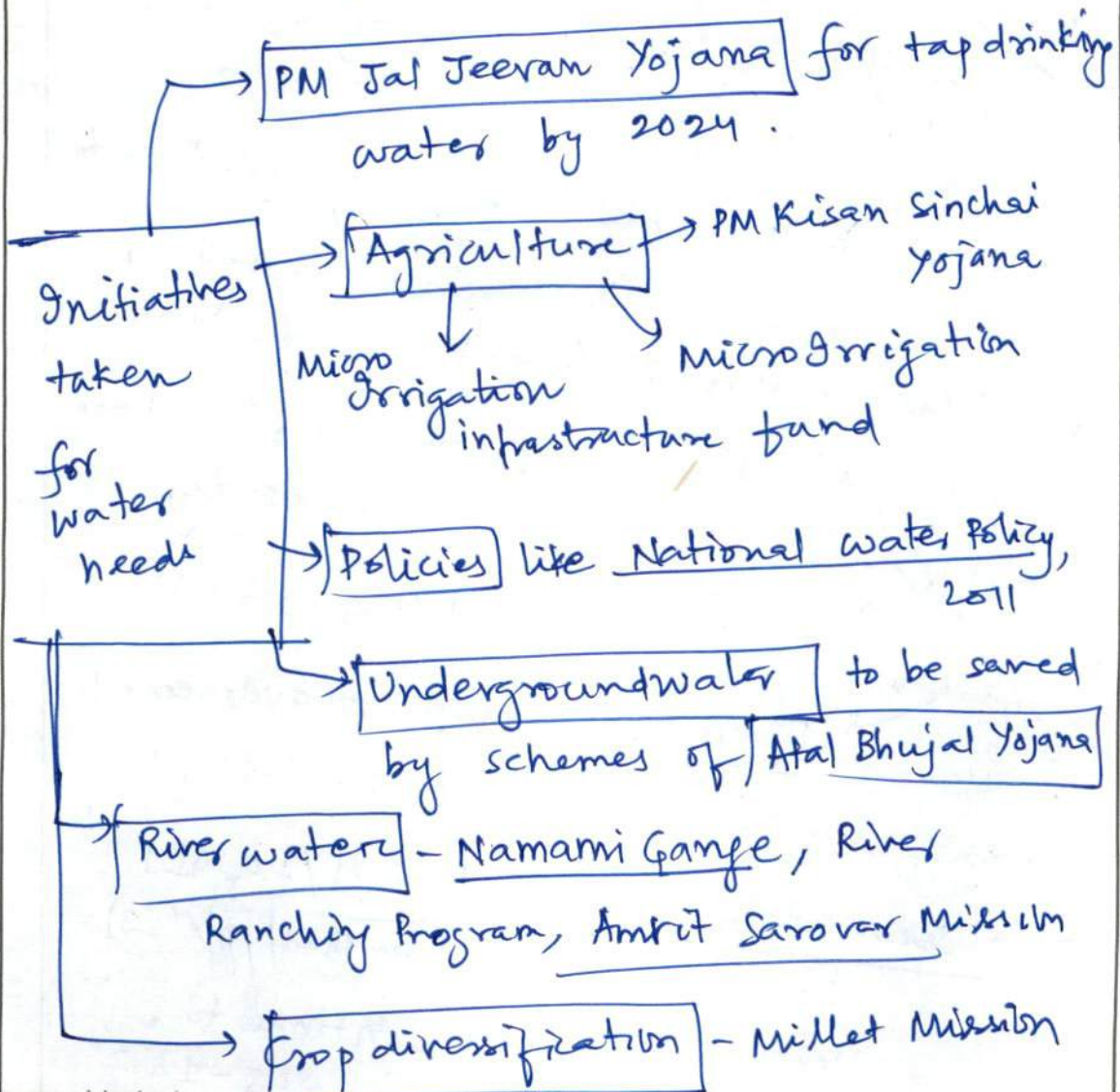
भारत की जल संबंधी जरूरतों को पूरा करने की दिशा में सरकार द्वारा कई पहलों की शुरुआत की गई है, परंतु जल की उपलब्धता और जल की गुणवत्ता जैसे मुद्दों पर अभी भी नीतिगत हस्तक्षेप की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

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)

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

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With 18% of world's population & 4% of water resources, India continues to be in tight rope to maintain water availability & quality.



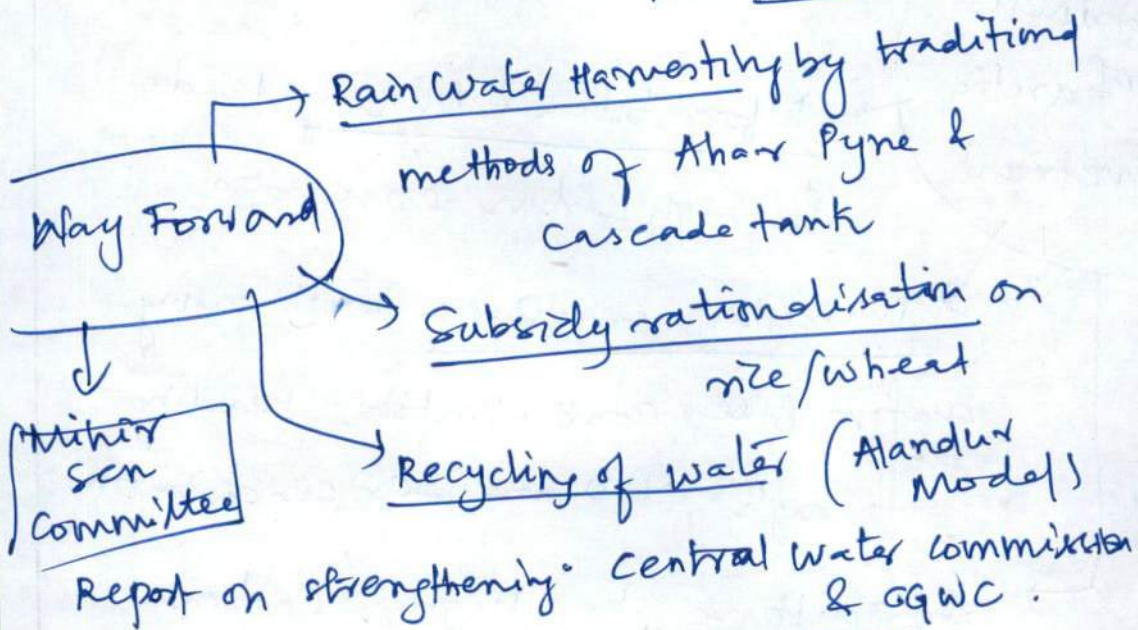
# Issues of

## Water Availability

- ① Per capita water availability reduced from  $6000\text{ m}^3$  (1947) to  $1340\text{ m}^3$  (2020)
- ② Groundwater depletion by 62% from 2007-17 (5th irrigation Census)
- ③ NITI Aayog notes 54% of urban area under acute water shortage

## Water Quality

- ① CGWB census - 14% of water tract heavily exploited
- ② 50% of rivers with nitrate emissions
- ③ Groundwater with uranium contamination, high salinity.
- ④ < 30% of sewage water treated.



Hence, to fulfill SDG-6 of clean water, conscious policy interventions are needed.

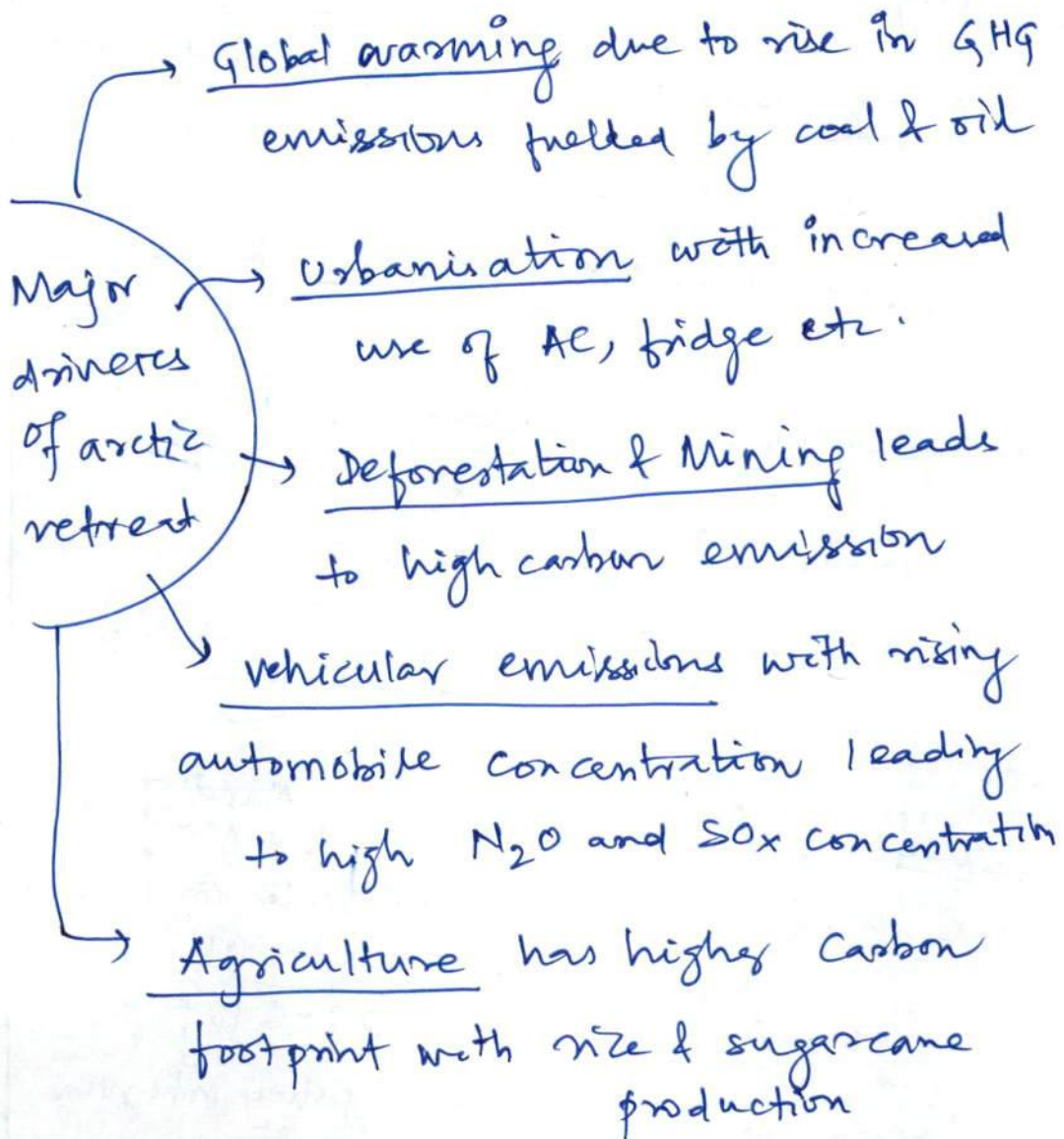
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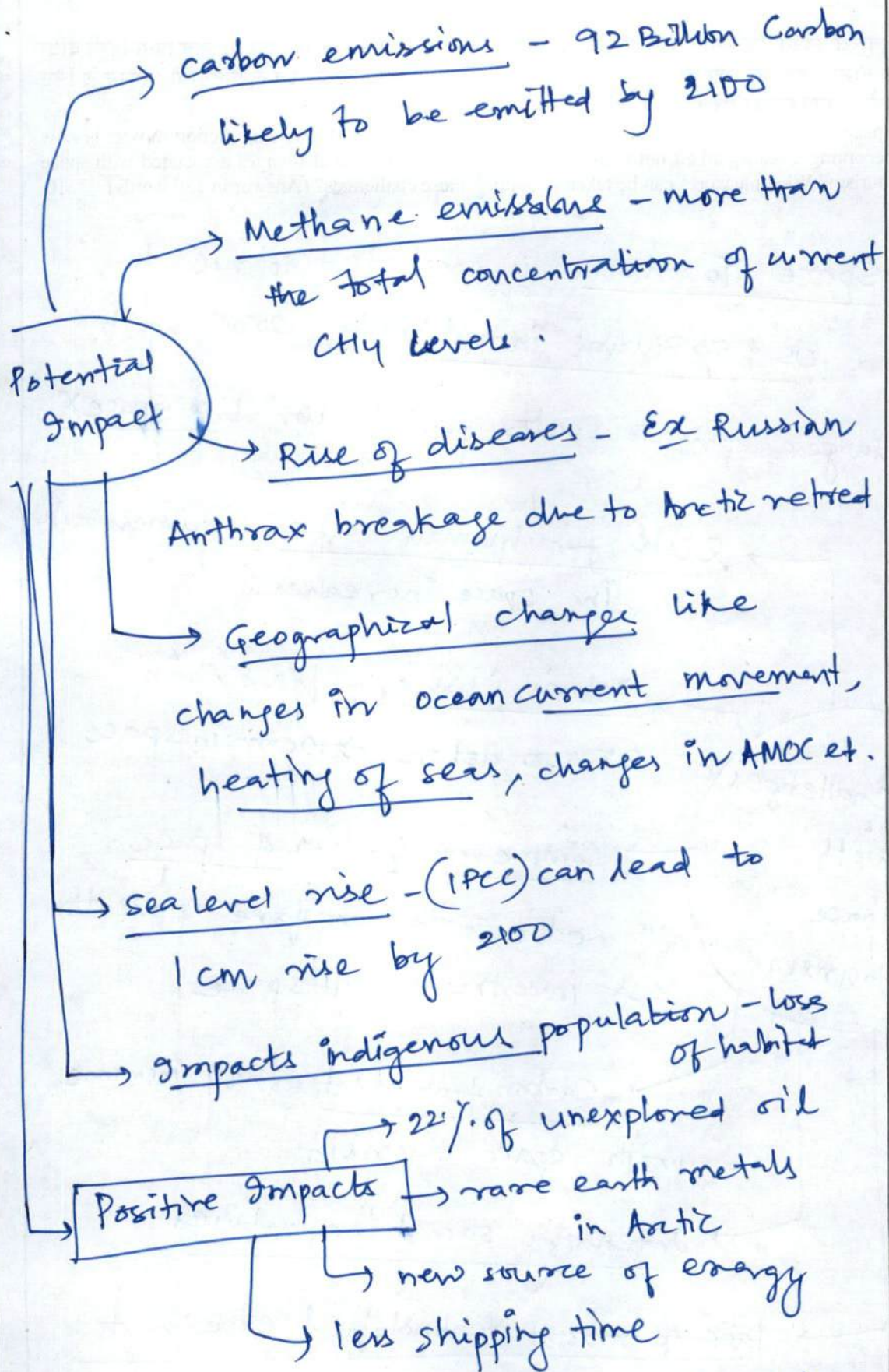
आर्कटिक में हिमनदों के पिघल कर संकुचित होने के लिए उत्तरदायी कारक क्या हैं? पारिस्थितिकी तंत्र पर आर्कटिक हिमनदों के पिघलने के संभावित प्रभाव का वर्णन कीजिए। (उत्तर 150 शब्दों में दीजिए)  
What are the major drivers of glacial retreat in the Arctic? Describe the potential impact of the retreat of Arctic glaciers on the ecosystem. (Answer in 150 words)

उम्मीदवारों को इस कश्चि में नही लिखना चाहिए  
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As per WMO, 40% of Arctic has lost its 40% of ice since 1975 acting as one of the 'tipping point' in anthropocene destruction.





Arctic must be supported with collaboration - fine efforts and SDG-13 targets of climate change must be met.

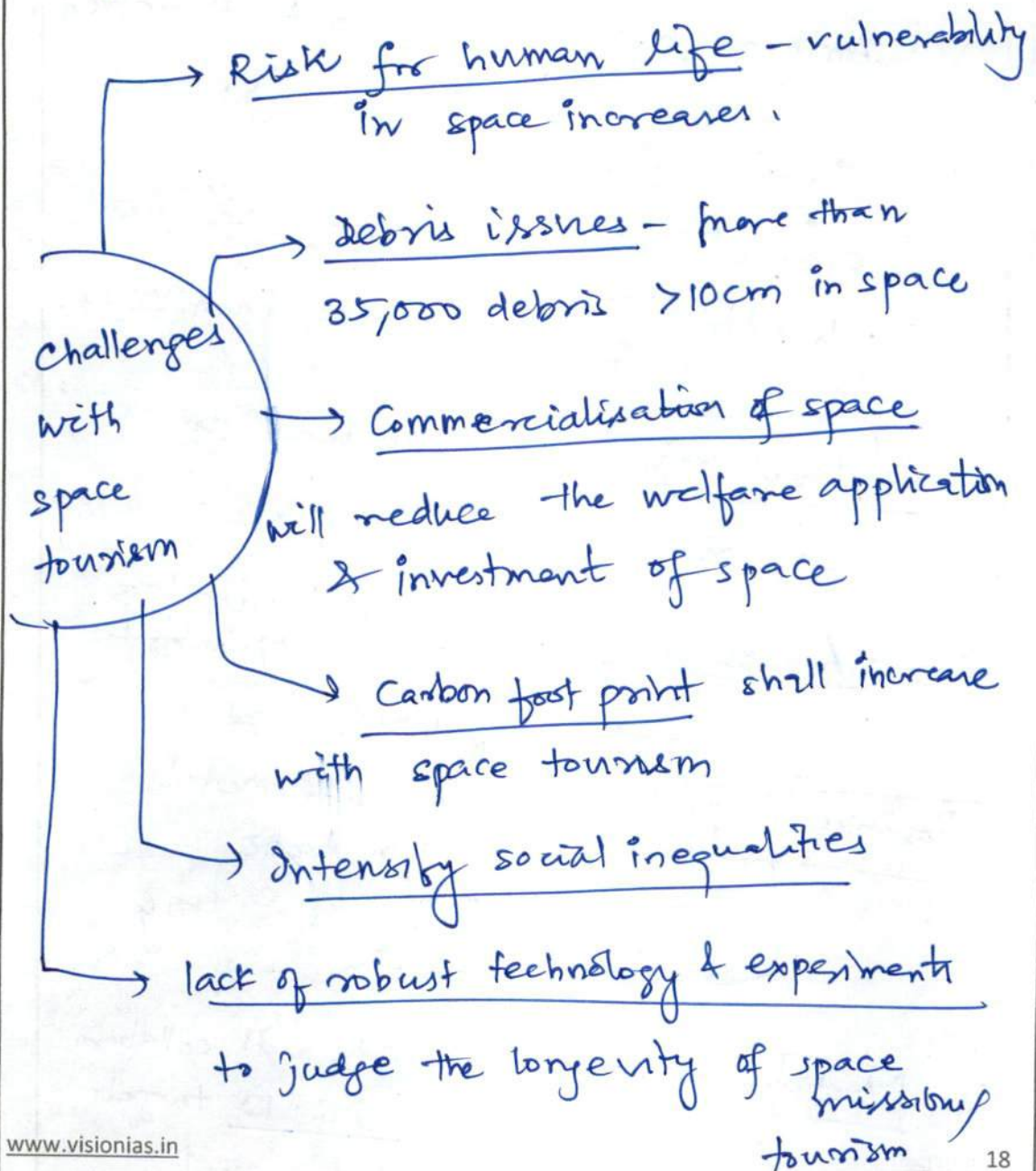
7.

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

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

Space Tourism is expected to rise to a US \$ 50 Billion industry by 2030 with larger private sector participation like SpaceX.



→ International protocols like Outer Space Treaty, Moon Treaty, Convention on Peaceful Use of Space etc.

Measures to address the challenges → Debris Removal Mechanisms like NASA's Debris Avoidance Manoeuvre (DAM) & ISRO's NETRA

→ larger private sector investment & facilitate usage of public infrastructure

→ Renewable mode of missions

Ex. JUICE Mission of EU uses  $100\text{km}^2$  of solar panel.

→ Utilise the proceeds of ~~space~~ space tourism for R&D and welfare activities.

With global space industry achieving new wonders through Chandrayaan, Asternik, JUICE etc., space tourism is the new norm, but must be ecologically sustainable.

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 क्वेश्चन में नहीं लिखना चाहिए • Candidates must not write on this margin

With high incidence of cancers fuelled by modern lifestyle and enormous expenditure on its treatment (Jairam Ramesh Committee) - PSC, technological interventions like CAR-T can be a major breakthrough.

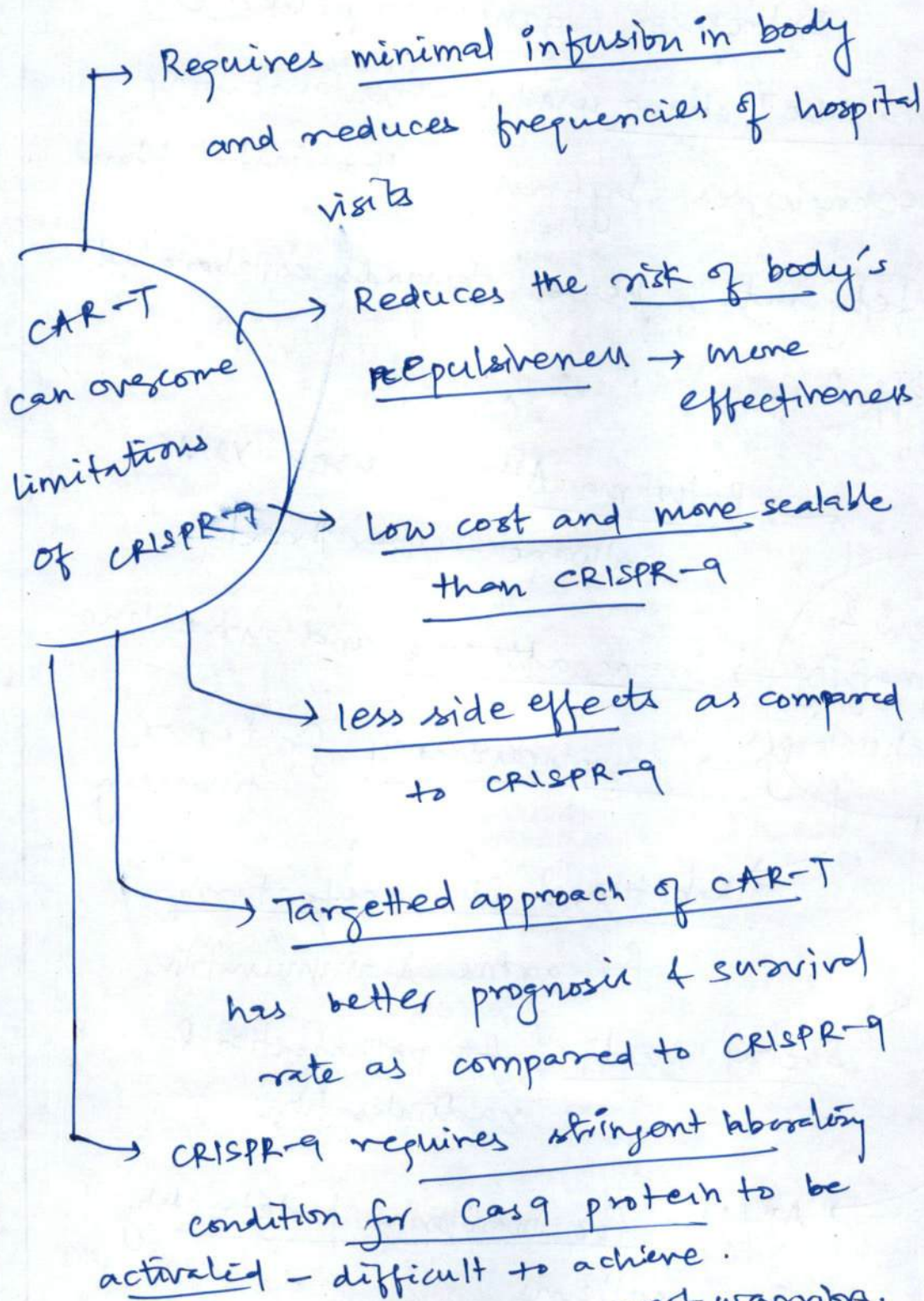
⇒ Chimeric Antigen Response - T cell (CAR-T)

uses genetic engineering to alter the immunity delivering T-cell that could encode targeted protein to kill the cancerous cells.

↔ This is an advancement to CRISPR-Cas9 technology where Cas9 protein was used with genetic scissor technology

to encode targeted genes to tackle cancerous cells.

उम्मीदवारों को इस इतिहास में नहीं लिखना चाहिए  
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So, cancer survivors are not warriors, but the ones who is going through the treatment itself is one, CAR-T therapy becomes the largest weapon in this fight.

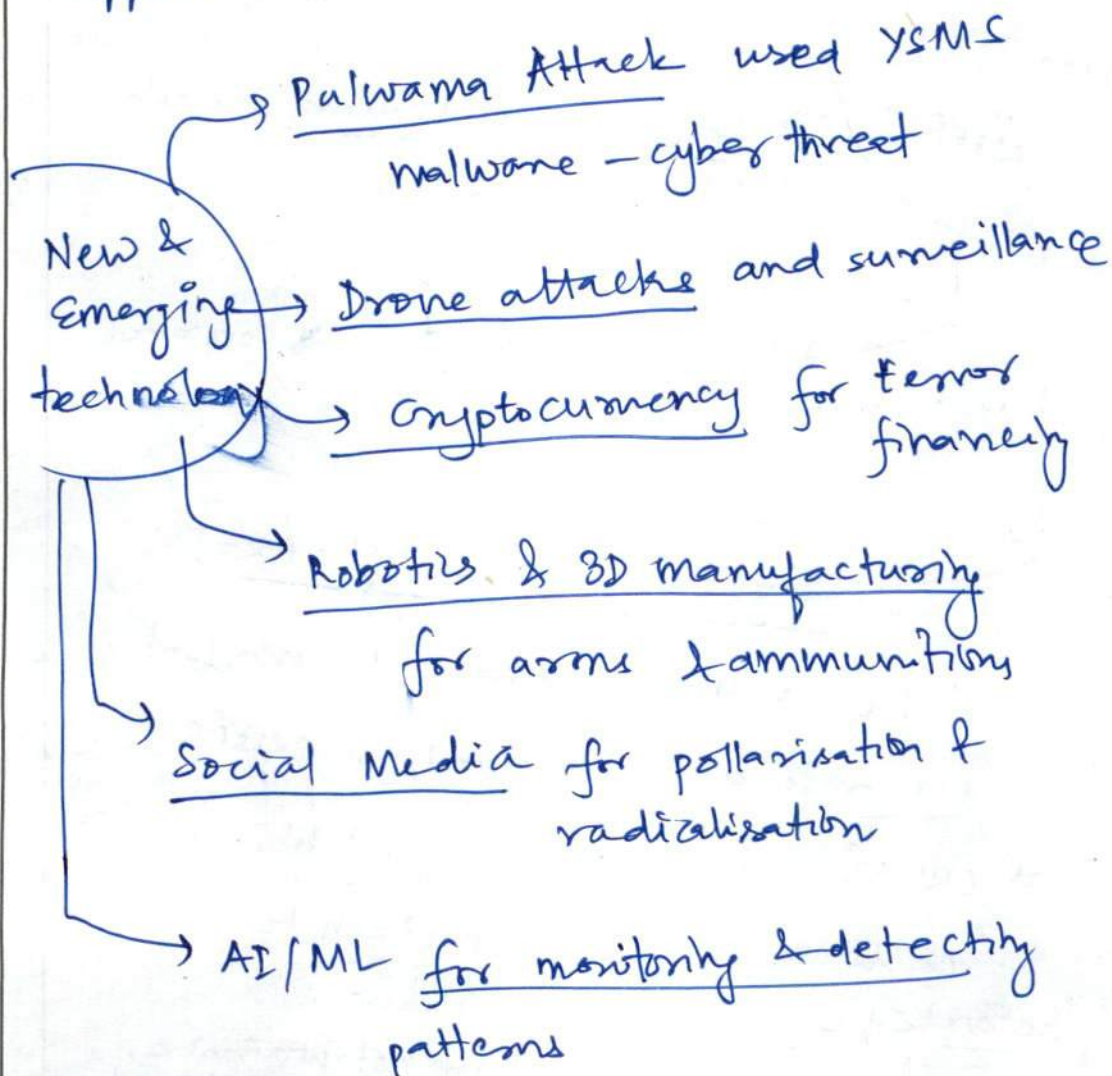
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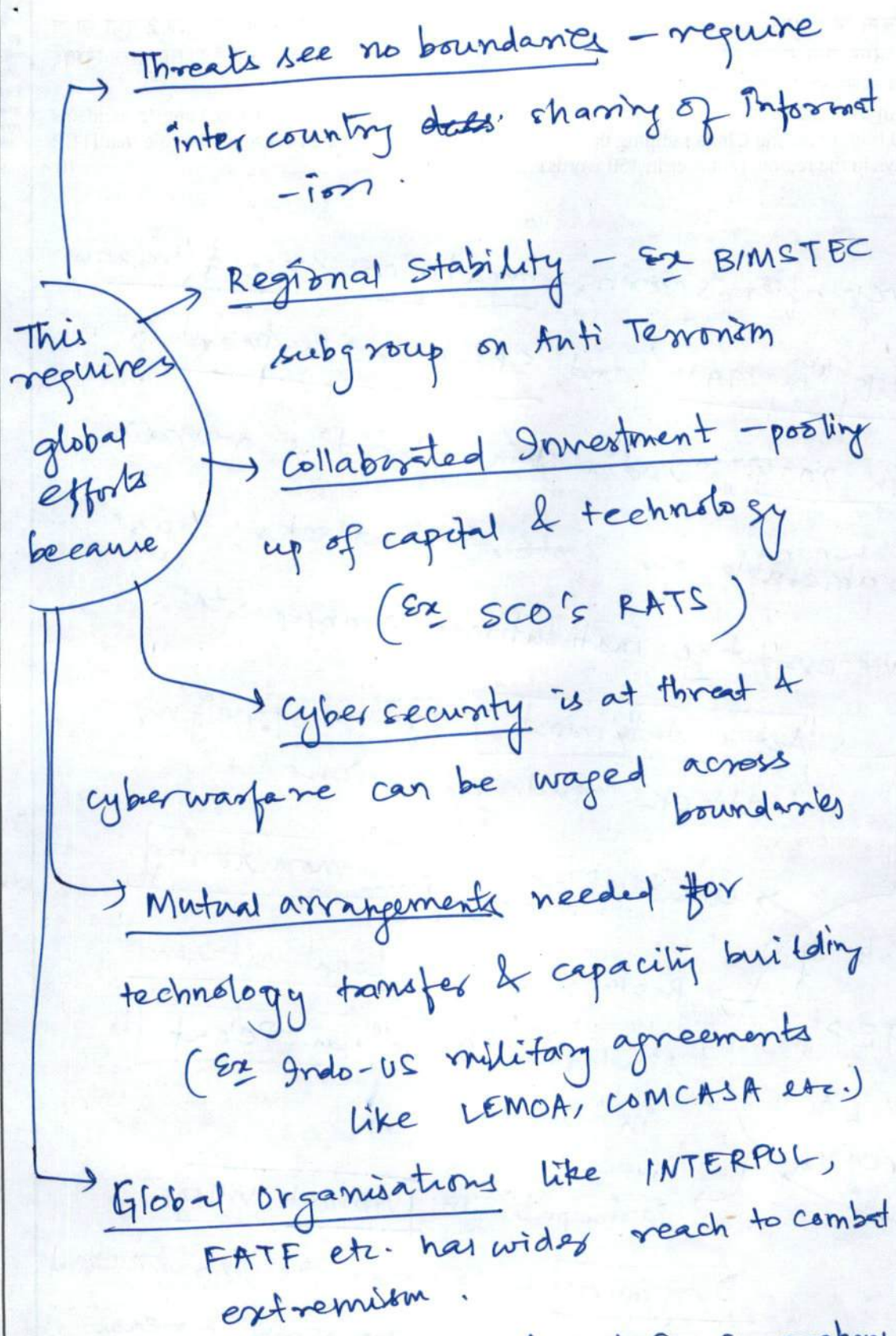
चर्चा कीजिए कि प्रमुख हिंसक चरमपंथी संगठनों द्वारा नई और उभरती प्रौद्योगिकियों के बढ़ते इस्तेमाल के विरुद्ध संगठित एवं ठोस वैश्विक प्रयासों की आवश्यकता क्यों है। (उत्तर 150 शब्दों में दीजिए)  
Discuss why the rising deployment of new and emerging technologies by prominent violent extremist organizations demand concerted global efforts. (Answer in 150 words)

10

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए  
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Extremist organisations like ULFA, ISIS, LeT have used various emerging technologies bypassing the institutional safety nets, hence demands collaborated efforts.





Hence, India's goal for Comprehens  
-ive Convention on Terrorism to crack down  
extreme organisation require collaborated  
efforts.

10.

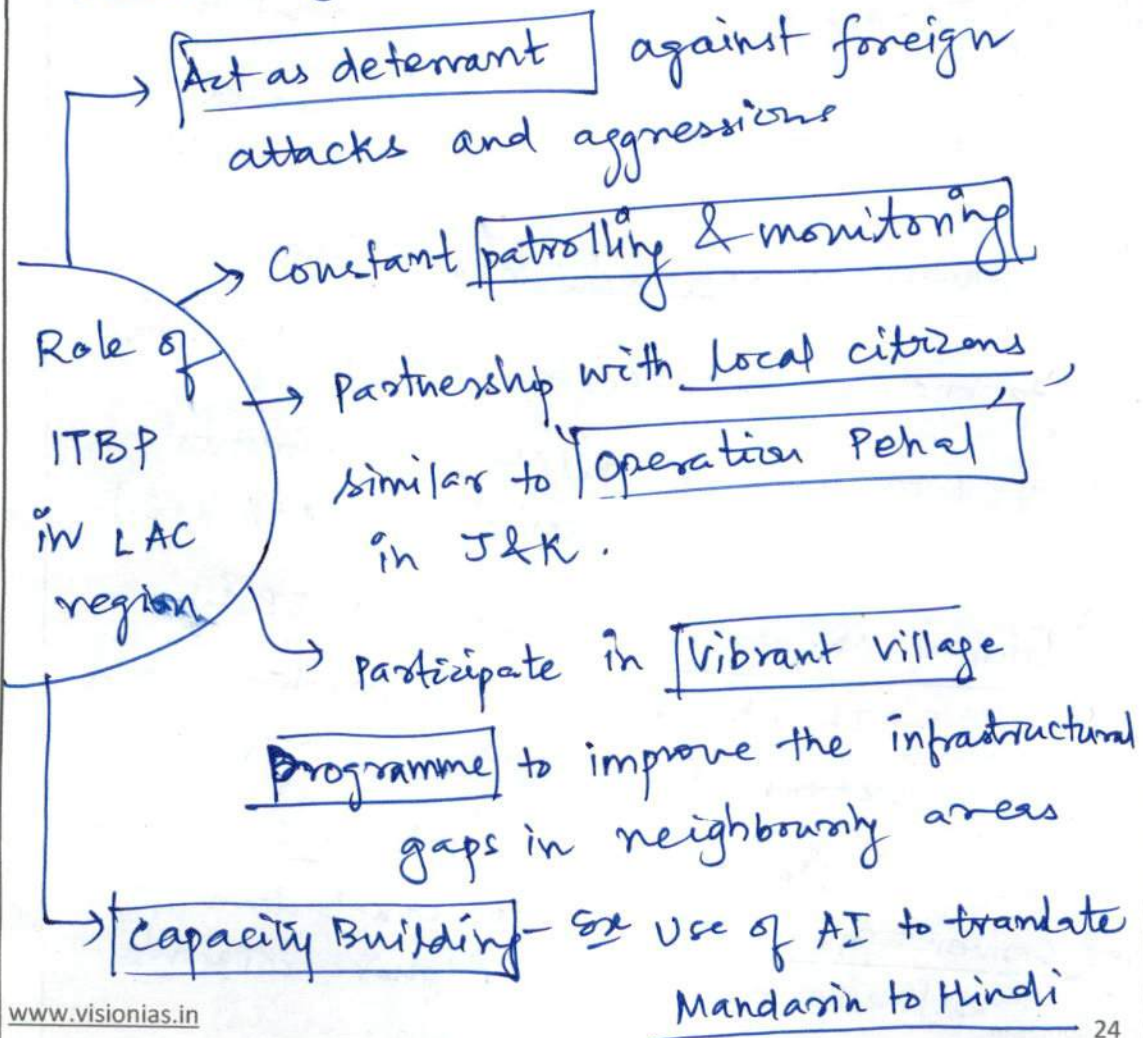
गलवान और यांगस्ते की घटनाओं के बाद वास्तविक नियंत्रण रेखा (LAC) पर तनाव बना हुआ है तथा भारत एवं चीन दोनों सीमावर्ती क्षेत्रों में अपने बुनियादी ढांचों को सुदृढ़ कर रहे हैं। इस क्षेत्र में ITBP द्वारा निभाई जाने वाली भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

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 हदिए में नहीं लिखना चाहिए  
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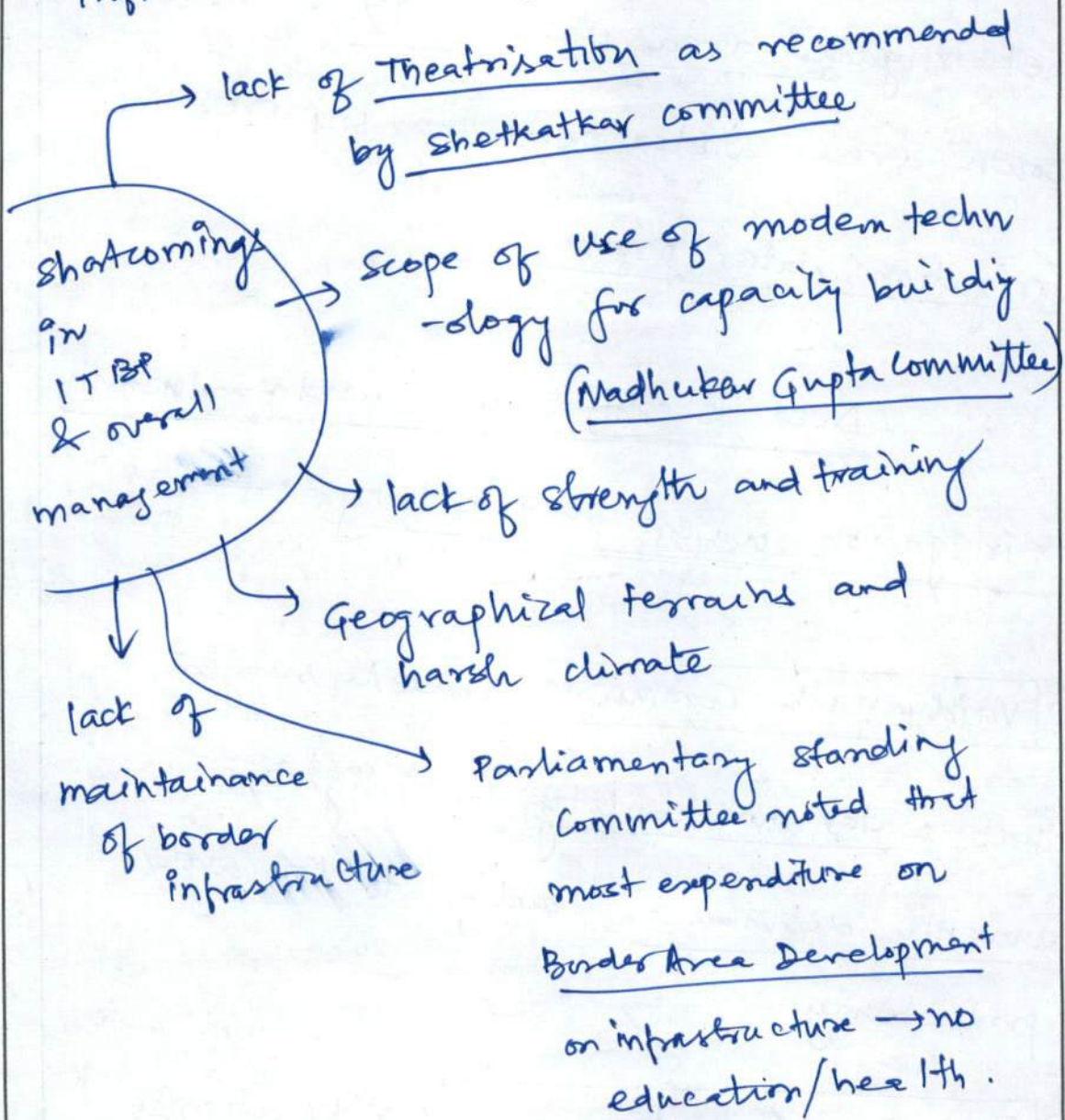
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Even after sharing treaty on Peace & tranquillity in 1994 and Strategic Partnership in 2004, India-china borders remain vulnerable by external attacks, thus necessitating institutional arrangements.



→ Information dissemination for intelligence network and swift decision making

→ Border protection and reinforcement of technology interventions to make border infrastructure stronger.



Hence, the borders of the country is being protected by the grit of organisations like ITBP that keeps India sailing new heights.

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 हाथिए में नहीं लिखना चाहिए  
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15

With low land productivity, small land holding size (average 1.08 hectare) and net irrigated area under 49% of net sown area, India needs to improve the 'irrigation water productivity'.

Need to shift from 'land productivity' to irrigation water productivity :-

1) Vaidyanath Committee reports suggest that water availability for irrigation is unevenly distributed leading to low water productivity.

2) Efficiency in water usage - With schemes

like PMKSY and 'More crop per drop' focuses on the judicious use of water as per capita water has dwindled from  $6000 \text{ m}^3/\text{person}$  (1947) to  $1340 \text{ m}^3/\text{person}$  in 2020.

3) Ground water depletion - 5th Irrigation census notes 63% decline in ground water from 2007 to 2017 necessitating judicious use.

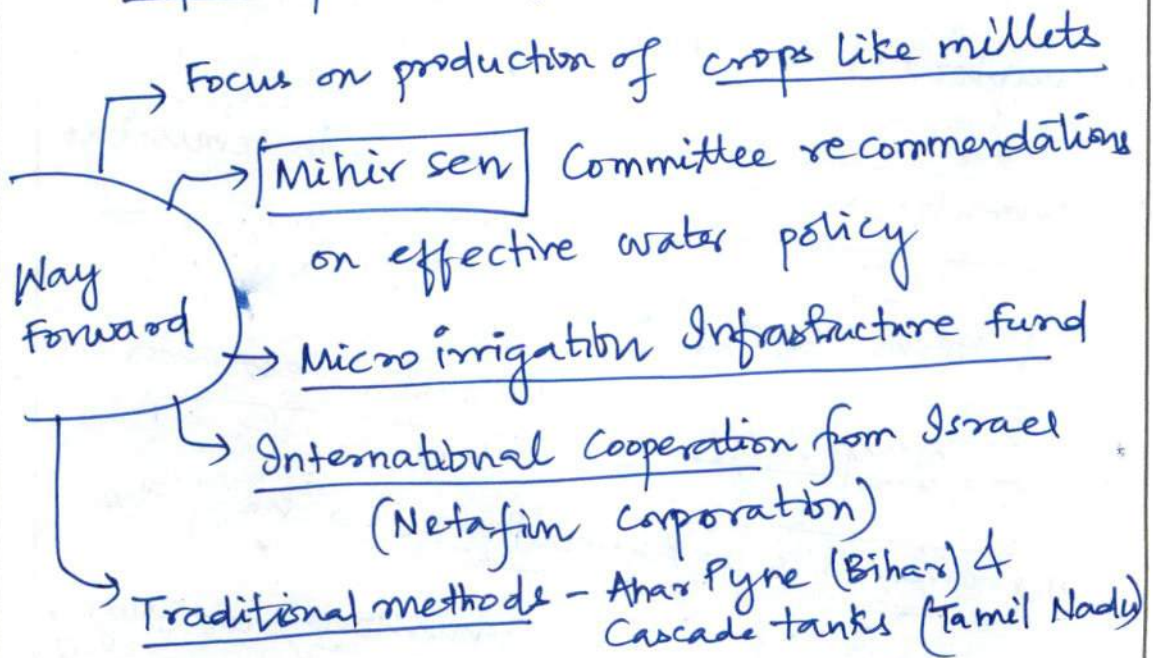
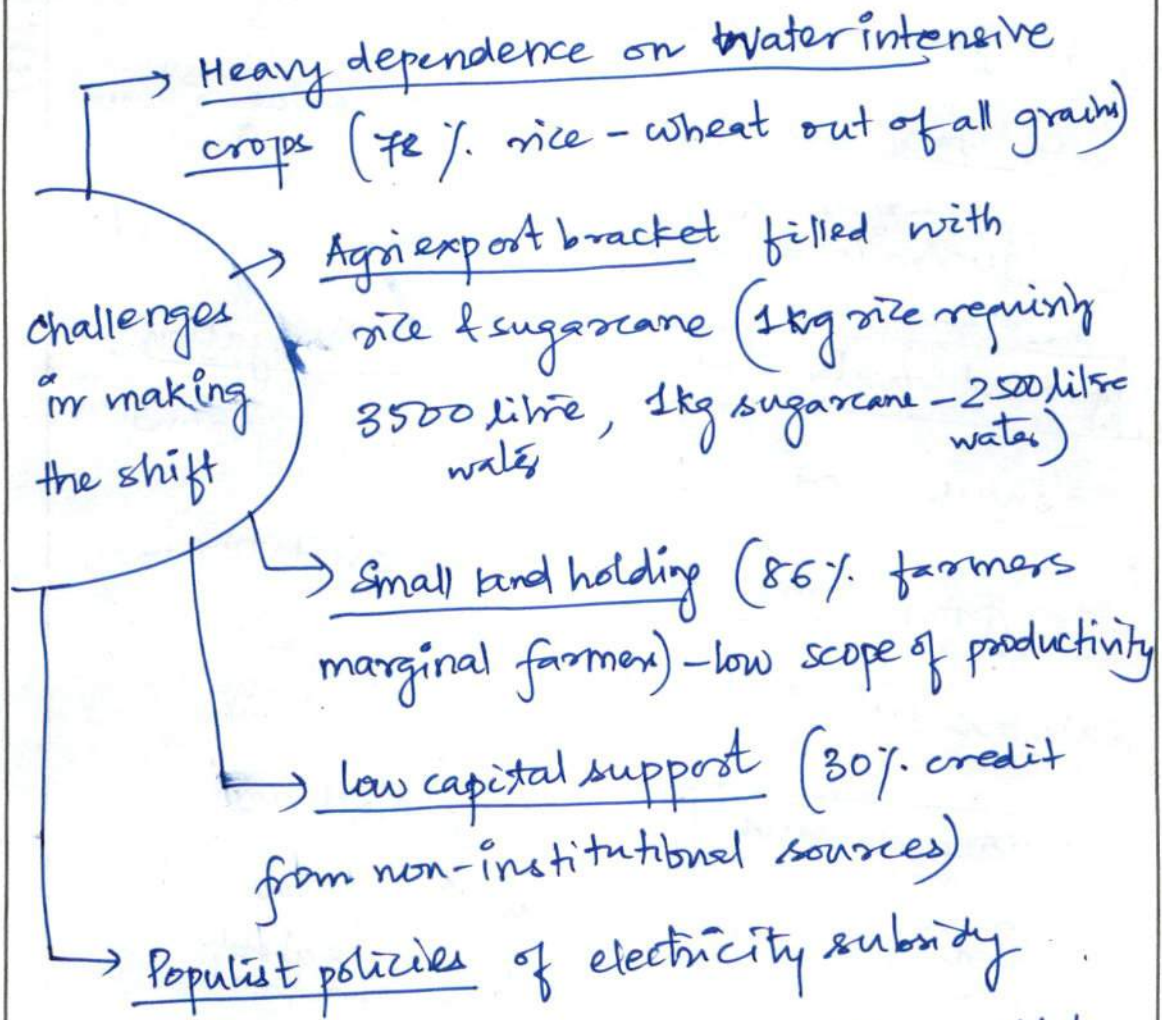
4) Menace of subsidy - No control and legislation on water productivity has led to exploitation of electricity <sup>subsidy</sup> product.

5) Greenhouse gas emissions - carbon emissions need to be controlled with judicious use of pumps, motors and water resources.

6) CH<sub>4</sub> emissions - Agriculture as one of the prime source of methane emission, water logging.

in rice/sugarcane releases more toxic emissions.

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए  
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Hence, not just doubling the income should be the goal, but sustainability & productivity must also be addressed.

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)

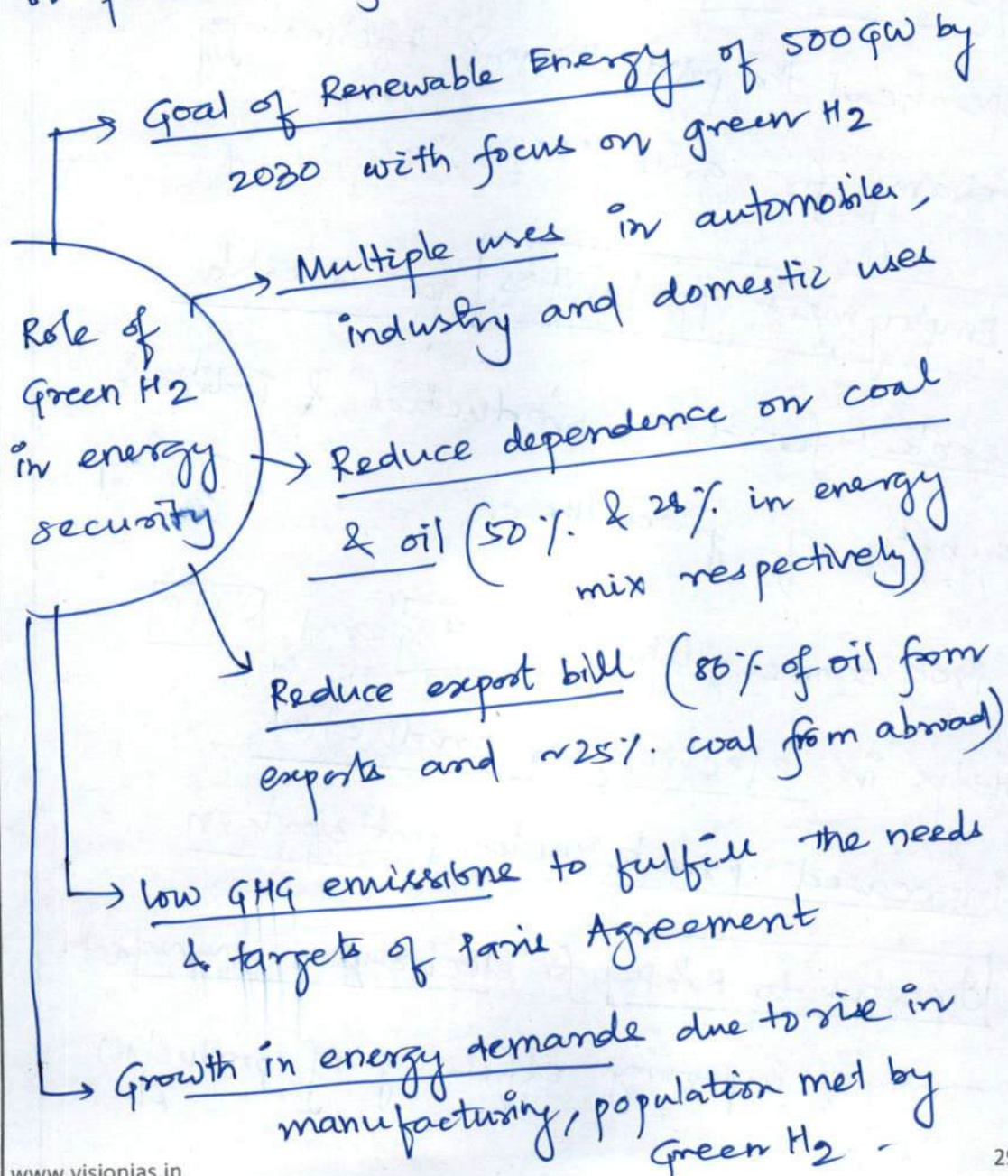
Examine the role that green hydrogen can play in unlocking the energy security of India. How can the National Green Hydrogen Mission help India in achieving its energy goals? (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नही लिखना चाहिए  
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Green Hydrogen is the pioneer clean energy technology that harnesses renewable energy

in production of  $H_2$  with no carbon emissions.

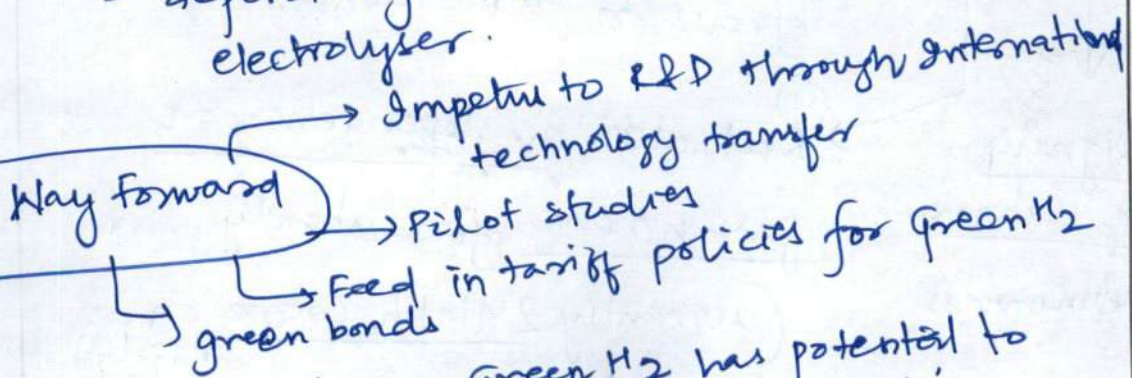
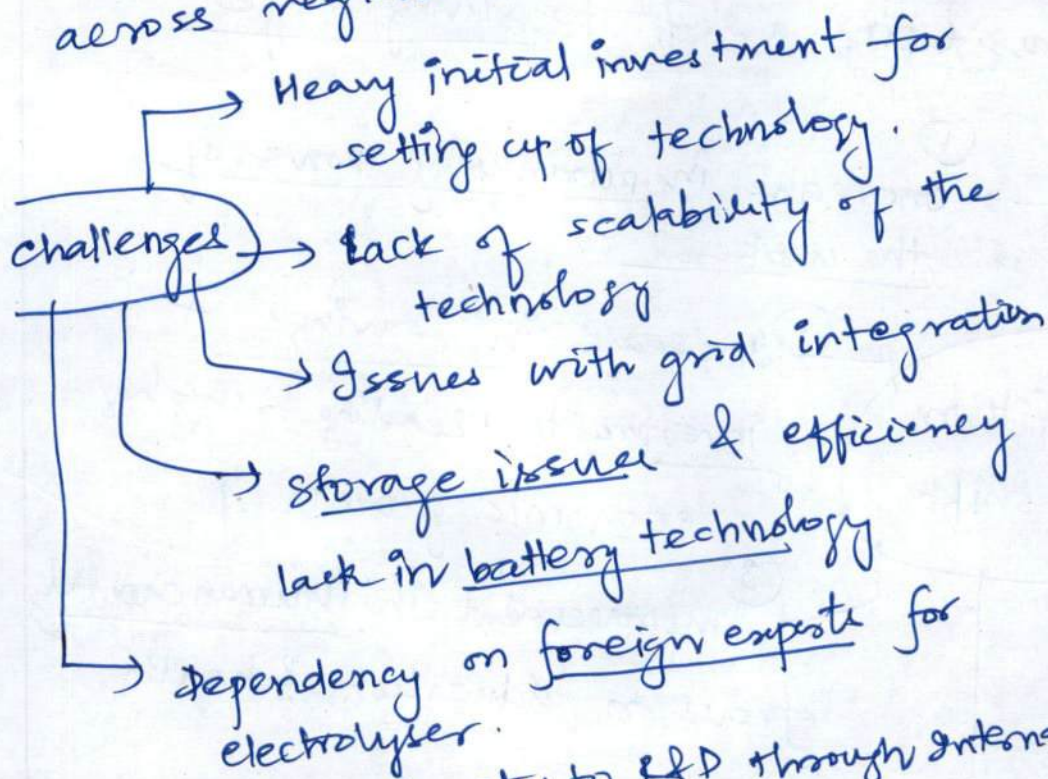


National Green H<sub>2</sub> Mission can help to achieve the same

- 1) Production target of yearly 5MMT of green H<sub>2</sub> by 2028.
- 2) Investment of 8 lakh crore to spearhead the production & technology revamp for green H<sub>2</sub>.
- 3) Employment opportunities for 6 lakh people for direct production & indirect supply of green H<sub>2</sub>.
- 4) Programmes like SIGHT and SHIP helps in electrolyser production, increased private sector participation.
- 5) Impetus to R&D for electrolyser manufact-uring, improving efficacy of production etc.

6) Hydrogen valley Program for creating a robust ecosystem of industry, academia, researchers & private sector players.

7) Programmes like H-CNG in Delhi buses and Green Hydrogen plant in Leh for sustainable energy production across regions.



Hence, Green H<sub>2</sub> has potential to meet the targets of Panchamrit.

13.

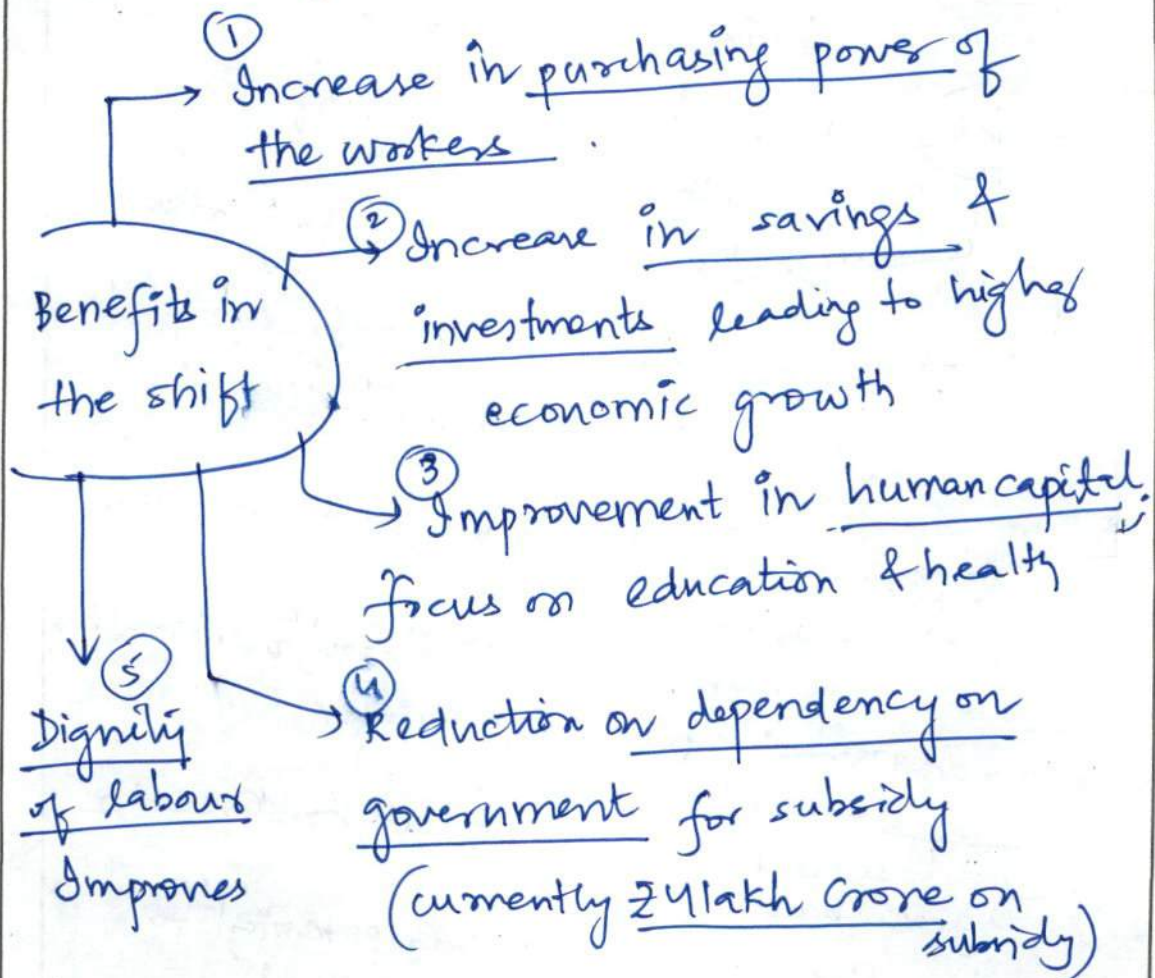
हाल के दिनों में, सरकार न्यूनतम पारिश्रमिक की जगह जीवन निर्वाह पारिश्रमिक को अपनाने पर विचार कर रही है। भारत में जीवन निर्वाह पारिश्रमिक को अपनाने के लाभ और इसमें विद्यमान बाधाएं कौन-सी हैं? (उत्तर 250 शब्दों में दीजिए)

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)

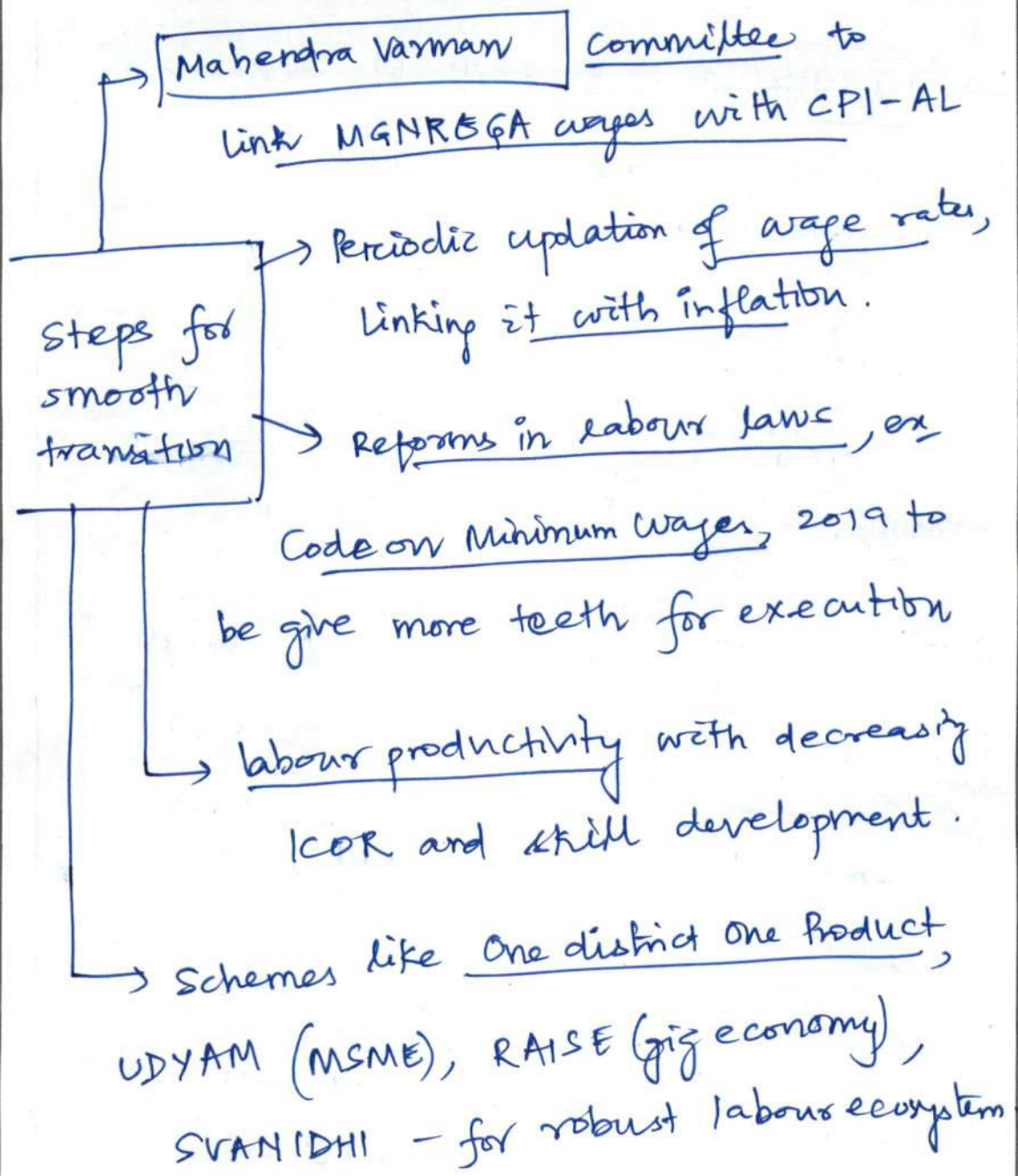
उम्मीदवारों को इस शीट में नहीं लिखना चाहिए  
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With <sup>Crore</sup> 35% of Indians under multidimensional below poverty line & 16% multidimensionally poor, minimum wage has failed to provide a life of dignity to workers, necessitating a shift to living wage.



- ① Additional cost shall be passed on to the consumer dampening their purchasing power.
- ② Capital productivity in industries decline with hampering in their cost of production.
- ③ Micro and small enterprises shall be affected the most, the ones with low safety net (Ex 6-3 Core MSMEs have no formal credit)
- ④ Multiplicity in wage regimes - Ex state decided wage rates, MGNREGA rates etc.
- ⑤ lack of objectivity in determination of 'living wage' - Ex variation in conception on poverty line
- ⑥ 'living wage' depends on living styles based on cities, families, culture, size of family etc.



Hence, India to achieve \$5 trillion economy is a dream looking closer than expected, but purchasing power & dignity of labour must be improved.

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 हिसाब में नहीं लिखना चाहिए  
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Article 112 mandata the government to formulate & present the union budget for each financial year culminating the revenue & expenditure of past & future times.

Yes, Union Budget/policies do not come under substantial public scrutiny because —

① Confidentiality — No views of public taken on the formulation of budget, no opinion polls or socioeconomic survey taken for each budget.

② Minimal inputs from Parliament — With majority party system, 'taken-cuts' or

'changes in budget appropriation' are not taken into account by the standing committee.

③ lack of impact study - Although budget narrates the financial revenue/expenditure of last FY, no study to compare what was planned & what was achieved.

④ Post mortem diagnosis of financial prudence by organisations like CAG after the actual expenditure is incurred do not bring substantial changes.

⑤ low involvement of civil society to represent the demands of various sections.

⑥ Form of presenting with numerous technicalities make the ordinary public powerless to truly comprehend the budget.

But there are instruments that involve debates & deliberations over the budget :-

- 1) Parliamentary discussions after the initial presentation by Finance Minister to approval of finance Bill echoes public sentiment.
- 2) Outcome Budget makes the budget more accountable to be in line with public welfare.
- 3) Surveys of labour bureau, Consumer Inflation expectation (RBI), NSO for employment & socioeconomic studies are taken into account.
- 4) Media involves civil societies, pressure groups for effective deliberation in budget components.

So, Budget is not merely financial planning but the lifeline & foundation for economic robustness which must be made more participatory & inclusive.

15.

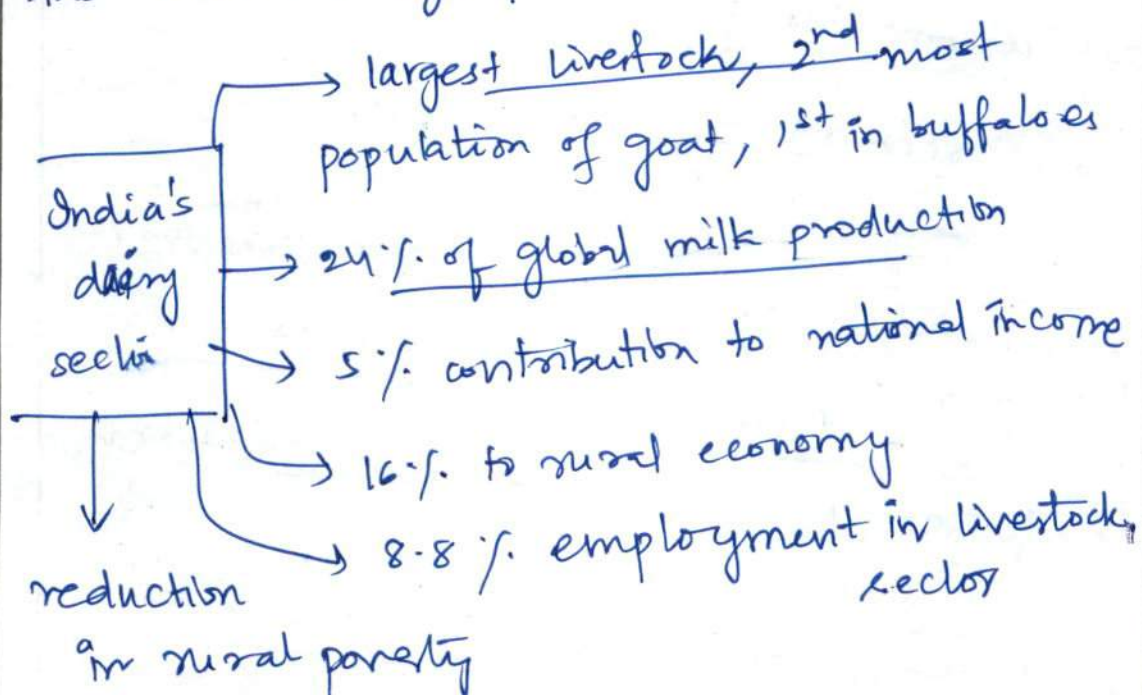
भारत स्वयं को दूध की कमी वाले देश से दुनिया के सबसे बड़े दूध उत्पादक देश के रूप में बदलने में सक्षम हो गया है, लेकिन देश में डेयरी पशुओं की उत्पादकता चिंता का विषय बनी हुई है। विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

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 खण्ड में नहीं लिखना चाहिए।  
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With the largest livestock ( $\sim 53$  crore) and largest production of milk covering about 24% of global milk production, India has pioneered in milk production, but the shortcomings persist.

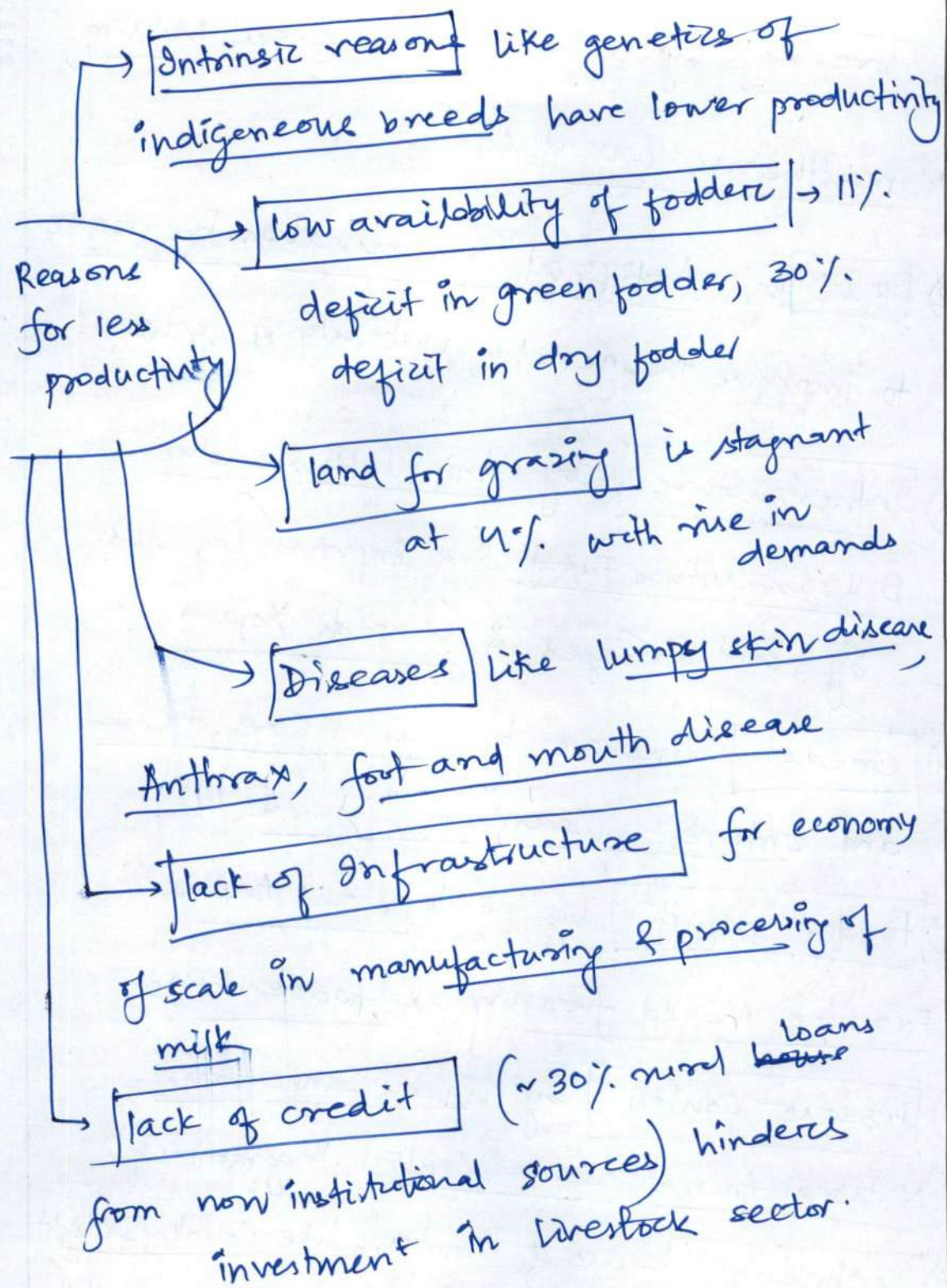


But the livestock productivity remains

low as India's livestock produce around

1777 kg/animal/year whereas world

average is at  $\boxed{2700 \text{ kg/animal/year}}$  of milk.



Measures that can be taken for increasing productivity →

- 1) Development of productive indigenous breeds by schemes like Gokul Mission, Kamadhenu Award etc
  - 2) R&D by Artificial Insemination Programme to improve the genetic viability of cows.
  - 3) Infrastructure by Animal Husbandry Infrastructure Fund and improve logistics by cold storages & Sampada Yojana.
  - 4) Credit improve by Kisan Credit Card and Interest subvention Scheme.
  - 5) Fodder growth by Integrated Animal Farming, Mixed Farming & fodder FPOs
  - 6) Disease Control by Pashu Sanjeevani, National Animal Disease Control Programme
  - 7) Technology - use of startups like Country Delight AI/ML (Stellas Apix) for increased productivity.
- As Ashok Dalwai Committee stressed on improving livestock production which can help in doubling the income of farmers.

16.

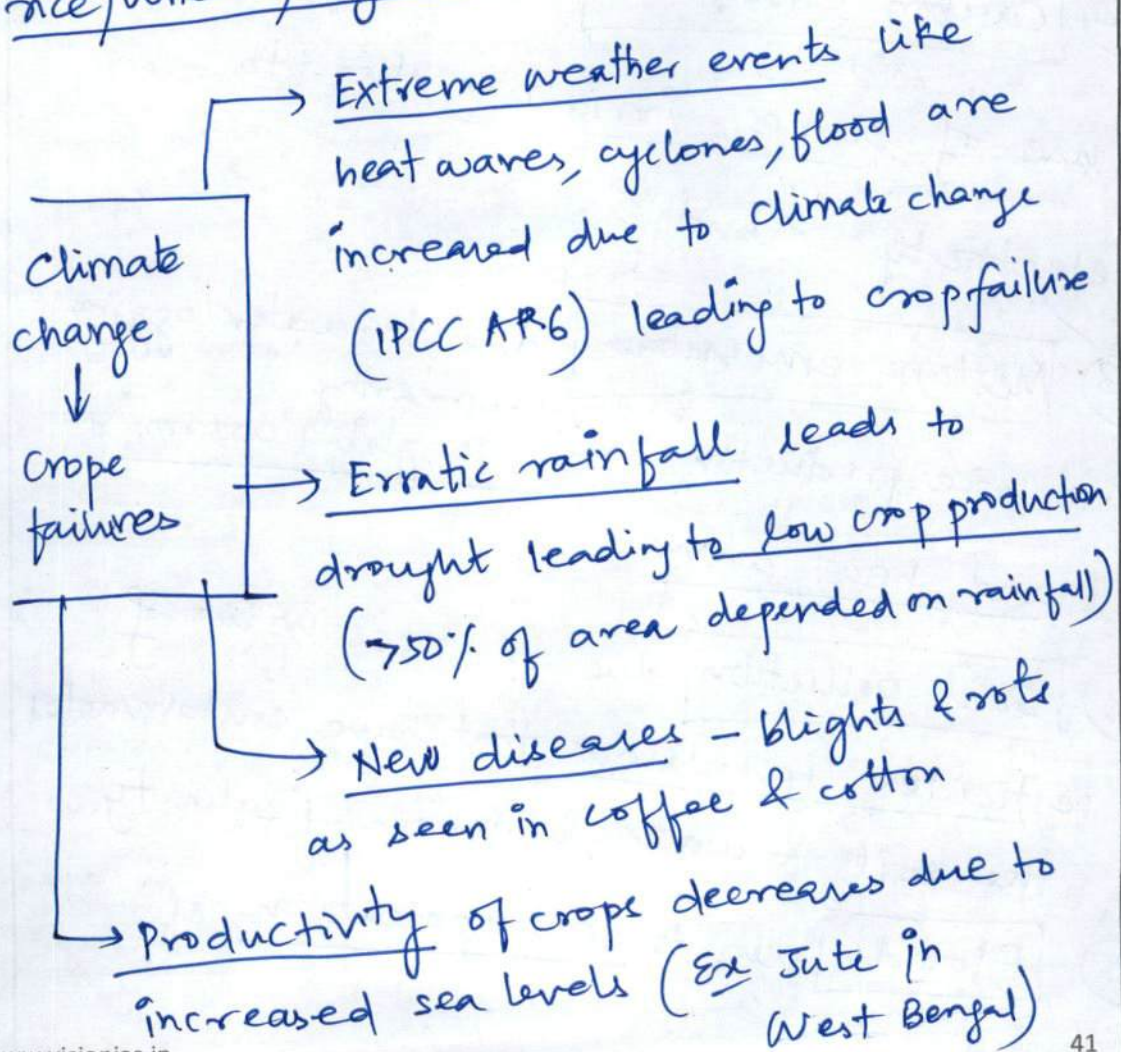
जहाँ एक तरफ जलवायु परिवर्तन, फसल की विफलता के लिए जिम्मेदार है, वहीं दूसरी तरफ चरम मौसमी घटनाओं के लिए कृषि क्षेत्रक स्वयं आंशिक रूप से जिम्मेदार है। विवेचना कीजिए। भारत में कृषक समुदाय की प्रत्यास्थता को सुदृढ़ करने के लिए राष्ट्रीय कृषि आपदा प्रबंधन योजना के तहत क्या रणनीति अपनाई गई है? (उत्तर 250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

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

उम्मीदवारों को इस खंड में नहीं लिखना चाहिए।  
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Agriculture sector is the second largest sector for producing methane and carbon footprint of the sector is high due to water/energy intensive cropping of rice/wheat/sugarcane etc.



Agriculture is responsible for extreme weather events →

① Increased droughts due to groundwater depletion (63% decrease in a decade) due to dependence on water intensive cropping.

② Carbon emissions because of reckless use of pumps, irrigation due to electricity subsidies.

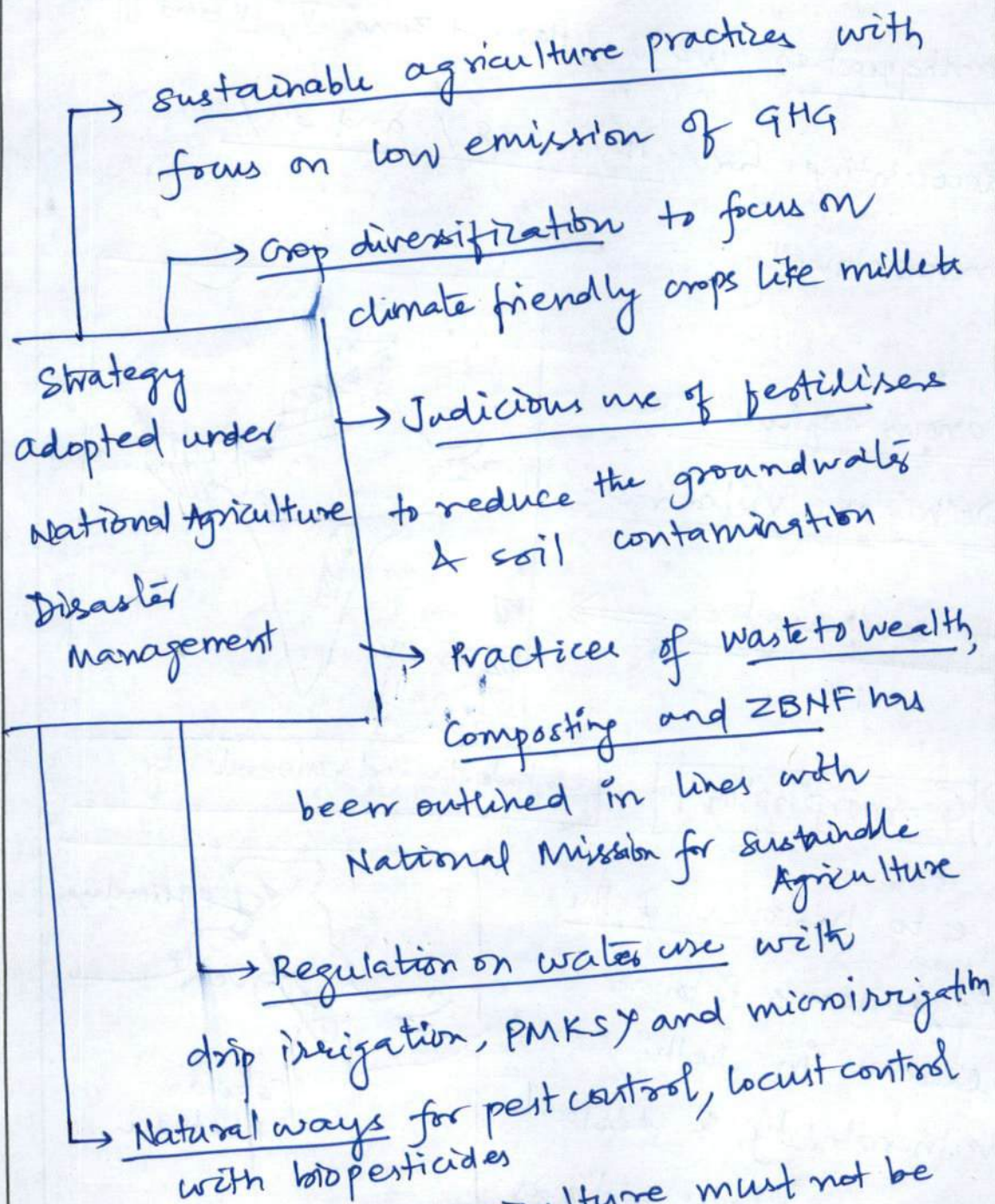
③ Methane emissions due to waterlogging in rice production, <sup>& animal rearing</sup> leads to global warming and heat waves.

④ Soil pollution due to excessive use of pesticides, fertilisers that have contaminated the soil & water; & increased salinity.

⑤ Floods due to eutrophication of

• lakes/rivers due to increased agricultural waste being drained.

⑥ stubble burning responsible for >50% of PM 2.5 concentration in Delhi leading to air pollution.



Hence, agriculture must not be a hindrance in achieving SDG 13 targets of climate change, hence require policy interventions.

17.

दिल्ली सहित भारत के कुछ क्षेत्र हिमालय में आने वाले भूकंपों के प्रभाव के प्रति अत्यधिक संवेदनशील हैं। विवेचना कीजिए। भारत में भूकंप से होने वाली हानि को कम करने के लिए कौन-से संस्थागत उपाय किए गए हैं? क्या आपको लगता है कि कुछ उल्लेखनीय कमियां अभी भी मौजूद हैं? (उत्तर 250 शब्दों में दीजिए)  
Some regions in India, including Delhi, are highly vulnerable to the impact of earthquakes originating in the Himalayas. Discuss. What institutional measures have been taken to mitigate earthquake losses in India? Do you think there are significant gaps that still exist? (Answer in 250 words)

उम्मीदवारी को इस वृत्ति में नहीं लिखना चाहिए  
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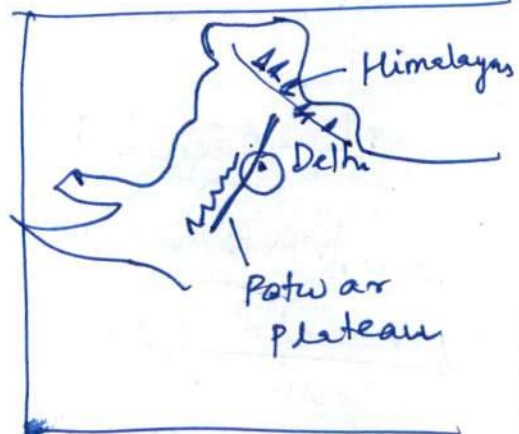
About 59% of India is vulnerable to earthquakes with Hazard Zone V, IV and III accounting for 11%, 18% and 30% respectively.

Various regions like Delhi are vulnerable to earthquakes →



① Geomorphology

Due to historical Delhi ridge across Patwar plateau in Delhi, vulnerability in disturbance of plate tectonics is higher.



② Earthquake swarms as seen traversing  
from Afghanistan / Hindukush to Delhi,  
Rangash & Palghar etc.

③ Population density with 4 crore population  
and high density, probability of loss of  
lives/property is higher.

④ Violation of floor safety index - usually  
flouted by skyscrapers in NCR - Gurgaon  
& Noida - increasing the overall vulnera-  
-bility.

⑤ Building design - Unsustainable  
construction practices and adjacent &  
proximate building structures make them  
prone to larger damage.

⑥ Sensitive terrain - especially in the  
Tercai region marking a transition  
from Himalayas to plain.

Institutional measures to mitigate  
earthquake loss →

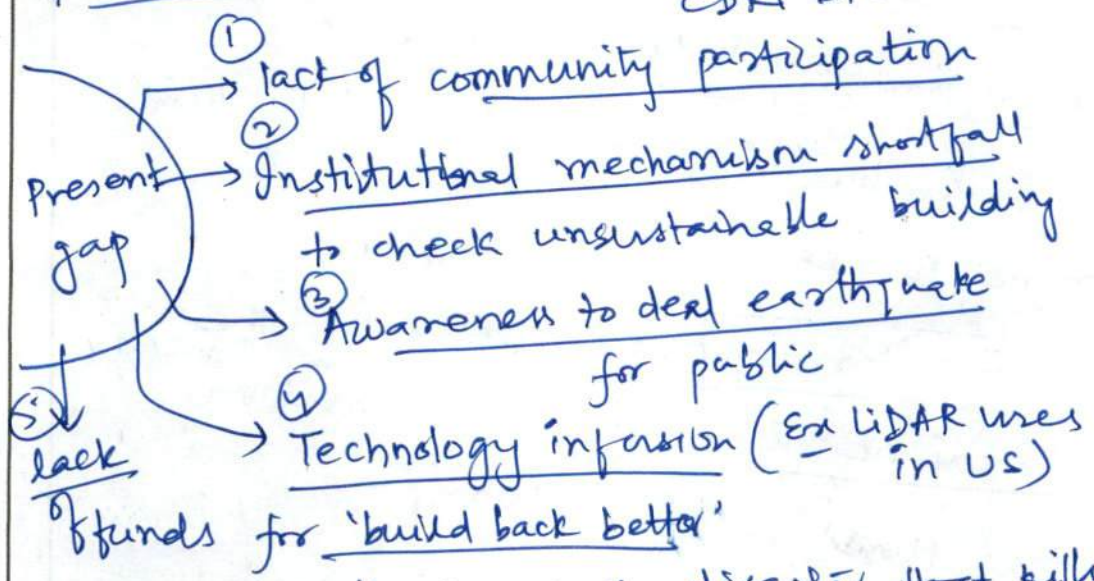
1) National Policies like National Retrofitting Mission, National Building Code signify the sustainable measures to control damage.

2) Schemes of PM 10 point agenda helps in increased community participation & technology infusion.

3) Bodies like NDMA, SDMA, DDMA and Disaster Response Force, NSS etc. increase the robustness of the institutional set up.

4) Technology like SAGE Model, Quake App, SATARK App in Odisha etc.

5) International like Sendai Framework, Hyogo Protocol, CDRI etc.



Hence, "it is not the disaster that kills, but the lack of preparedness that does"

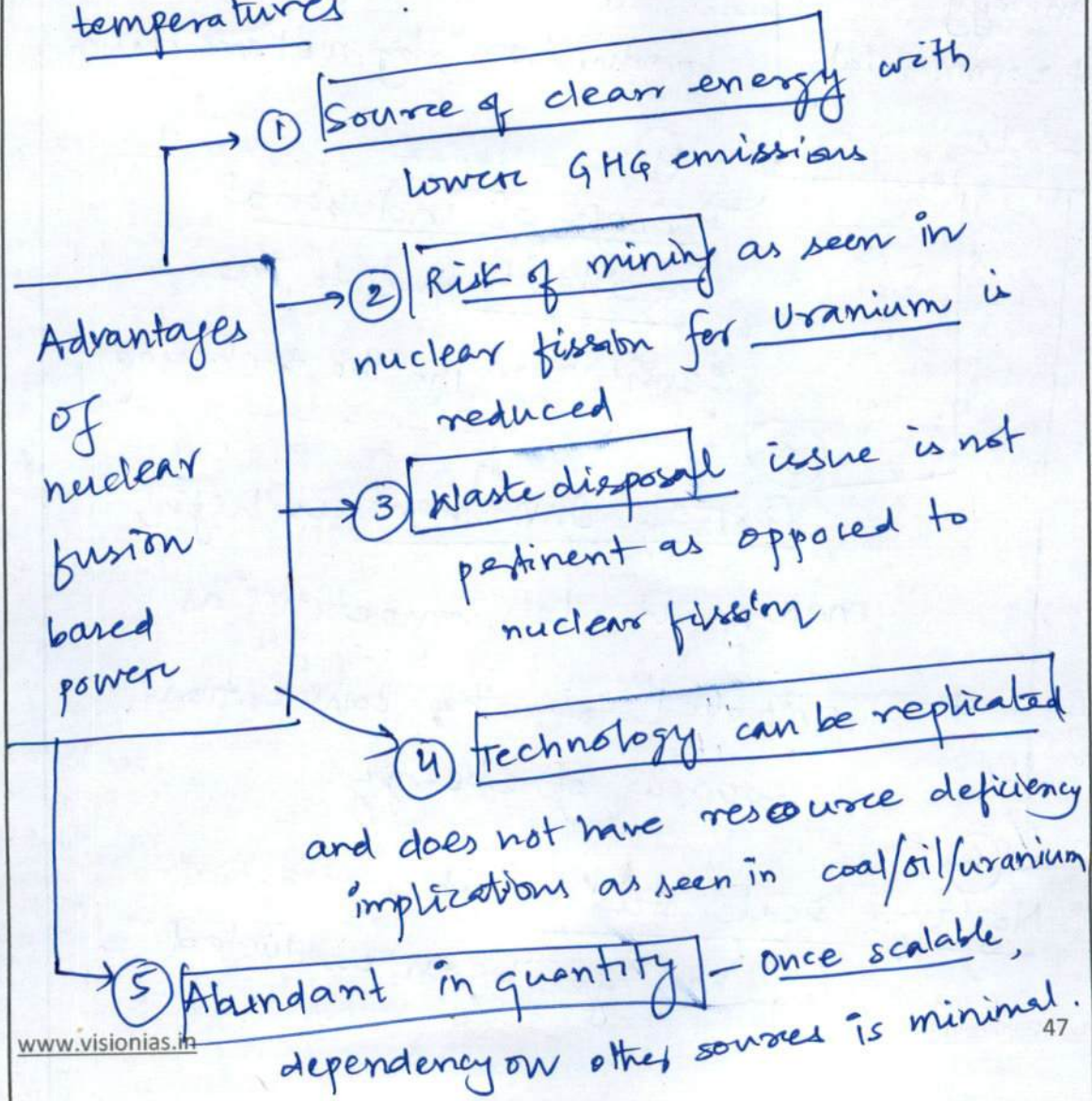
18.

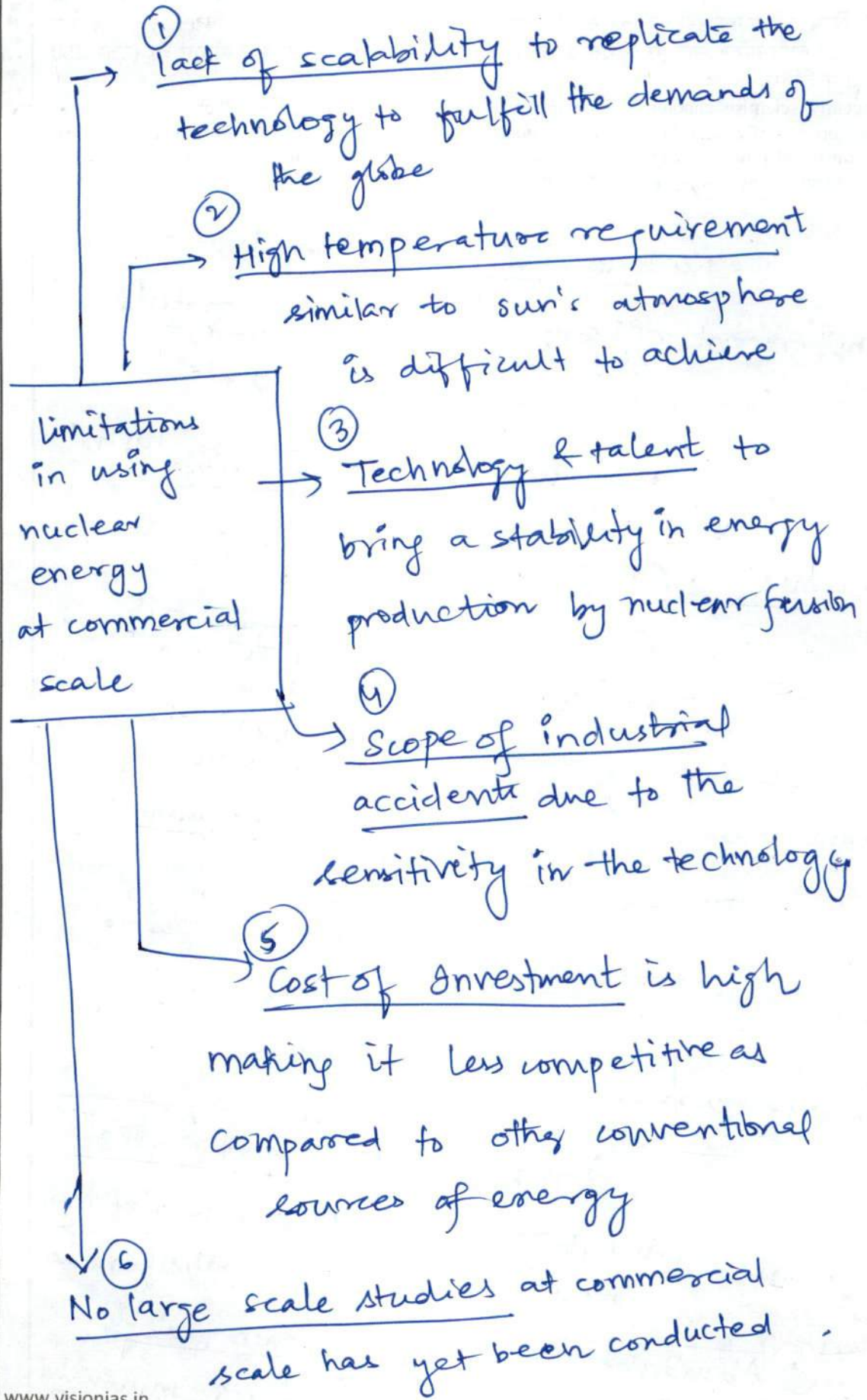
हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों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

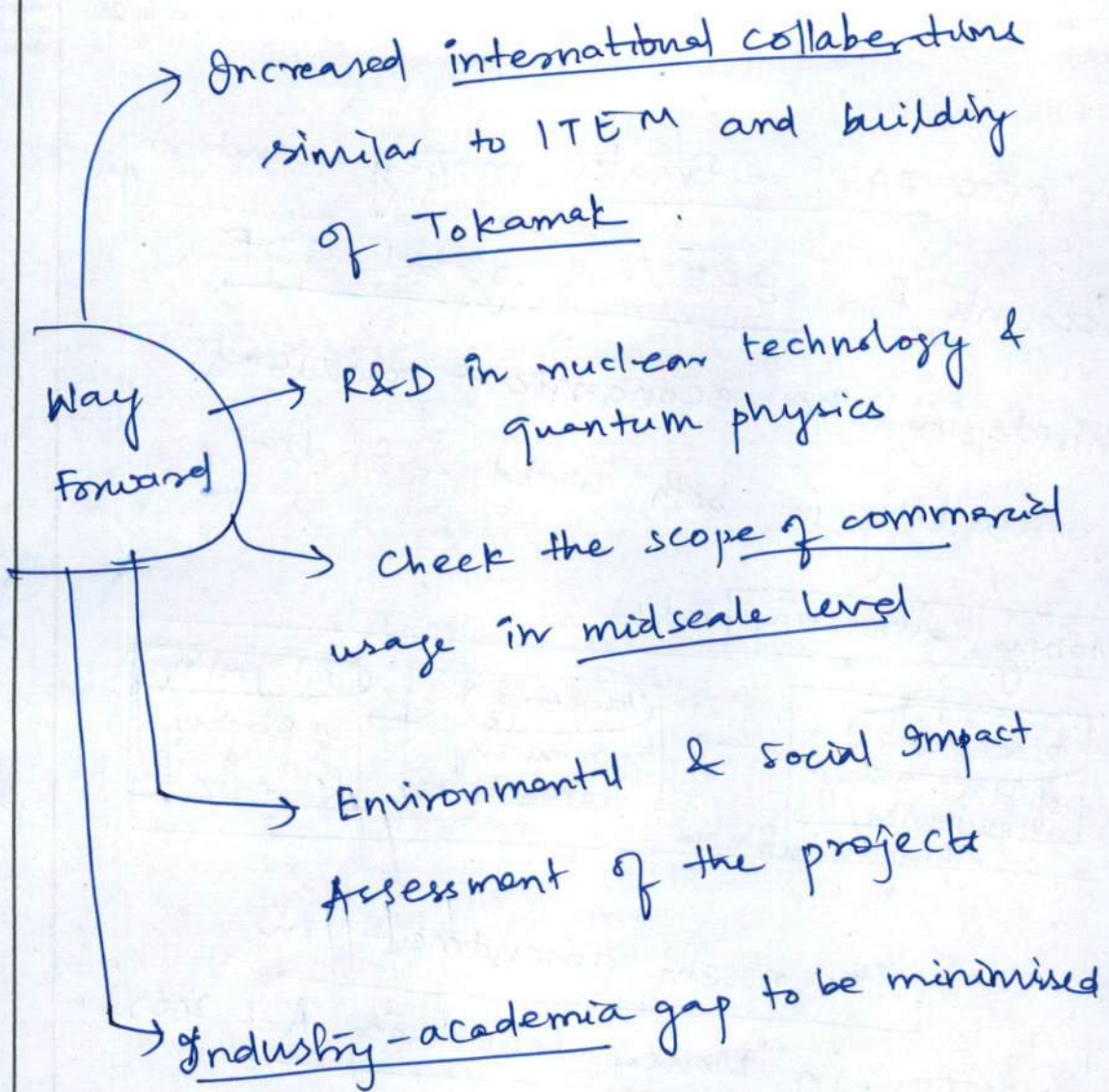
Recently, scientists announced net energy gain in nuclear fusion reaction, which is considered as a major scientific breakthrough for the future of clean energy. What are the advantages of nuclear fusion based power generation? What are the limitations in using it to generate electricity at a commercial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

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Nuclear fusion reaction imitates the environment of sun where atomic particles of hydrogen combine (fusion) to yield energy which is achievable at very high temperatures.







Hence, while IPCC mandates 43% decrease in CO<sub>2</sub> by 2030 to meet 1.5°C target, technology like nuclear fusion shows the way.

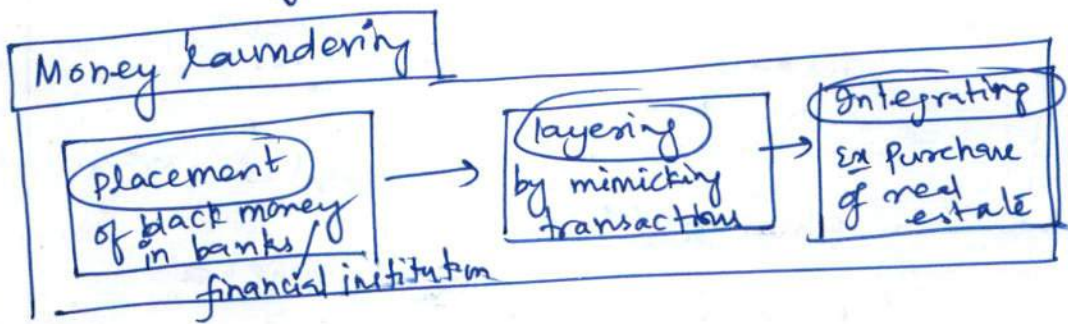
19.

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)

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए।  
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As per FATF estimates, money laundering accounts for 3-5% of global GDP hindering the economic & political stability in both world & India.



With recent amendment in Prevention in Money Laundering Act, 2002 (PMLA), money laundering is tackled by →

- ① More teeth to Enforcement Directorate to search, scope and seizure of money appropriated from money laundering.  
 (section 16, 17, 18)

(Section 50)

② Arrest without warrant and investigation process strengthened by amendment.

③ Section 24 mandates the burden of proof lies on the accused, hence making it difficult for the criminals to prove innocence.

④ Emergency Information Report is not mandated to be made public or shown to the accused to reduce the scope of tampering.

⑤ Proceeds of crime that has been used to buy other assets, shall be confiscated along with these assets making a strong deterrence.

Apart from the amendment in PMLA, additional mechanisms

must be strengthened to reduce the menace of money laundering.

उम्मीदवारों को इस भाग में नहीं लिखना चाहिए  
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① Finance Intelligence Unit and Economic Intelligence Unit for overall money + monitoring of economic transactions

② Institutional mechanisms like FICN - Coordination group to check counterfeiting enabled money laundering.

③ Organisations like CFT (Combating for financing of terrorism), TFFC (Terror financing & fake currency) to be strengthened.

④ International collaborations using FATF, BIMSTEC subgroup on money laundering - Asia-Pacific group etc.

⑤ Use of technology like AI/ML and blockchain to highlight the suspicious transaction.

⑥ Cryptocurrency & block chain based money laundering to be tackled by global collaborative efforts, pioneered by World Bank & IMF.

Hence to achieve a robust & stable economic regime, policy & institutional set up must be strengthened to tackle money laundering.

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)

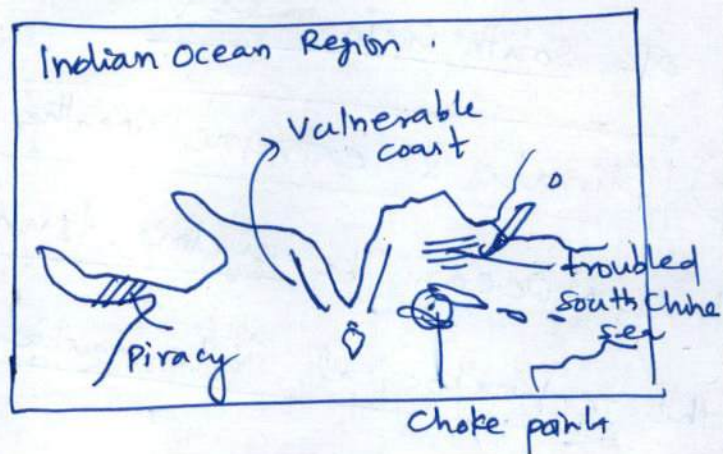
Discuss the security threats present in the Indian Ocean Region (IOR), which have a direct bearing on India's maritime border interests. Suggest a robust strategy to deal with these threats. (Answer in 250 words)

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
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With 80% of trade and 90% of crude being traversed through Indian Ocean Region, the security of the region is of immense importance for India.

Security threats present in IOR →



① Vulnerability of coast → 7500 km + based coastal line is vulnerable to external state & non-state actor, as seen in 26/11 attacks.

② Piracy - infamous Gulf of Aden and horn of Africa is prone to piracy and similar attacks.

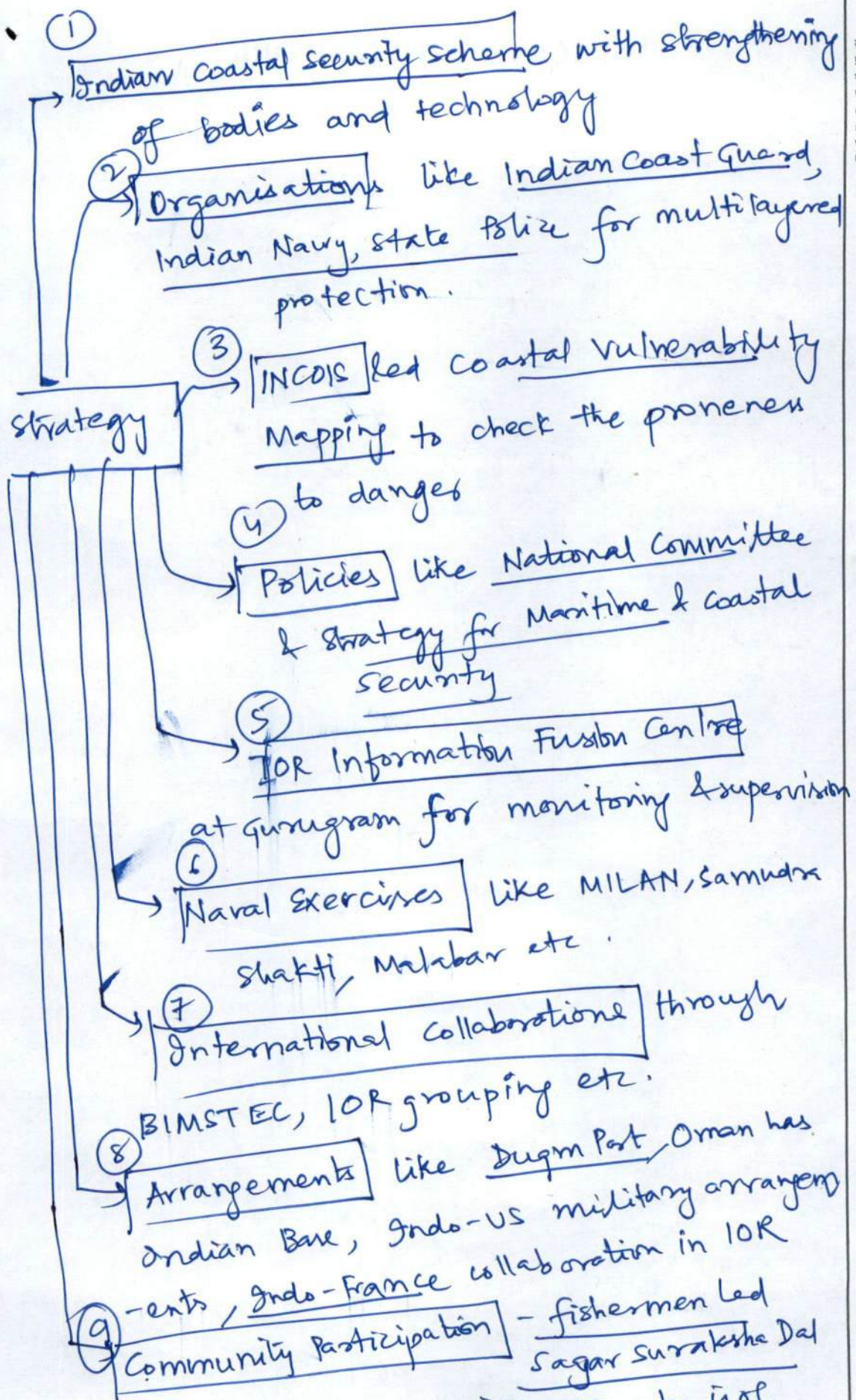
③ choke points in Strait of Malacca, Palk Strait can hinder smooth logistics and are prone to criminal activities.

④ Islands of Andaman & Lakshadweep are prone to drug and arms smuggling & are proximity to China's military bases of South China sea.

⑤ Climate & extreme weather events in Indian Ocean like cyclone, tsunami make the technological interventions vulnerable.

⑥ Multiple agencies - lead to duplication of work and nonstandard SOPs make the efficacy of institutions like Indian Navy, Indian Coast Guard futile.

Strategy to deal with the security threats at IOR →



Hence India's maritime security is of paramount importance for sustaining socio-political stability.

## SPACE FOR ROUGH WORK

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