



# 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. : 1043458

अभ्यर्थी का नाम/Name of Student : POORVA KETRAWA

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

ENGLISH

तारीख  
Date

27/8/23

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

केंद्र  
Centre

DELHI

निरीक्षक के हस्ताक्षर  
Invigilator's Signature



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



|                                                  |                                             |
|--------------------------------------------------|---------------------------------------------|
| कार्यालय के प्रयोग हेतु<br>For Official Use      | कार्यालय के प्रयोग हेतु<br>For Official Use |
| परीक्षक के हस्ताक्षर<br>Signature of Examiner(s) |                                             |

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

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

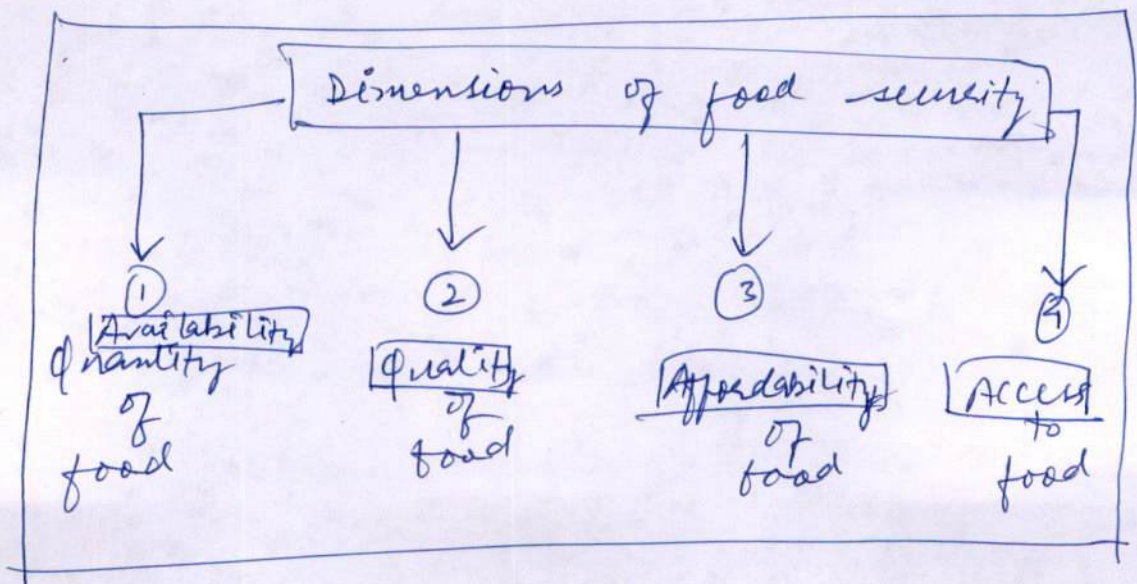
खाद्य सुरक्षा के विभिन्न आयाम क्या हैं? इन आयामों के मद्देनजर खाद्य सुरक्षा सुनिश्चित करने के संदर्भ में भारत की स्थिति का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

As per FAO, food security is the availability of quality food at affordable rates to all, without discrimination.

SDG-2 aims to end hunger.



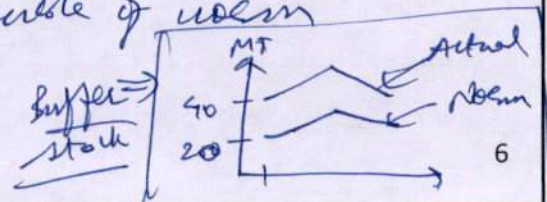
Status of India

① Quantity -

→ Green revolution raised production from 70 MT to 300 MT

→ India is food surplus, food exporter

→ Buffer stocks double of norm





## ② Quality of food

- ↳ PDS, MDM, MSP focus on <sup>cereal</sup> ~~nutrients~~
- ↳ Malnutrition (NFHS-5 → 35% stunting)
- ↳ Dual burden → Micronutrient deficiency
- ↳ Obesity
- ↳ High use of Trans Fatty Acid (TFA)

## ③ Affordability

- ↳ Subsidised ration under PDS
- ↳ Mid-day-meal ⇒ free food to school children
- ↳ ONDC → cheap food for migrants

## ④ Access

- ↳ Use of cold storage is less  
(Shanta Committee: 1000 cold vans vs 5000 needed) ⇒ reduces easy transport of food
- ↳ MDM ⇒ discrimination against lower caste students.

As per [Ashok Dalwai] we must move from food security to nutrition security in India.



2.

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

Agriculture in India suffers from built-in-depresses - disguised unemployment and low productivity.

IT 4.0 with new technology can help solve this problem.

### Blockchain

- ① Better supply chain management
- ② Secure data of Agri stock
- ③ End-to-end encryption possible.
- ④ Better logistics with smooth flow.
- ⑤ Blockchain in eNAM can help better price discovery
- ⑥ It can aid open Network for Agriculture Commerce due to its decentralised nature
- ⑦ Reduce chance of cyber hacking of agricultural data.



## Chat GPT

- ① Can provide extension services for farmers.
- ② Enable greater R&D in agriculture  
(right now only 0.8% agri GDP goes to R&D)
- ③ solve farmers' queries.
- ④ Be built-in - soil health card scheme to guide farmers
- ⑤ Help to predict monsoons
- ⑥ Move to precision agriculture.

## Challenges

Digital divide  
(~~as far as~~ 31% internet usage in rural areas)

86% small & marginal farmers  $\Rightarrow$  low awareness

Data security concerns

Agri Digital mission, Agri Stack

are in right direction.

we must note,

"If agriculture goes wrong, nothing can go right in this country".

- MS Swaminathan.



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)

De-dollarisation refers to shift towards other modes of currency and payment from dollar.

Factors for de-dollarisation

- ① Rise of other economies  
 ↳ China & India.
- ② Russia's removal from Swift Mechanism.
- ③ Sanctions CATS — on Iran, Russia and North Korea → need to move to other forms of payment
- ④ Rising anti-USA block  
 ↳ China - Russia - Pakistan Axis
- ⑤ Rise of cryptocurrency & other online modes of payment
- ⑥ Decentralisation of financial systems worldwide.



# Will dollar lose its dominance?

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

## Short Run

- It's difficult to replace dollar.
- Dollar governs 72% of global trade.
- No other currency has all features of an international currency
  - ↳ stability
  - ↳ acceptability
  - ↳ people's trust.
- USA still is among largest economies.
- IMF - basket gives highest weight to \$.

## Long Run

- share of \$ might fall.
- Rendimbi & Rupee can raise share.
- Regional financial institutes (ADB, NDB, BRICS) can shift away from \$.
- De-dollarisation can lead to fall in USA's economy in financial markets.



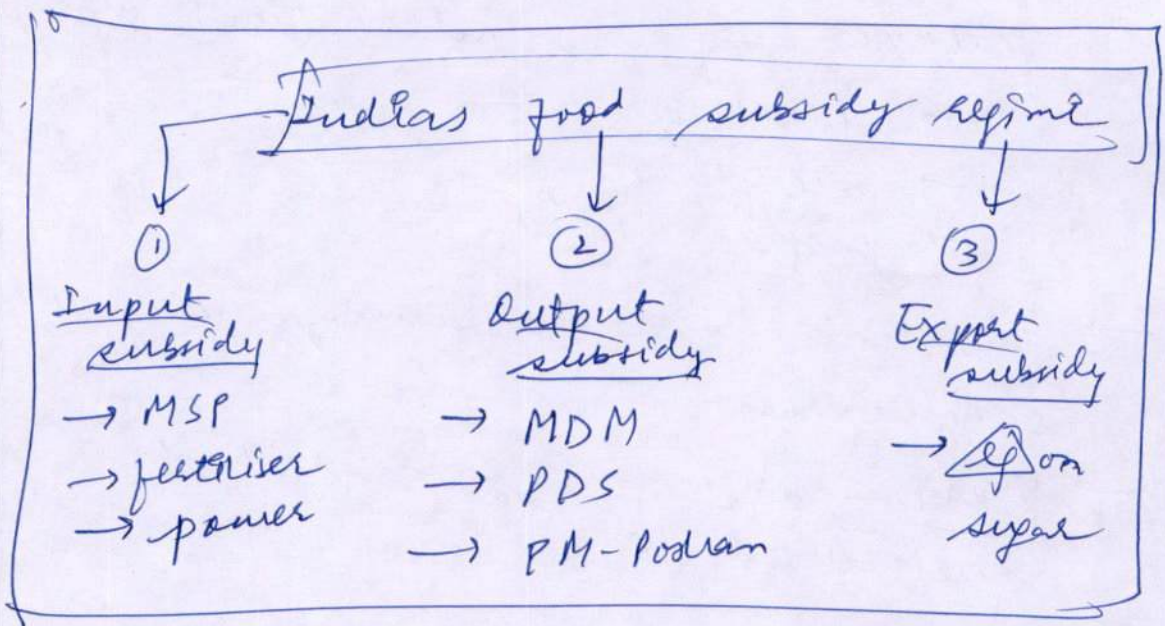
4.

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 <sup>①</sup> food subsidy regime, there is <sup>②</sup> merit in India trying to retain its policy support for the poor in the country. Discuss. (Answer in 150 words)

10

45% of Indians depend on agriculture for their living. It contributes 19% to GDP. This makes any policy change in agriculture a not issue



Pressure for developed countries

\* WTO → Agreement on Agriculture

↳ [MSP] is said to fall in Amber Box

↳ Demand to reduce it.

↳ But India says its related to food security & must be in Green Box.



\* Fish subsidy → 12<sup>th</sup> WTO meet called to reduce fish subsidy

\* No agreement on FSM (food stock holding) limits, as demanded by India.

Merit in retaining subsidy before

- ① India's policy support is not for export, but for food security.
- ② Global Hunger Index → 107<sup>th</sup> Rank → need to solve it.
- ③ WAMS-5 → 35% stunting, 20% wasting → need to solve micro-nutrient deficiency.
- ④ fish subsidy important for poor fishermen.
- ⑤ Buffer stocks needed for crisis like COVID.

India must continue to oppose developed countries' hegemony

& secure its poor, who constitute 20%

of population (Tendulkar Committee)



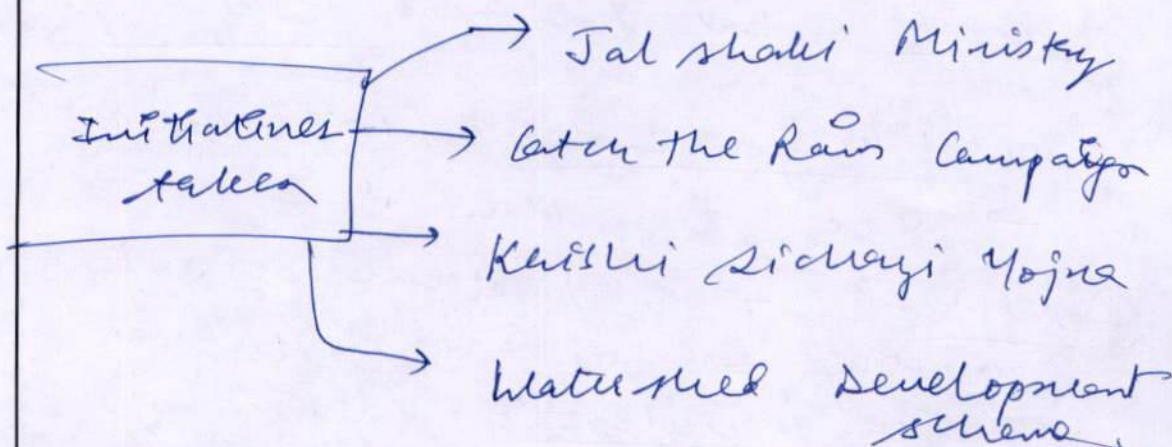
5.

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) ② ③

10

As per NITI Agya, 55% Indians suffer ~~for~~ from water stress. Further world water-3 is predicted to be around water.



Water availability

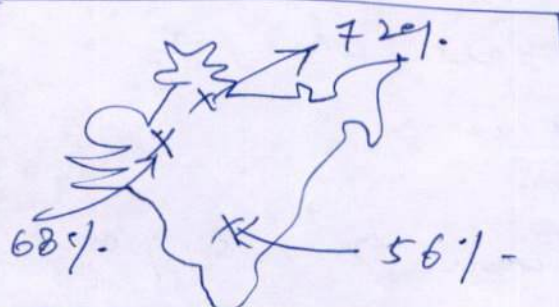


Fig-1. of water stress

→ Fall in water table

→ Erratic monsoon

→ IPCC 6th Assessment Report → Rising droughts

→ 90% ground water used for agriculture alone



## water quality



→ High ground -  
water pollution

→ Leaching of heavy metals

(eg) uranium,  
silicon

Ex: water pollution

→ Salt water

intrusion due to rising sea  
levels.

→ Drain overflows ⇒ pollutes  
fresh water

→ Acid rains ⇒ lower pH  
of water sources.

## Way Ahead

\* Mithi Shah Committee

↳ micro irrigation.

\* National Water Policy 2017

↳ Blue-green infrastructure

↳ shift MSP to markets

↳ One Water Policy

we need to preserve water - the  
ELIXIR of life for our  
continued survival.



6.

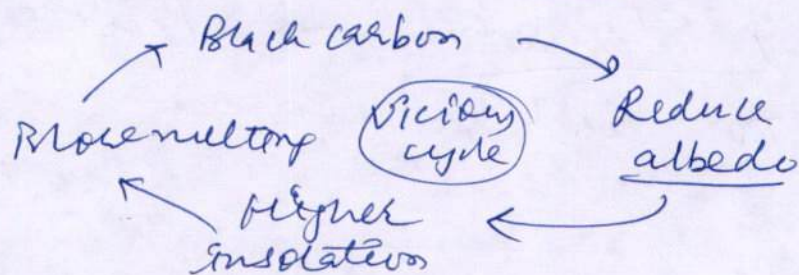
आर्कटिक में हिमनदों के पिघल कर संकुचित होने के लिए उत्तरदायी कारक क्या हैं? पारिस्थितिकी तंत्र पर आर्कटिक हिमनदों के पिघलने के संभावित प्रभाव का वर्णन कीजिए। (उत्तर 150 शब्दों में दीजिए)

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

IPCC 6th Assessment Report - predicts that by 2030, 23% of Arctic ice would have melted.

Main drivers of glacial retreat

- ① Rising GHG emissions
- ② Black & brown carbon & soot



- ③ Use of nuclear destroyers & ice breakers  
~~ex~~ Russia using nuclear technology
- ④ Ocean water heating  $\Rightarrow$  higher melting.
- ⑤ Permafrost thawing & release of methane.
- ⑥ Ozone depletion over Arctic  $\rightarrow$  higher insolation



## Potential impact on ecosystems

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- ① loss of biodiversity  
↳ ↓ polar bears, seals, etc
- ② Affect cryosphere & hydrological  
cycle.
- ③ chance of polar vortex events  
will rise.
- ④ Affect temperate front cyclones.
- ⑤ Endanger local tribes &  
their sustainable living.
- ⑥ Affect boreal forest &  
softwood availability.

Further, glacial retreat in Arctic  
can set a global race for its  
resources.

Arctic Council must become  
more inclusive & treat Arctic  
as a global common.

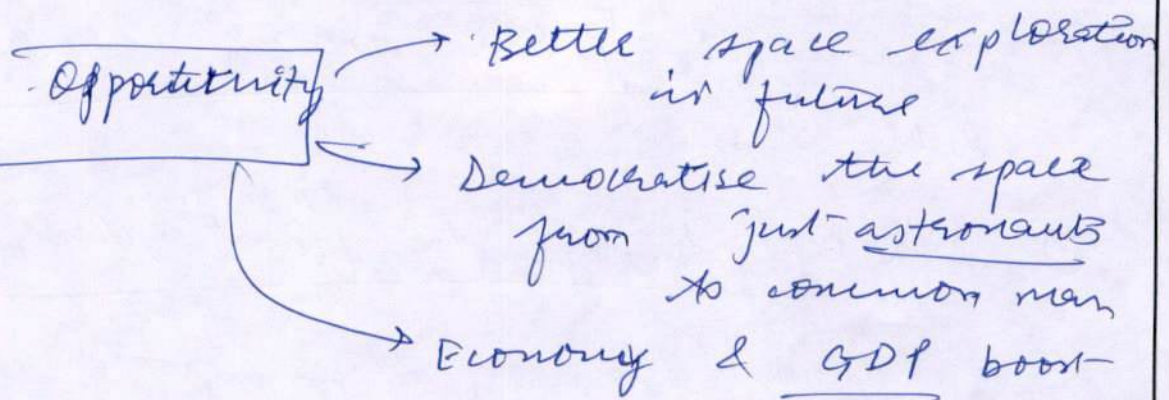


7.

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

Jeff Bezos visit to space has set the ball rolling for space tourism in the world.



### Challenges

- ① Risk of space debris & Kessler Syndrome.
- ② Widen inequality
  - ↳ Some buying land on moon vs others have no home on earth.
- ③ Threaten strategic satellites
- ④ Technological challenges
  - ↳ Escape technology, reusable launch vehicles.



⑤ Generate resources from scientific missions.

⑥ Ethical issues → should man try to venture into other planets?

### Measures

① R & D → Docking technology, reusable vehicles

② Better training of visitors.

③ Global collaboration to set norms & standards

④ Equal technology sharing between nations.

⑤ Protecting against space wars.

eg) Nitro dome

Space tourism is a two way street that needs a gradualist approach.



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)

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CAR-T cell therapy can solve  
major problems in cancer  
cure & help raise healthcare  
in India & world.

How it works?

- It acts on body's antibodies & white blood cells to specifically destroy cancer cell.
- These cells are mutated to raise their ability to deal with cancer cells & avoid damage to other healthy tissues.
- Lower risk of side effects as in chemotherapy.



Limitations of ~~CRISPR~~ Cas9

- It moves on ~~trip~~ biological error model
- cuts off mutated genes of cancer
- High cost & technology
- ~~can a must eat~~
- ~~off all the~~
- Must act on all cancer cells individually → very time taking & difficult.

How CAR-T cell can help?

- It uses body's own cells, rather than foreign sources
- Higher accuracy.
- Precision as per patient's needs.
- lower cost of technology.

CART cell needs further R&D for faster LAB to PROD



9.

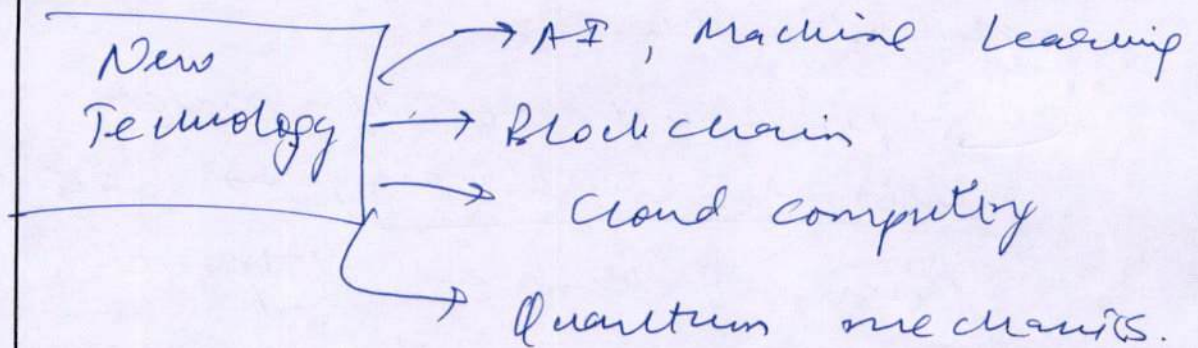
चर्चा कीजिए कि प्रमुख हिंसक चरमपंथी संगठनों द्वारा नई और उभरती प्रौद्योगिकियों के बढ़ते इस्तेमाल के विरुद्ध संगठित एवं ठोस वैश्विक प्रयासों की आवश्यकता क्यों है। (उत्तर 150 शब्दों में दीजिए)

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

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IT 4.0 has led to higher use  
of technology across all sectors  
— Including extremist organisations.



Need for global efforts

- ① Darknet - used for money laundering, drug trafficking.
- ② AI based weapons → can do huge damage
- ③ Blockchain can be used for terror financing.
- ④ Social media → radicalisation & extremism.



⑤ Use of drones for drug &  
arms smuggling.

Way Ahead

- ① Use UNSC to deal with  
emerging threats
- ② Interpol → for global  
police cooperation.
- ③ SCO-RATS → for Asia  
& South Asia.
- ④ FATF → to solve crypto  
based money laundering.
- ⑤ Set global norms.  
eg Budapest Principles.

These are needed to ensure  
global safety & security  
& peace.



10.

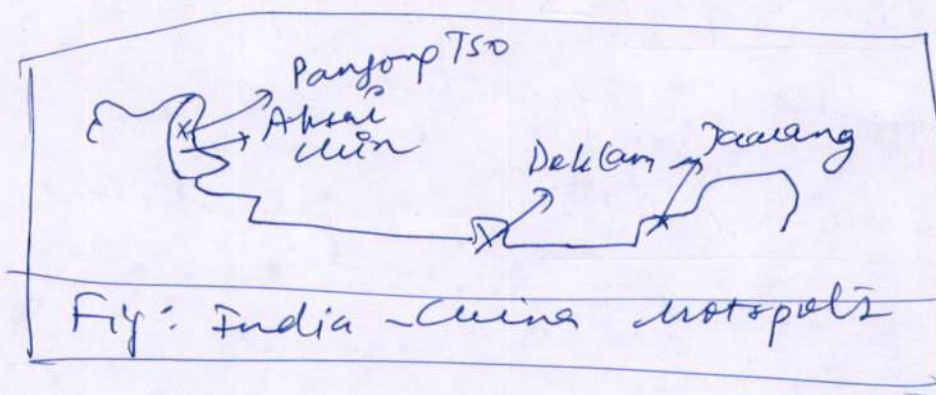
गलवान और यांगस्ते की घटनाओं के बाद वास्तविक नियंत्रण रेखा (LAC) पर तनाव बना हुआ है तथा भारत एवं चीन दोनों सीमावर्ती क्षेत्रों में अपने बुनियादी ढांचों को सुदृढ़ कर रहे हैं। इस क्षेत्र में ITBP द्वारा निभाई जाने वाली भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

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)

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ITBP is the major agency for patrolling of Indo-China border. & maintaining border security



### Role of ITBP

- ① To maintain security & safety
- ② Engage with locals for eyes & ears schemes
- ③ Provide intelligence inputs to IB, RAW, NATGRID.



④ Detect cartographic aggressions  
by China.

↳ in Arunachal Pradesh

⑤ Detect lone wolf attackers

⑥ Deal with sub-ground workers

⑦ Avoid scaling up of standoffs

⑧ Protect construction activities

↳ Border Road under  
Vibrant Village Programme

challenges → Decision to deal  
with Maoist insurgents

→ (CAG) : 58% deficiency  
of modern tools

→ Harsh climatic conditions

Mandhakar Gupta Committee  
(technology upgradation),

[Madhoo Gadhole] (one border one  
force) & [Shekhar Committee]

(raise defence budget to 3%.)

must be followed.



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 चुनौतियाँ विद्यमान हैं? व्याख्या कीजिए। (उत्तर 250 शब्दों में दीजिए)

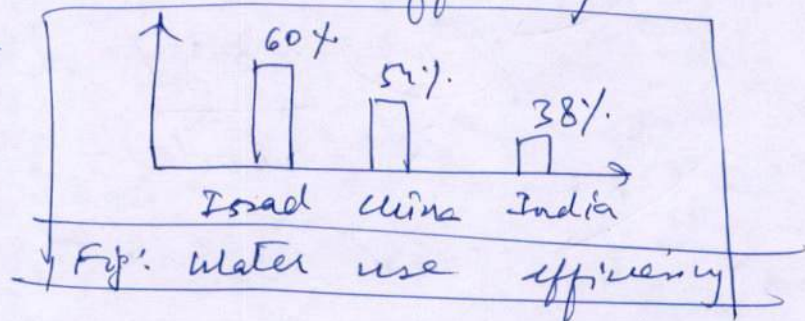
- ① Do you think there is a need for a shift from 'land productivity' to 'irrigation water productivity' in India? Justify your answer. What are the challenges in making this shift? Explain. (Answer in 250 words)

15

Land productivity refers to amount of crops produced per acre of land  
water productivity means amount of crops produced per unit of water supplied to crops.

- Need to shift from land to irrigation water productivity

- ① how water use efficiency in India



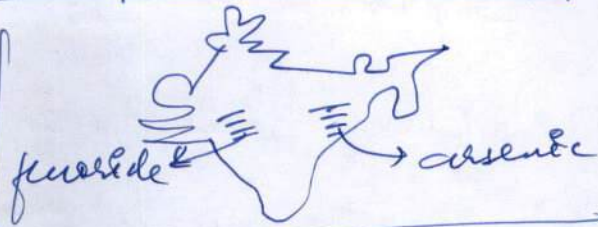
- ② 90% of irrigated ground water is used in agriculture.

- ③ Over use of ground irrigation has led to soil salinisation  
 ↳ eg Punjab, Haryana.



④ Improper ground water extraction  
→ higher ~~water~~ pollution of  
ground water

⑤ Inefficient use  
of power subsidy



↳ costs  $\boxed{0.6\% \text{ of GDP}}$  . (Eco. survey)

⑥ Over-fertilisation on land sat productivity  
has raised chemical & pesticide usage

↳  $\Delta$  Return of almonds from EU  
due to pesticide residue

⑦ Health effects of chemicals  
↳  $\Delta$  Cancer train - Punjab.

⑧ Punjab has 98% irrigation  
- canals, Haryana has 32%  $\Rightarrow$   
still water productivity higher in  
Haryana.

Challenges in this shift

① Lack of water metering  $\rightarrow$   
difficult to calculate productivity

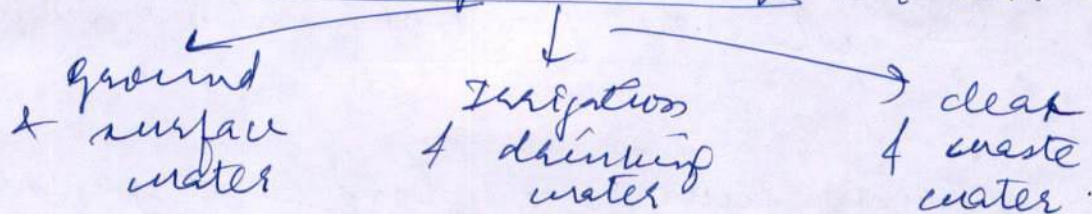


② 86% small & marginal farmers

↳ poor awareness on water use.

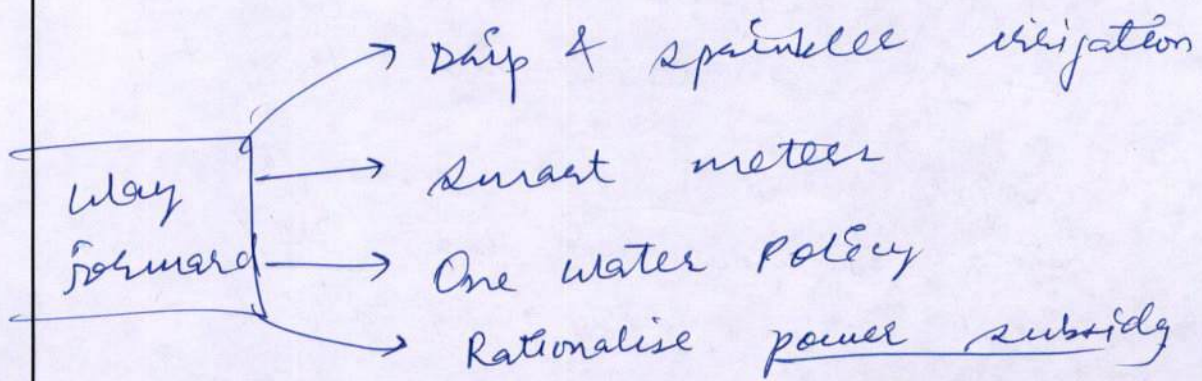
③ Low coverage of micro irrigation.

④ Mihir Shah committee points to dichotomy in policy between:-



⑤ Only 45% area is irrigated  
↳ Rest not depend on monsoon.

⑥ Poor RSD in irrigation (only 0.8% of agri GDP)



steps like PM-KUSUM, Per Drop more crop & Har Khet Ko Pani

can help solve water crisis in Indian agriculture.



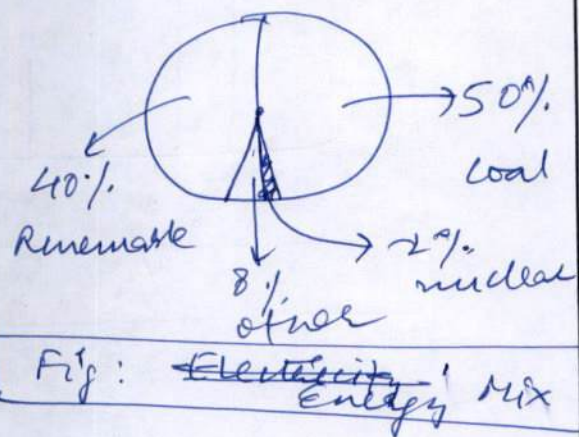
12. \*

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

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

15

Green Hydrogen  
can play a crucial  
role in fulfilling  
India's Panchamait  
Targets of Glasgow.

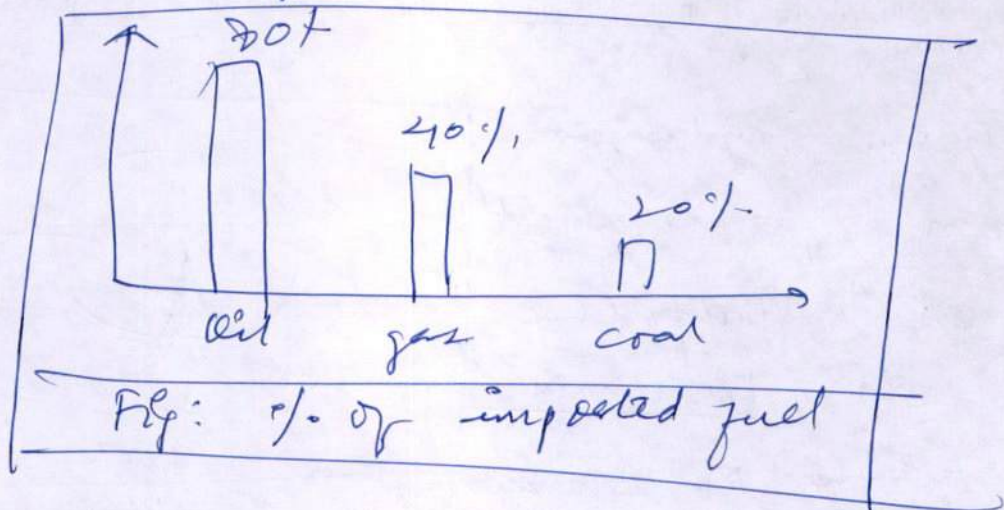


Role of green hydrogen in energy security

- ① Increased total installed capacity (TIC) of renewables to 500 GW from 160 GW presently.
- ② Act as switch → Use solar & wind energy during low demand to make green hydrogen.
- ③ Boost to domestic energy production.
- ④ Has multiple applications
  - Electric vehicles
  - Lamps
  - Industries



- ⑤ Reduce import dependency & save forex



- ⑥ Reduce carbon emissions of black & grey hydrogen.

- ⑦ Add fertiliser industry too.

### National Hydrogen Mission

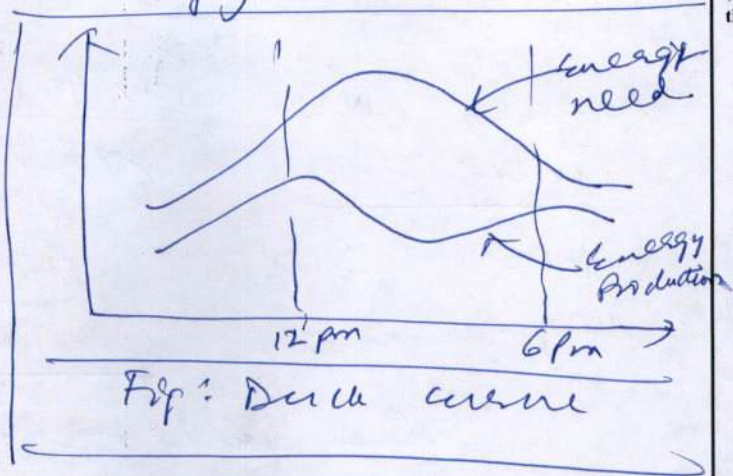
- ★ It aims to raise green hydrogen production to 5 MT.
- ★ Boost to domestic hydrogen parks.
- ★ Fulfill Nationally determined Contribution at UNFCCC.
- ★ Curb rise in energy price & OPEC shocks.



★ Reduce duck - curve effect of solar energy

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★ Higher R&D in efficient energy production



Challenges

→ Transport of hydrogen

→ High initial investment

→ High-end technology needed

→ Over-dependence on Coal.

Way Forward

→ Technology transfer agreements with rich countries

→ Smart meters & prosumers

→ Diversification of energy mix

Green Hydrogen can help realise our energy goals & make us Vishwas Gurv in energy security



13.

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

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

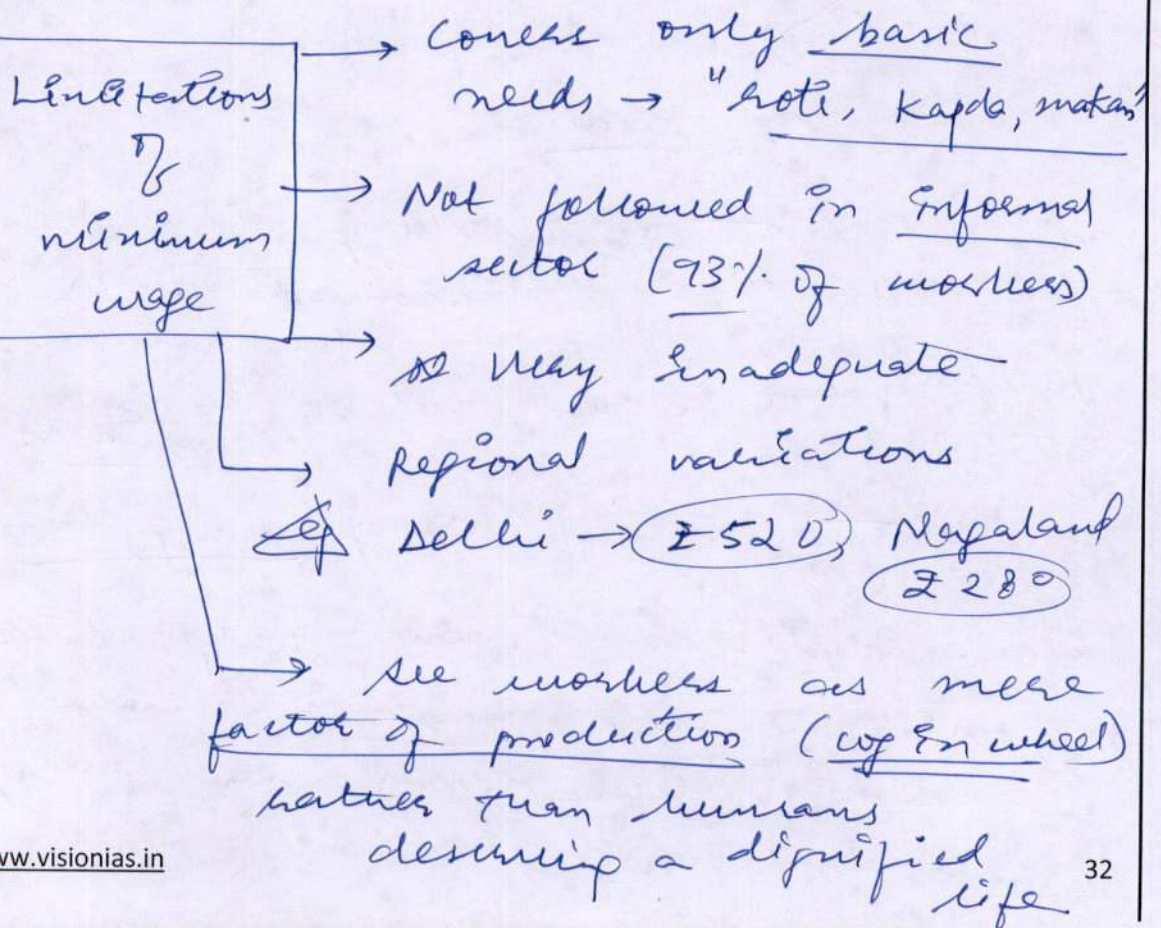
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As per UNDP Multi Dimensional Poverty Index, (16%) Indians are poor. Further (7%) are unemployed as per CMIE.

This calls for Income support & wage setting for workers.

Need for transition from minimum to living wage





## Also Benefits of living wage

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- ① Cover multiple needs → health, education, skill development
- ② In line with Anastya Sen's capability approach.
- ③ Higher dignity of work & human life (Article 21)
- ④ Reduce underpaid - unemployment & disguised unemployment
- ⑤ Raise per capita income.
- ⑥ Reduce poverty (22% as per Tendulkar Committee)
- ⑦ Enable human development.

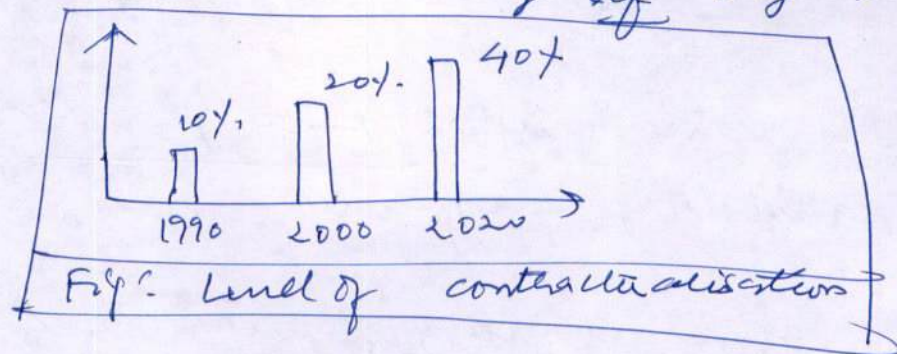
## Constraints of living wage

- ① fiscal burden on government employees.
- ② Difficult to apply to Informal sector.



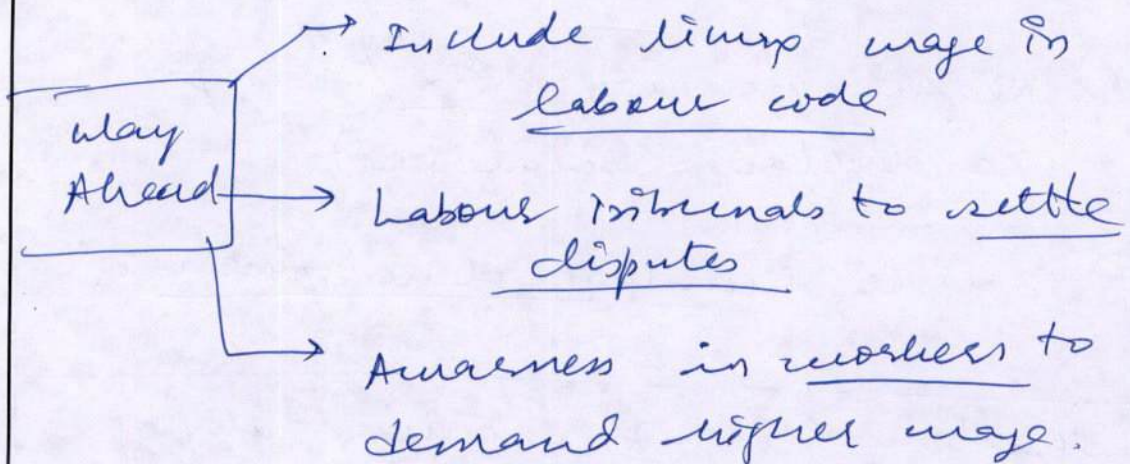
③ Lack of nation-wide unified wage.

④ Rising contractualisation of people  
→ hard to <sup>what</sup> verify if wage is paid



⑤ Migrant workers → poor records of them, what wage they get.

⑥ Attracting MNCs needs lower wages. [Race to the bottom]



Living wage is a concept whose time has come.

— Niti Aggarwal



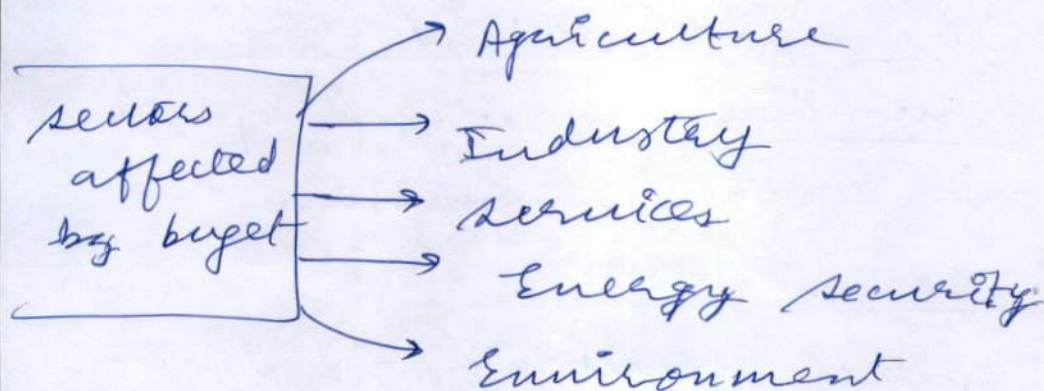
14.

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)

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Union Budget is an annual financial statement of government's receipts & payment or expenditure.



Methods of public scrutiny of budget process & policies

- ① It is passed as money Bill under Ar 110 → needs parliamentary approval.
- ② Live telecast of budget session on Lok Sabha TV.
- ③ Parliamentary Committees can refer Bills to public & experts



↳ 4 Transgender Bill referred to experts -

④ online dashboard of policies for public to see progress.

⑤ CAG audits the policy too. & tables report in parliament -

⑥ DRSC & Public Account Committee scrutinise policies & finance of government -

---

But, public scrutiny is limited

- ① No direct public involvement — only through parliament.
- ② Lack of citizenship forums to suggest policies.
- ③ delays in release of data.
- ④ Lack of literacy (26% Indians illiterate) → can't understand the Budget process.



⑤ Lack of feedback loops

⑥ Apathy of educated ones to take interest in these matters

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How to raise public scrutiny?

① Niti Ayoj → use of High Frequency Indicators & Barbell Technique

② Open platforms for debate, discussion, dissent  
↳ Apne me gov. in

③ Media channels can do opinion polls on policies

④ Restricted public sitting allowed in Budget session

⑤ Awareness in public on budget process

⑥ Local governments to give policy inputs

This can make budget process transparent - After all,  
"Sunshine is the best disinfectant"



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)

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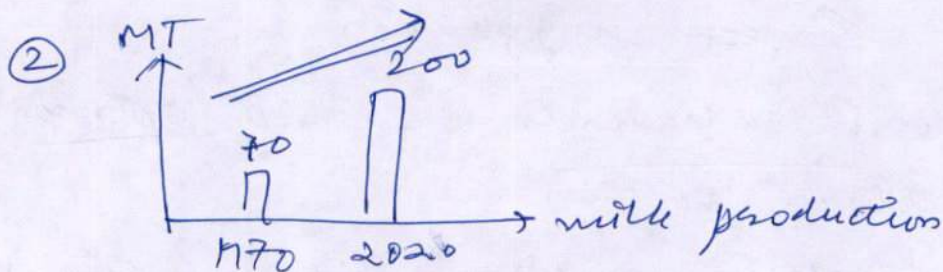
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India is the largest producer  
of milk (200 MT) in the world.  
But dairy still suffers from  
several challenges.

### Transformation

① Operation Flood (White Revolution)

↳ launched in 1970-



③ Largest number of cattle in world

④ Income of dairy farmers rose  
from ₹4000 in 1970 to ₹10000  
now (NSD)

⑤ Rise of dairy cooperatives  
↳ Amul, Mother Dairy.

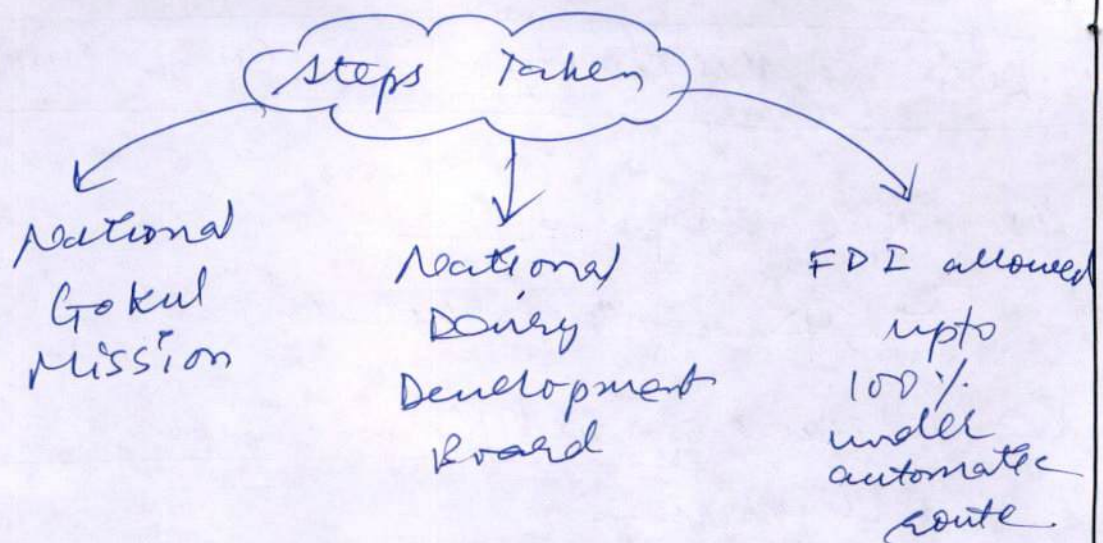


## Low productivity of dairy animals

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- ① High tropical diseases  
↳ ~~if~~ Foot & mouth disease
- ② Failure of artificial insemination techniques.
- ③ Poor availability of feed (green) & fodder (dry).
- ④ Low veterinary care available
- ⑤ Copra and oil cakes → too expensive.
- ⑥ Low cross breeding in dairy.  
↳ ~~if~~ Sahiwal X Jersey
- ⑦ Low milk production per cow.
- ⑧ Lack of R & D in dairy  
(only 0.8% of agri GDP)
- ⑨ Lack of scientific management of cattle.





### Steps to take

- ★ Technology transfers from Australia & New Zealand.
- ★ Dedicated dairy R&D at ICAR.
- ★ Promote integrated farming → used cow manure for fertiliser.
- ★ Raise cross-breeding facility.
- ★ Rural health care centres for cattle.

This can help solve some of the problems of - doubling farmer's income & food security as per Asiatic Dalwai Committee

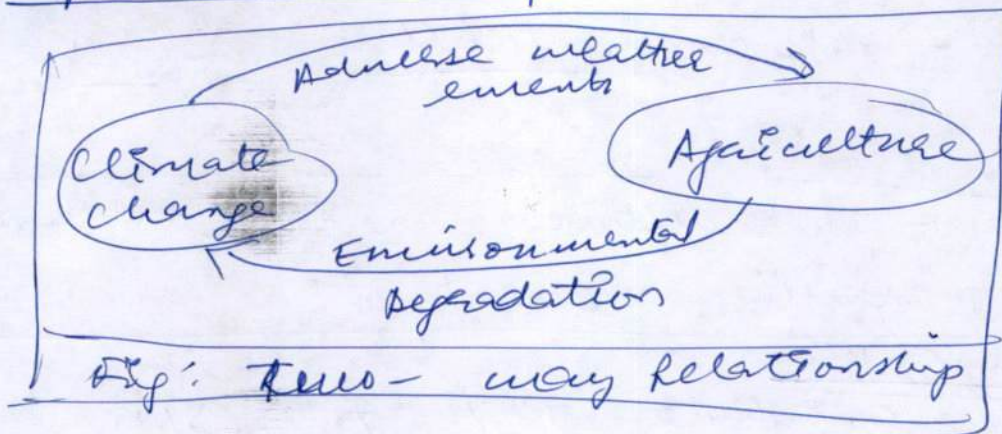


6. जहाँ एक तरफ जलवायु परिवर्तन, फसल की विफलता के लिए जिम्मेदार है, वहीं दूसरी तरफ चरम मौसमी घटनाओं के लिए कृषि क्षेत्रक स्वयं आंशिक रूप से जिम्मेदार है। विवेचना कीजिए। भारत में कृषक समुदाय की प्रत्यास्थता को सुदृढ़ करने के लिए राष्ट्रीय कृषि आपदा प्रबंधन योजना के तहत क्या रणनीति अपनाई गई है? (उत्तर 250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

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

15

Relationship between climate change and agriculture is deeply interlinked - with feedback & repercussions loop.



How climate change leads to crop failure?

① IPCC-6<sup>th</sup> Assessment Report → rising heat waves → lower water for irrigation.

② IMD points to erratic monsoon → 55% farmless monsoon dependent

③ Higher chance of pest attacks → lowest attack - Punjab



④ Rise of sea level → endanger  
coastal farms

⑤ global warming → ~~lower~~ effect-  
craps metabolic processes

⑥ floods & cyclones rising ⇒  
inundate ~~flood~~ farm lands.

⑦ snow melting in Himalayas  
⇒ affect horticulture of J&K.

---

How agriculture leads to extreme  
weather events?

#### Air Pollution

① contributes 18% of GHG.

② Flood irrigation of paddy ⇒  
methane emissions.

③ Cattle also contributes to  
methane emission

#### Soil Pollution

④ soil salinisation due to  
over irrigation ⇨ Punjab

⑤ chemical pollution.



⑥ Lower fertility

↳ ~~up~~ fungus → carbon content  
fell from 0.7% to 0.3%

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### Water Pollution

⑦ Algal blooms due to nutrient-  
flow from farms

⑧ Ground water pollution.

### National Agriculture Disaster Management Plan

\* Develop climate resilient varieties

\* Focus on millets → drought  
resistant

\* Traditional farming methods  
↳ ~~up~~ Kharif → under sea farming

\* Better weather forecast to  
predict monsoon & drought

\* Micro irrigation (Per Drop More Crop)

\* Dryland farming  
↳ ~~up~~ Collaboration with Israel

There is need for an Evergreen  
Revolution in India.

Sustainable

Efficient Equitable



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) (2)

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) (3)

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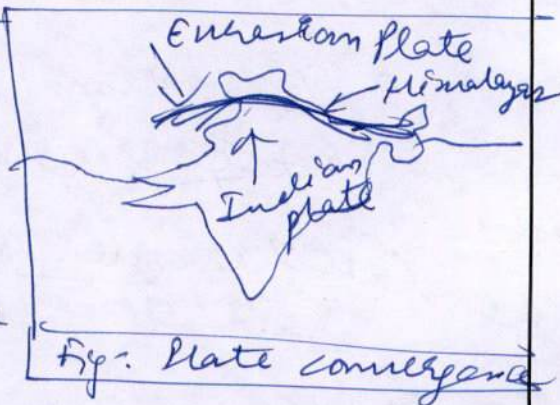
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Earthquakes refer to sudden shaking of earth due to release of energy along faults.

They can do significant damage to life & property as seen in Turkey & Syria.

Vulnerability to ~~eg~~ earthquakes from Himalayas

★ Continent-continent convergence is leading to rise of Himalayas & higher earthquake chances.



★ 52% of Indian land is vulnerable to earthquakes.

★ Blüf was a major event (2001)



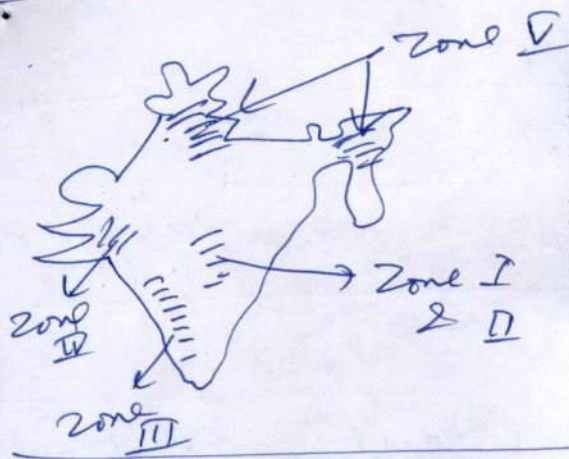
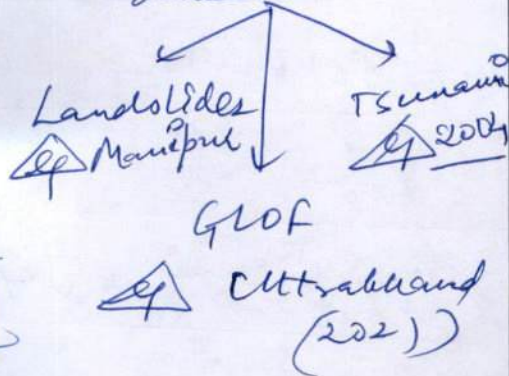


Fig: vulnerability Map

\* Earthquake leads to other disasters



\* Anthropogenic activities like mining, transport, tourism, further raise vulnerability.

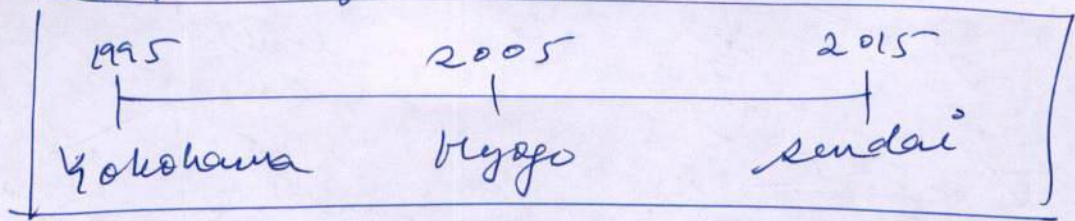
☞ Joshimath sinking -

### Institutional Measures Taken

- ① NDMA guidelines for earthquake.
- ② NDRF for rescue & rehab.
- ③ SEC - Earthquake Summit.
- ④ SARC Disaster Plan for regional cooperation.
- ⑤ Structural measures → earthquake resistant building code.
- ⑥ Non-structural measures → mock drills of locals.



## ⑦ Signed global agreements



Significant gaps still exist-

- ① Lack of local involvement
- ② Low use of nowcasting
- ③ Poor adherence to building codes
- ④ Low integration of tribal knowledge  
↳ Andamanese tribes remained safe in 2004 Tsunami.
- ⑤ Lack of inter-agency coordination
- ⑥ Low power to Panchayats  
(Principle of subsidiarity)

Disaster management plan,

techno-legal robustness &

following IPM's 10 point agenda

can help make India  
earthquake resilient.

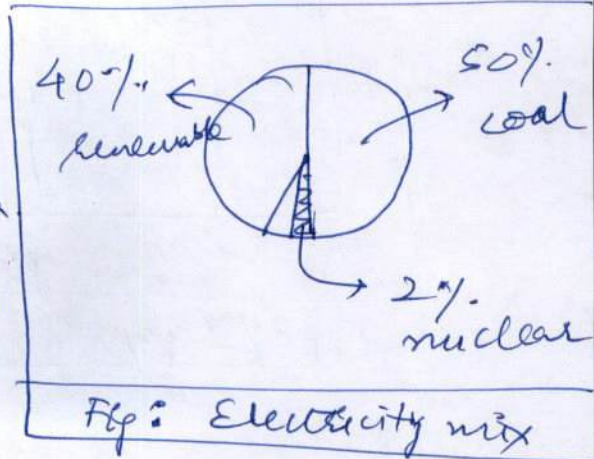


8. हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250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

Recently, scientists announced net energy gain in nuclear fusion reaction, which is considered as a major scientific breakthrough for the future of clean energy. What are the advantages of nuclear fusion based power generation? What are the limitations in using it to generate electricity at a commercial scale? (Answer in 250 words) 15

Nuclear energy contributes just 2% of electricity in India.

Fusion technology can raise this share.



### Nuclear fusion technology


 large atom is split into smaller atoms, releasing large energy & heat.

(Plutonium, Tritium, Deuterium)

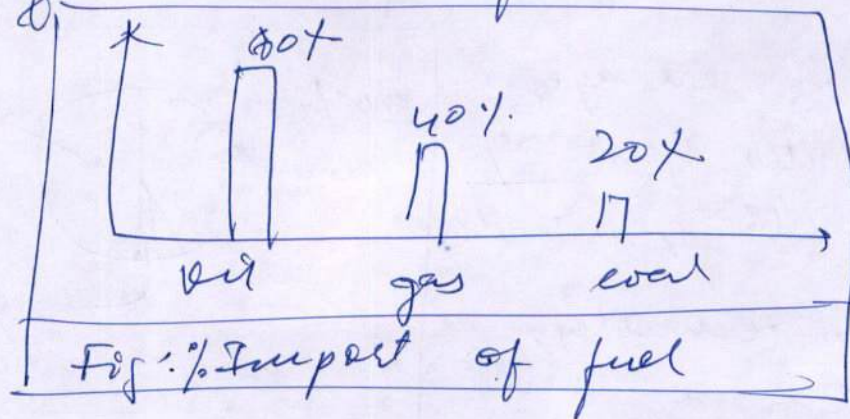
### Advantages of nuclear fusion

- ① higher energy generation than fission that is presently used.
- ② lower emission & pollution
- ③ Clean and sustainable source.



④ It can attain self propagating chain reaction.

⑤ Can reduce import dependency for & same forex



⑥ Reduce over dependence on coal in energy mix.

⑦ Help reduce emissions & limit global warming to 2°C by 2100

⑧ AEd sustainable goals of Glasgow

⑨ Uses Hydrogen → abundant in nature

Limitation of nuclear fusion

Technology-Based

① High technology needed

② Difficult to achieve conditions for fusion.

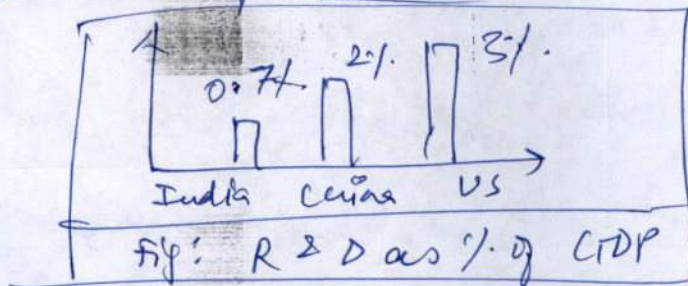
High temperature

High pressure



③ High cost of fusion technology.

④ Lack of R & D in India



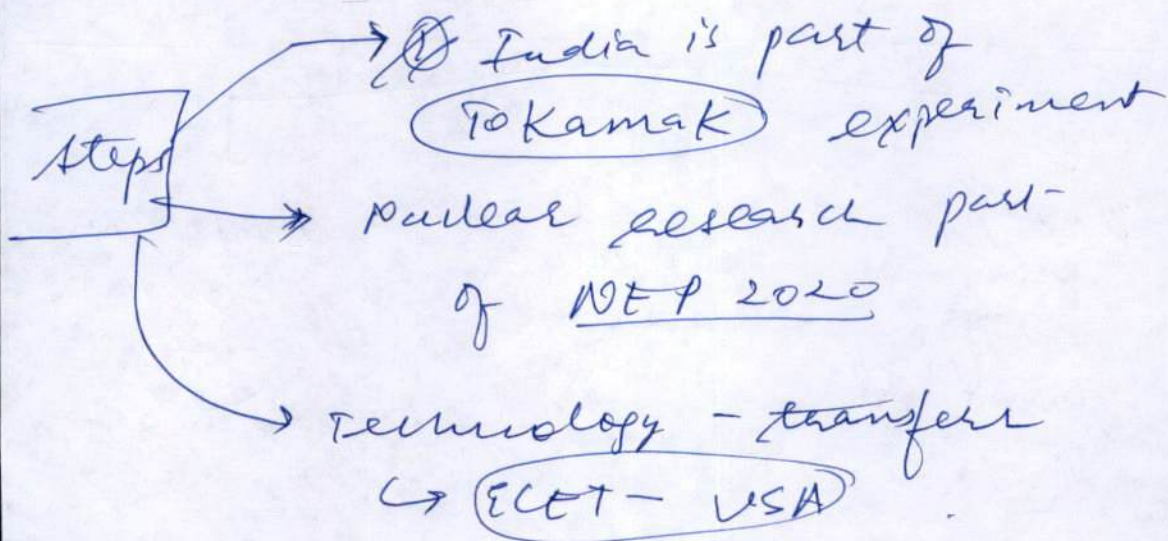
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Other limitations

⑤ Public protest -  
eg Kudankulam protest

⑥ Low fiscal capacity

⑦ Threat of nuclear disaster  
eg Fukushima



Nuclear technology is a double edged sword that needs to be used with prudence.



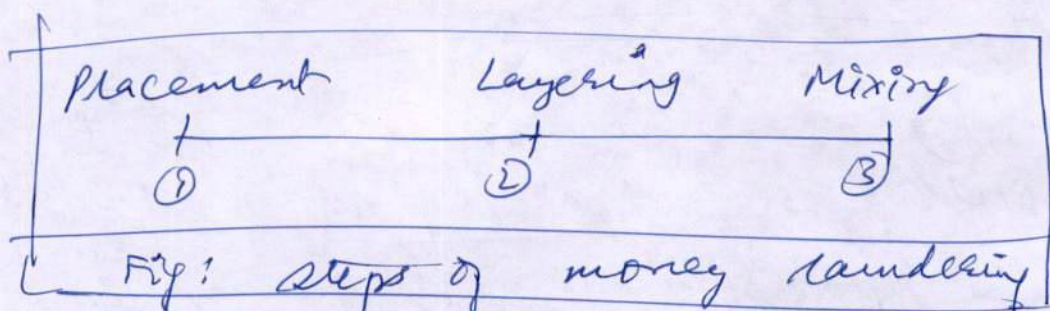
19.

हालिया संशोधन को ध्यान में रखते हुए, भारत में धन शोधन (मनी लॉन्ड्रिंग) के खतरे से निपटने में धन शोधन रोकथाम अधिनियम, 2002 की प्रभावकारिता का परीक्षण कीजिए। (उत्तर 250 शब्दों में दीजिए)

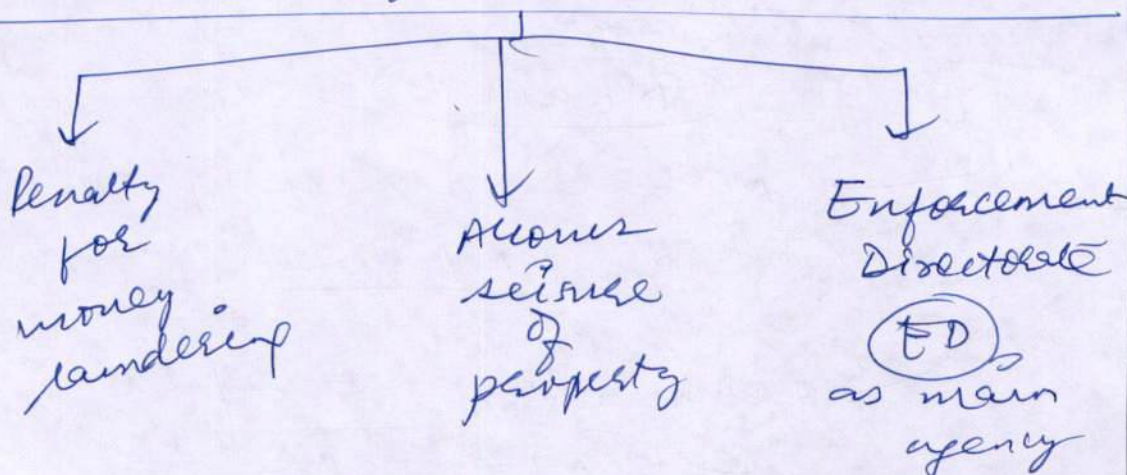
Keeping in view the recent amendment, examine the efficacy of the Prevention of Money Laundering Act, 2002, in tackling the menace of money laundering in India. (Answer in 250 words)

15

Money Laundering refers to conversion of black illegal money into clean money through frogs, washtubs & mixers.



Prevention of money laundering, 2003



Recent amendment



- \* Greater power of arrest & seizure to ED.
- \* Difficult bail conditions.
- \* Stricter penalties for money-laundering.

[Supreme Court] has upheld these amendments recently.

### Merits of amendment

- \* Better & more efficient-tracking & solving of the issue.
- \* Detrahant for defaulters & criminals.
- \* Deal with chamela in better way.
- \* Tackle shell-companies & round tripping.



## Limitations of the amendment

- \* Possibility of misuse against political opponents.
- \* Does not talk of cryptocurrency & online money laundering.
- \* Does not address cross border collaboration to tackle the crime.
- \* Money laundering depends on other crimes, not made a separate offence.
- \* No specific punishment for local maafala - agents.

## FATF - recommendations

- ↳ Make it a separate offence
- ↳ Banks to retain data for 10 years
- ↳ Global cooperation, (through Interpat & other agencies)

These steps will help retain the sanctity of global financial architecture



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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India has 7500 km long maritime border. This raises several security threats from IOR.

### Security threats

- ① Piracy & criminal activities  
↳ especially near Somalia
- ② Terrorist activities  
↳ eg 2008 Mumbai attack  
(entered via Mumbai coast)
- ③ Hideouts to criminals in islands
- ④ Highly critical maritime assets  
↳ eg Oil wells - vulnerable to attacks.
- ⑤ China's (King of pearl) strategy



⑥ Rising sea level → threat  
of illegal climate refugees  
↳ From Bangladesh's Majuli  
Island.

⑦ Fishing disputes between  
India & Sri Lanka.

⑧ Nuclear submarine &  
chances of attacks.

⑨ China's rising claims in  
red - data line can choke  
Malacca Strait, Taiwan Strait.

### Robust strategy

① Security

- ↳ thermal sensors, flood lights
- ↳ Coastal Police training.
- ↳ Involve local fishermen  
↳ i-d cards for them.
- ↳ Eyes & Ears approach.



↳ use Andaman & Nicobar  
& Lakshadweep Islands strategically

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## ② Development

- ↳ Coastal village <sup>development</sup> ~~stages~~
- ↳ Income & jobs for coastal people to avoid radicalisation

## ③ Diplomacy

- ↳ Joint-drills with Malaysia,  
Singapore, Indonesia
- ↳ Gurgaon-IFC for IOR
- ↳ Use SCO, BRICS well
- ↳ Asia-Africa grouping for  
piracy.

These will help to secure  
sovereignty, integrity & unity  
of India & enable it to be  
net security provider in IOR.



## SPACE FOR ROUGH WORK