



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. : 0548353

अभ्यर्थी का नाम/Name of Student : Annapurna

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27.08.23

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

केंद्र
Centre

Patna

निरीक्षक के हस्ताक्षर
Invigilator's Signature

78/8/23

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

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)		
सकल योग (A+B) / GRAND TOTAL (A+B)					



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Time Allowed: **Three Hours**

अधिकतम अंक: 250
Maximum Marks: 250

प्रश्न-पत्र संबंधी विशेष अनुदेश

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

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

सभी प्रश्न अनिवार्य हैं।

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

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

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

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

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

QUESTION PAPER SPECIFIC INSTRUCTIONS

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

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

All questions are compulsory.

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

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

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

Keep the word limit indicated in the questions in mind.

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

EVALUATION INDICATORS

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

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1.

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

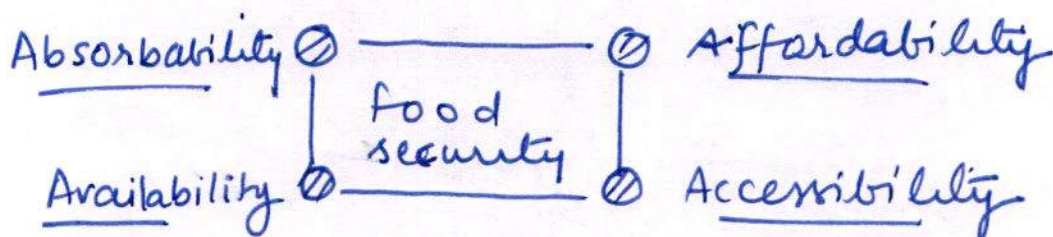
What are the different dimensions of food security? Examine India's status in terms of ensuring food security with regard to these dimensions. (Answer in 150 words)

10

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

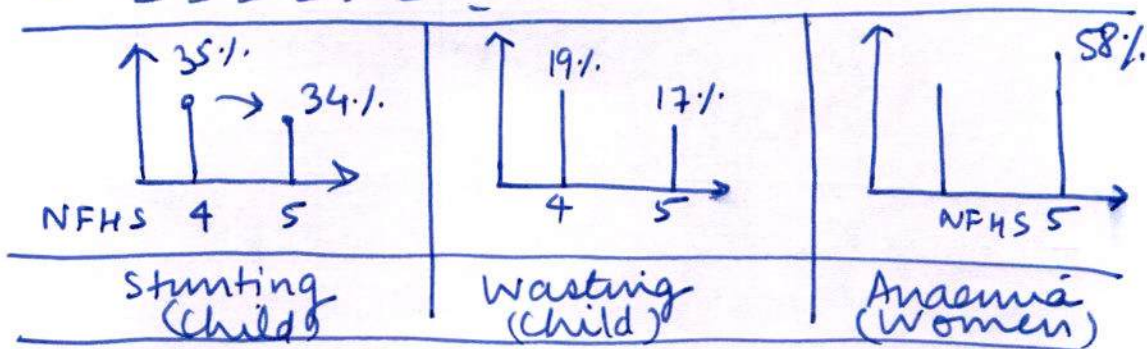
FAO's motto of 'Fiat Panis' defines food security as ^{so nutritious} food available to ALL persons at ALL times at ALL places

Dimensions :-



India's status :-

I. Absorption



- ① Above data shows some improvement in child absorption, Anaemia still prevalent in mothers.
- ② Poor WASH diffusion reducing absorption

II. Affordability

- ① NFSA '13 → food security as a 'rights based' approach
- ② PDS, Annapurna portal (grain ATM) for affordable food to all

III. Accessibility

- ③ farm to form campaigns, ensuring good food production
 - ↳ MSP for farmers
 - ↳ e namo
 - ↳ seeds distribution

IV. Availability

- healthy & nutritious food available
ex - promoting SHREE ANNA
- Agro ecological conservation farming for sustainable availability
- food processing, Mixed farming promoted by Mega food parks etc.

Steps
Schemes like 'reaching last mile'
(Budget '23) for food security to all
is crucial for SDG-2

2.

ब्लॉकचेन और चैटजीपीटी जैसी आधुनिक प्रौद्योगिकियां कृषि को अधिक कुशल और संधारणीय क्षेत्रक में बदलने की अपार क्षमता वाले शक्तिशाली साधन हैं। भारत के संदर्भ में चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Modern technologies such as blockchain and ChatGPT are powerful tools with immense potential to transform agriculture into a more efficient and sustainable sector. Discuss in the context of India. (Answer in 150 words)

10

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

Agriculture contributes ~4% to by CAGR, 45% are employed here & forms backbone of Indian economy

[ex] Only sector to register positive growth during pandemic

Immense potential of

<u>Blockchain</u>	<u>ChatGPT</u>
Decent ralised immutable efficient • allows record keeping • verifies addition to ledger 	AI & ML led emerging tech - ChatBot, research & content creation support

Transform Agriculture into :-

I. More efficient :-

① sowing & crop choice rationalisation by predictive modelling by chatGPT

[ex] Hyderabad - ICRISAT & AI model for farms

② land parcels record keeping
ex - Bhoomi portal can be integrat-
ed with ~~chat~~ Blockchain

③ records of market demands & trends
↳ can help overcome COBWEB for
pulses

II. Sustainable :-

④ Greater awareness in local language
ex - ChatGPT Bhashini with Kisan
Pathak

⑤ Branding & selling by listing
buyers & sellers.



Technology can be a leveller to overcome
agriculture divide & make our
Annadata → Sayagyatā

3.

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

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

Recent bid for shift from dollar due to weaponisation in payment systems was seen

Factor

- ① America's sanction ex-SWIFT
- ② Russia Ukraine war led inflation
- ③ ~~for~~ countries bid to reduce dependence on dollar.

~~④~~

Dollar losing dominance

④ → Years of time for currency stability

- Trusted, hard currency
- shift would create disuniformity

- (Yes) → currency swaps on rise
- RBI's report on internationalising ₹
 - China's yuan gaining prominence
 - 3rd party led trade
- [ex] - UAE - China - India for Russian oil.

Thus, de-dollarisation is still a paper reform.

4.

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

Despite significant pressure from the developed countries to alter its food subsidy regime, there is merit in India trying to retain its policy support for the poor in the country. Discuss. (Answer in 150 words)

10

India's food subsidy bill matters
~ 2.54% of total subsidy



Significant pressure at WTO conference over Amber Box subsidy is seen. Still,

merit in India's food policy

- ① Social Justice to ~50% Multi-dimensionally poor
- ② food for all due to poor purchasing power.
(In - ₹1961 per person
vs. China - ₹11733 per person)
- ③ India's constitutional values call for such institutionalised

support.

④ Feeding 1.3 Billion population requires such intervention

⑤ India's argument: such support doesn't distort global markets.

Way forward

↳ Direct benefit scheme

↳ (PDPSS) led procurement

[ex] ASHA to allow food subsidy

↳ food grains atm ^{by} tech use

↳ Beneficiary list revision

(Shantakumar com).

Food subsidy 'like price support' is backbone of India's famine relief strategy⁴

- M. Swaminatha

5.

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

Several initiatives have been taken by the government towards addressing India's water needs, but the issues of water availability and water quality still warrant prioritised intervention. Discuss. (Answer in 150 words)

10

India holds 18% of world population & only 4% of water resources showing stark mismatch

Initiatives by government.

1. Har Ghar Jal
2. AMRUT
3. PM Krishi Sinchayee Yojna
4. MISHTI for mangrove development across water bodies

Issues require priority intervention :-

① Water availability

① Intermittent nature of tap water need last mile pipe connection

② water for irrigation by tanks & river water harvesting

③ solar pumps subsidy intervention needed

II. water quality

④ one water approach to reuse & process all water.

⑤ slums access to quality water to prevent diseases.

⑥ quality water by ground water recharge

Currently 271/861 polluted

⑦ preventing river pollution by Engineering solutions

Amrit Sharada for Amritkal
is the way forward for
"Water for all"

6.

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

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

10

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

Polar amplification & glacial retreat of Arctic is one of the global climate tipping off points



Major drivers :-

① Climate change induced global warming

↳ Earth set to reach 1.2°C
↳ 2022 (warmest year) } IPCC AR6

② Meteorological drivers

↳ weakening of jet streams & polar vortex.

③ Rising of GHG due to anthropogenic industrial commercial usage
↓

cause pollution ex - soot, smog
↓
increase ALBEDO & glacial melt

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

Potential impacts

<u>Positive</u>	<u>Negative</u>
① New routes for communication & movement	① Rise of sea level by ~91cm by 2100 (IPCC)
② Oil & natural gas access	② Submergence of coastal cities <u>Ex</u> - Tokyo, Chennai, Mumbai
③ Research prospects →	③ R Retreat of permafrost - can enter unknown organism into ecosystem

Arctic melting is evidentiary of Earth's carrying capacity breach & reaching limits to growth

7.

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

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

space tourism is use of space
instant tech for travelling &
exploring space

Ex- Blue origin, Virgin Galactic
are agencies promoting this

Challenges :-

① Elitist altruism in space
tech led tourism
↳ not available to poor

② Risk involved
↳ launch & carrier vehicle
needs 98% efficiency to
withstand re entry

③ Health impact
↳ high pressure & conditions in
in space impact bone density
(Osteoporosis)

L PTSD & stress disorders if proper support not taken

④ Opportunity cost

Money can be utilised for social welfare.

Measures : -

1. Democratize space tourism by international coordination
2. Use for Sci. research
3. Meta for space tourism
4. R & D for allowing affordability
(ex - India < 1% for space research)
5. Policy for wise use ~~for~~ of space & non creation of debris via tourism

8.

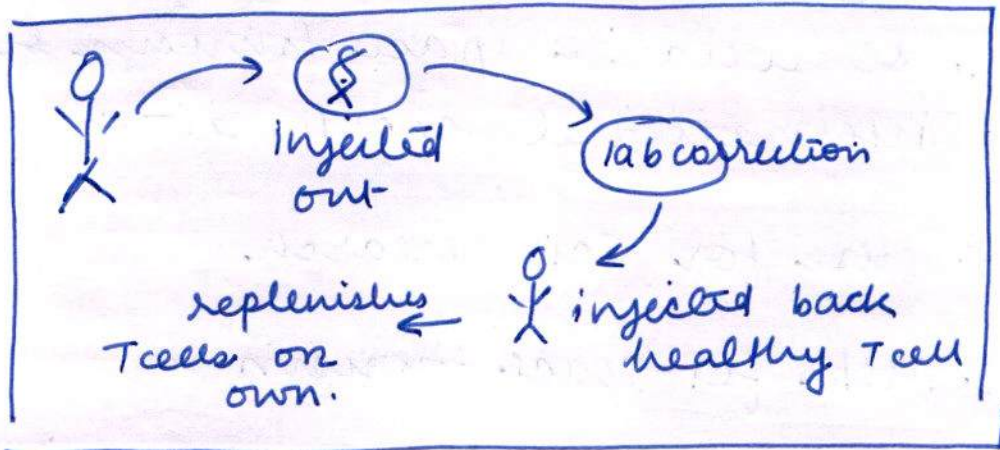
वैश्विक स्वास्थ्य विशेषज्ञ व्यापक रूप से मानते हैं कि CAR-T सेल थेरेपी का विकास कैंसर के उपचार में एक बड़ी सफलता हो सकता है। CAR-T सेल थेरेपी, CRISPR-Cas9 तकनीक में व्याप्त कमियों को कैसे दूर कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Global health experts widely believe that the development of CAR-T cell therapy can be a game changer in the treatment of cancer. How can CAR-T cell therapy overcome the limitations of CRISPR-Cas9 technology? (Answer in 150 words)

10

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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CAR-T cell therapy refers to chimeric based artificial restoration of T-cell for disease correction

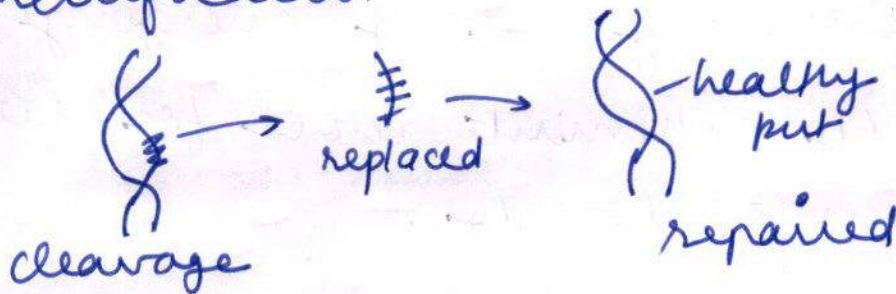


Game changer for cancer :-

- ① Allows correction of unhealthy carcinogenic cell by lab intervention
- ② No need for multiple chemotherapies as CAR-T is self replenished
↳ only certain regular visits
- ③ If made affordable can correct measures against cancer

Overcoming limitations

1. CRISPR-Cas-9 is one time rectification



2. Repairing stage requires technical reception - scale of rejection
3. Much more costly than CART.

Thus ethical usage & socially inclusive application of this tech plays medical innovation strides

9.

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

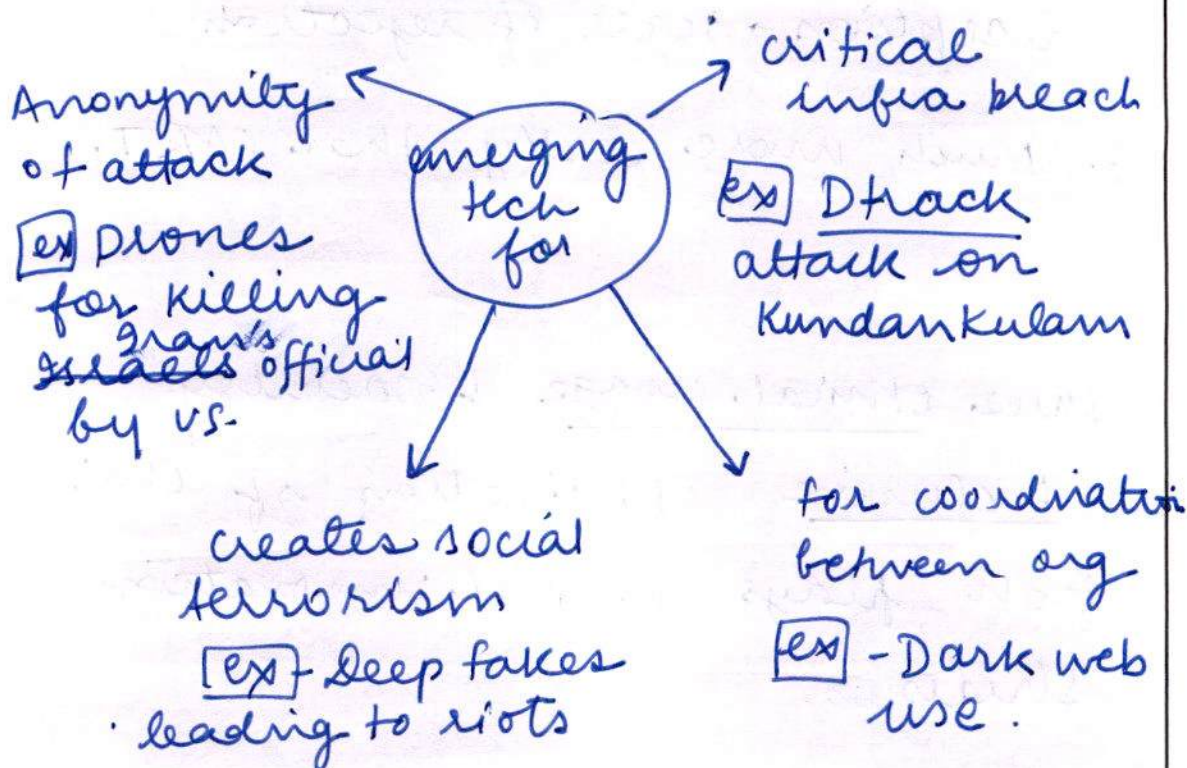
Discuss why the rising deployment of new and emerging technologies by prominent violent extremist organizations demand concerted global efforts. (Answer in 150 words)

10

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

Cyber espionage, cyber warfare etc
are increasing use of emerging tech by extremist actors for violence & security hazards.

Rising deployment



Need for global efforts :-

① Gorbachev's security doctrine
↳ "No indivisibility of

security: there can be security of all or none at all

② Emerging tech. led terrorism impacting all nations

[ex] Spyware, Ransomware

→ US Fed lost ~0.2% GDP to paying ransomware attacks

③ Data dependence increase due to IR4.0 → demands concerted efforts

(Wf)  India's bid for safe cyber hygiene at UN (vulnerability index - 10th rank)

Budapest convention can reformed to include developing countries

"Wisdom is in dancing to the tune of changing world"

~ Thirukkular

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 हशिप में नहीं लिखना चाहिए
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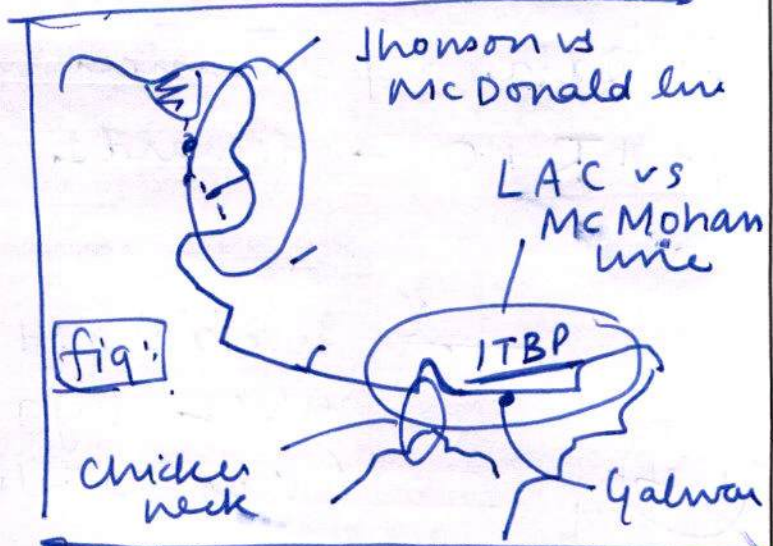
Recent border skirmishes across Indo-china borders led to the policy actions by ^{India} govt. on borders

ex - Vibrant Village prog

Role of ITBP :-

① Security provider & first-line

of internal security defence.



② Supports Assam Rifles in Eastern sector. ex - Aunachal borders

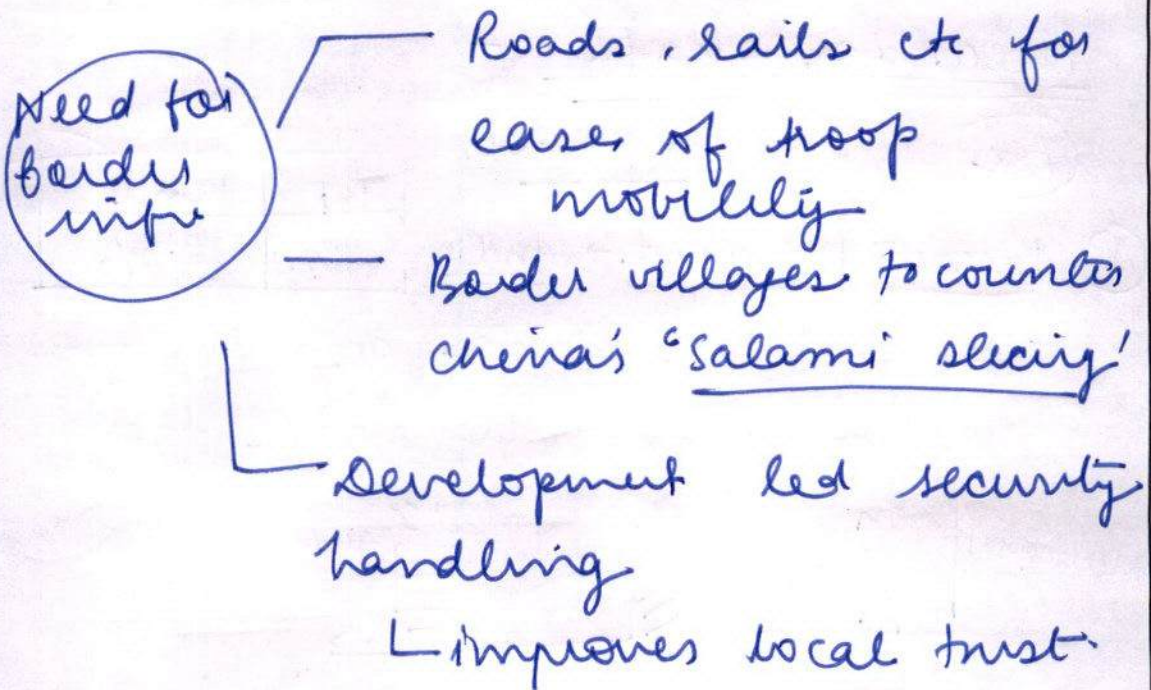
③ Keeps in Border dev. 1

ex - supports BRO in road project completion

④ provides support to local
policing to maintain internal
stability

⑤ overcome hydro warfare by
guarding critical infrastructure

ex - Dams across Brahmaputra



"The normalcy of Sino-Indian
relations depends on the situation
at borders" ~ MEA

11.

क्या आपको लगता है कि भारत को 'भूमि उत्पादकता' के सिद्धांत को छोड़कर 'सिंचाई जल उत्पादकता' के सिद्धांत को अपनाने की आवश्यकता है? अपने उत्तर का औचित्य सिद्ध कीजिए। यह बदलाव करने में कौन-सी चुनौतियां विद्यमान हैं? व्याख्या कीजिए। (उत्तर 250 शब्दों में दीजिए)

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

15

In a report, Mishra Shah committee stated that India should move from land productivity to water use productivity.

Need for shift :-

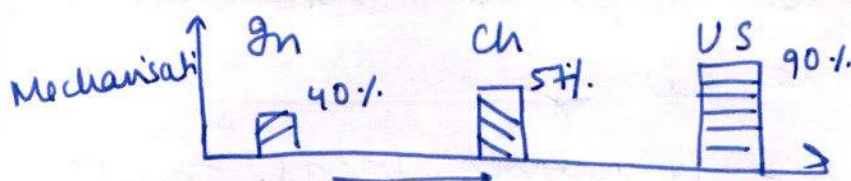
(Yes)

Push factors

① Limited land → India

Pop.	land
18%.	2.3%.

↳ prevents adopting greater mechanisation into small farms

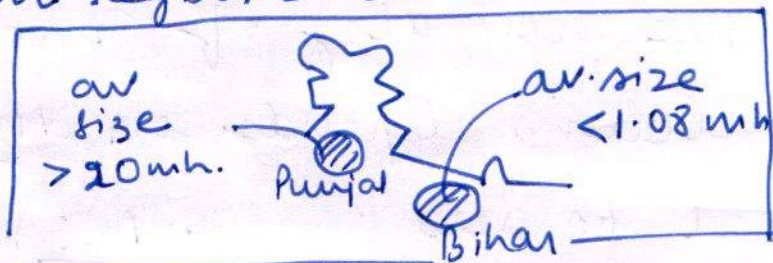


② Divide in regions on land availability:

↳ this

prevents

inclusive outreach to improve land productivity.



3. Degraded land quality
↳ 30% of land in India degraded.

4. current water use efficiency
very poor
ex only $\frac{1}{6}^{th}$ of irrigation under
MICRO irrigation

5. Scope for water use efficiency
by → River interlinking
↳ Run of river projects
↳ microirrigation, drip
↳ watersheds (ex - Ralegaon
Siddhi)
↳ Traditional irrigation method
ex - Tohads, Ahar pynes etc

(No)

1. Overdependence on Monsoon can't
be shifted overnight.

2. water proportion also alarming
↳ 271/860 groundwater exhausted
due to irrigation dependence

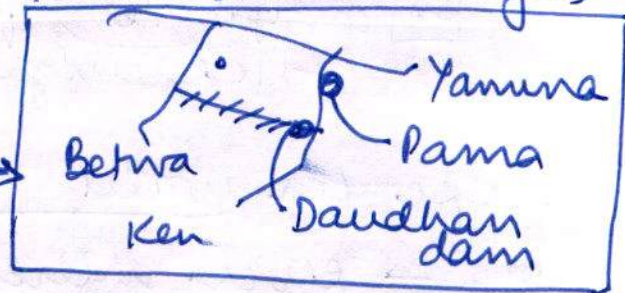
3. Poor farmers can't adopt expensive
tech → can affect regional
divide more

- ④ focus can be on land use efficiency
ex - Vertical farming, Aquaponics etc

— challenges —

- ① Difficulty of River interlinkages

L Panna
submerged
in Ken-Betwa →



- ② One dependency on canal & tubewells due to TOPOGRAPHY constraints

ex - plateau, hard rock
can't put canals

- ③ subsidies, freebies removal for irrigation use efficiency require political will

Schemes like Per drop use drop, Swamitva etc can be parallelly promoted to improve both & reach India's irrigation ^{land} potential of 140% from current 40%.

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

15

India's Green hydrogen mission aims to make India a leader in ^{this} energy derived from electrolysis of water by Renewable energy.

Role of Green hydrogen in energy security :-

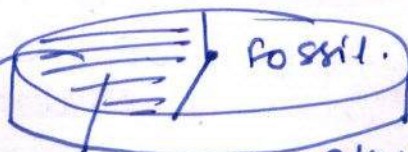
① Reap huge potential

ex - 7500 km coastline, several rivers

② Shift from coal / fossil based Energy basket

ex: Green H₂

can expand this Renewable - solar, wind



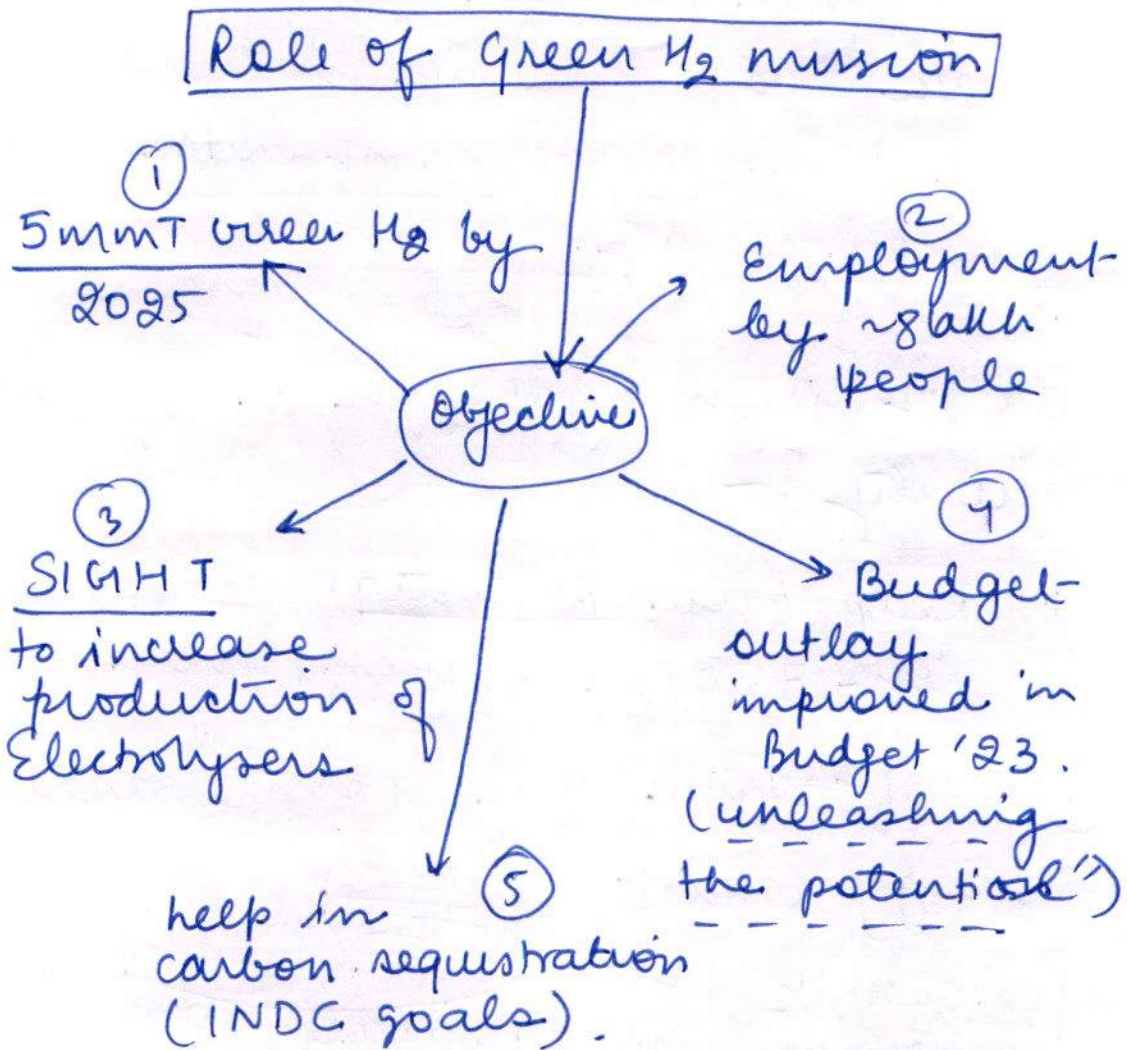
③ Reduce oil imports & prevent foreign outflow

④ Energy security by reducing dependence on 'Limited' conventional fuel

ex - Coal shortage in 2022

⑤ Ease of transportation of Green H_2 via pipelines etc

EX - HVT setup can be used.



① This will reduce dependence on china for imports of Electrolysers

② Promote greater investment in R&D (current < 1%).

③ skilling of youth for meeting demand based employment in this sector

— Issues —

- ① Nascent stage of tech
- ② Expensive initial adoption
- ③ Requires diffusion of tech from developed countries
- ④ ease of operation still debatable
- ⑤ Storing of Green H₂ is a cited issue
- ⑥ Budget outlay for mission not enough.

This can help achieve Panchamrit targets of 500 GW, RE by 2030
Non fossil energy

13.

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

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

15

उम्मीदवारों को इस कक्ष में नहीं लिखना चाहिए
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Minimum wages for
sustenance

living wage for support

Text MGNREGS led unfavourably

Text Urban living wage
(Buldhana)

Benefits — support urban poor

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

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

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

15

Budgeting is the process of employing tools, techniques & outlays for revenue & capital expenditures. ^{ex} India - budget under Art 112 (Annual financial statement)

Union Budget affects every sector:-

1. Agriculture → initiatives, department grants etc

Budget '23 → three Anna
→ PM PRANAM (fertiliser)
→ AgriStack & funds
→ Animal husbandry (15Kw) fund.

2. Manuf → TEE, DE&H bill
infra → infra boost

3. Environment → MISHTI for mangrove

4. Education - Higher Edu., HERC etc.

Not substantial scrutiny :-

I. Budget process

① $\hookrightarrow$ segregated : departmentwise

ex - only some follow outcome based budgeting

② $\hookrightarrow$ Process not sustained

ex - despite Green budgeting since 2014 $\rightarrow$ funds for women specific policies diverted

ex - Nibhaya fund in MH diverted for MP's cars.

③ Poor ~~cor~~ action on committee recommendation

ex - Lahri comm : gender budget cells not followed.

II. Budget policy

④ Uncertainty leading to tax collection $\downarrow$ (Ricardian Equivalency)

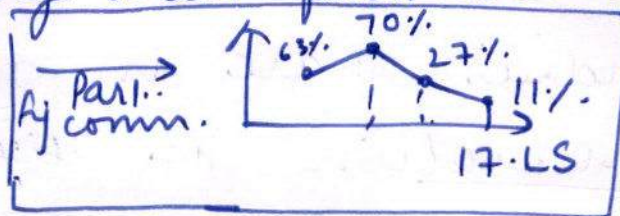
⑤ Impacts investors confidence

ex - Budget on crypto $\rightarrow$

unrecognised yet-taxed.

⑥ Public involvement abysmal.

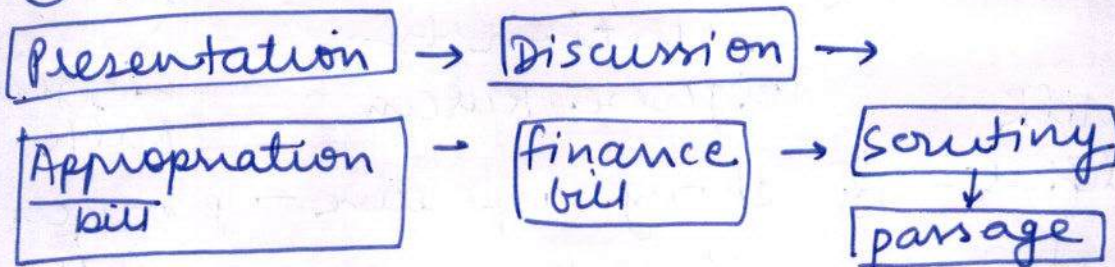
⑦ less sharing with parliamentary committees



⑧ Shortcuts taken ex Adhar as money bill.

Substantial scrutiny :-

① Proper process followed :-



② Opposition & check mechanism in place ex Judiciary.

③ Pressure groups consultation
ex - FICCI, ASSOCHAM.

④ certain provision also put for public input
ex - NEP bill

Hence Budget process does need some democratisation for tax payer's visibility, needs & aspirations.

15.

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

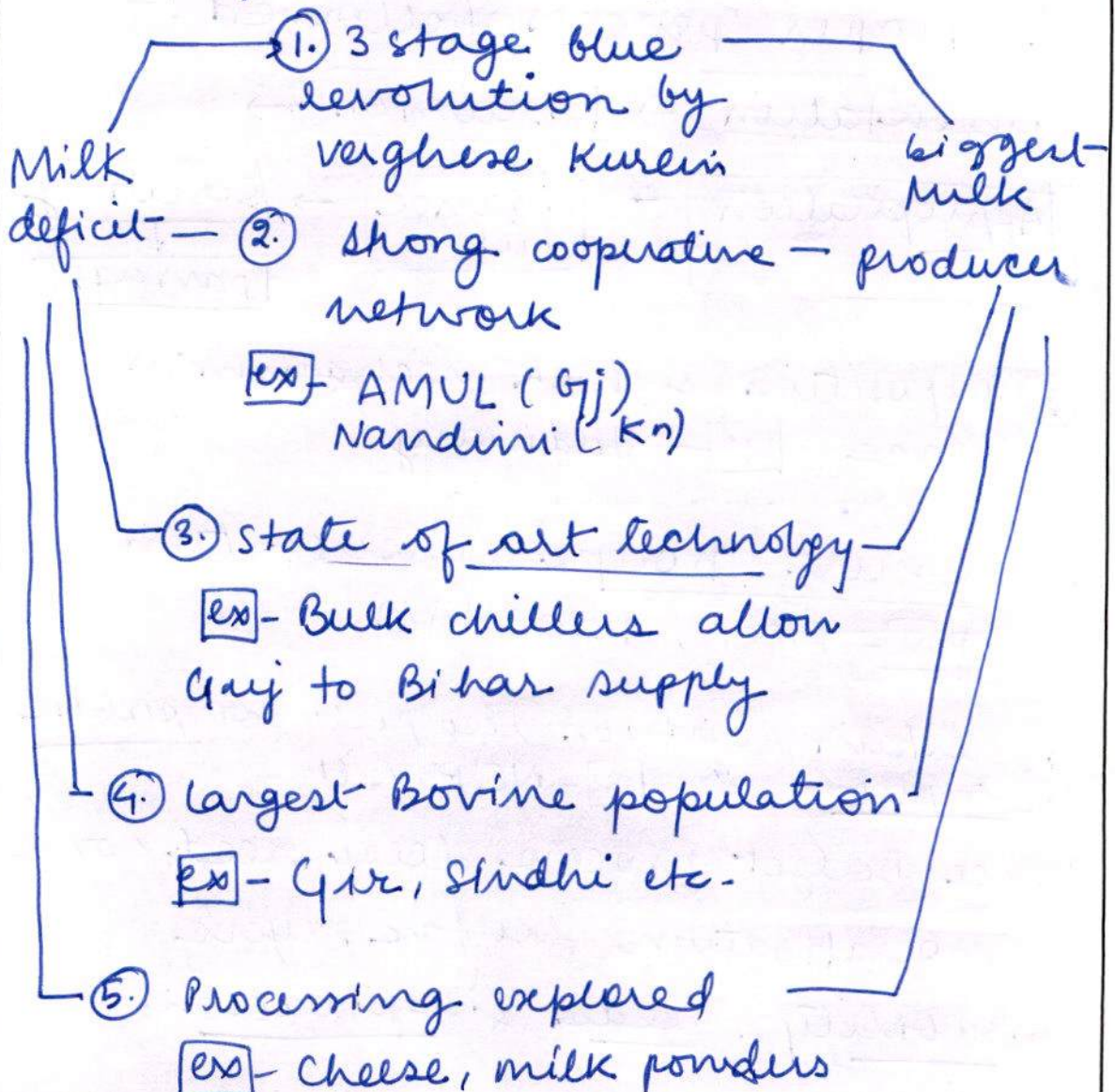
India has been able to transform itself from a milk deficit country to the world's biggest milk producer, but the productivity of dairy animals in the country remains a concern. Discuss. (Answer in 250 words)

15

India's share in global milk production is 20% (1/5)th.

after the success the Blue revolution in 1970s.

Transformation by :-



⑥ Demand led transformation
to ensure milk supply to the
large market.

⑦ Govt. conducive policies

ex - Sutra PIC, AIHD fund

However,

concern on productivity of ^{dairy} animals

① Poor in comparison to outside
breeds to ex - Jersey, Murrah

② says Indian dairy uncompetitive
in foreign market
ex - Australia, Newzealand.
much greater productivity

③ Poor fodder availability as root
cause
ex - Most farmer use farm
waste as fodder

④ land-animal mismatch.
India — largest cattle —
— only ~ 2% land —
poor grazing space

⑤ Diseases further reducing productivity

ex - Foot & Mouth D, Brucellosis
lumpy skin

⑥ Poor R&D on affordability of artificial insemination to improve dairy animal's productivity

Way
Forward

→ 1. Veterinary clinics for dairy cattle

→ 2. Improving fodder quality

ex - GM oilseed recently

→ 3. Better tech sharing globally

ex - REEP could have helped increase competitiveness

This will ensure food security & remuneration of farmers as also cited in Niti Aayog India @100 policy document.

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 ^{1.1}responsible for crop failures, the agricultural sector itself is ^{1.2}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

India ranks 4th in global climate vulnerability index for agriculture sector due to large scale dependence (~19% GVA).

Climate change causing crop failures

1. Rise of extreme weather events destroying crops

(ex) → Tropical cyclone rise in Arabian sea destroyed crops

(ex) - Heat waves impacting crop grains maturity

2. Monsoon variability rise

> 70% of India's agriculture irrigation is monsoon dependend



☑ - Rainfed farming

3. Southern oscillation disturbance due to climate change

[ex] - ENSO & LANINA variability affected wheat yields

4. High heat stress affects soil quality

↳ Potential evaporation losses ~40% rise (IPCC 6 AR)

5. Rising saline 'ingression' reduce coastal paddy yield

6. Horticulture affected by Global warming & Plantation

[ex] - cotton, Apples productivity reduced

Agriculture inducing climate change

one of
1. Agriculture, largest source of Green House Gas

[ex] - Ruminants cattles produce GHG → methane

2. Incoherent clearing practices

increased pollution 4949

[ex] slash & Burn agriculture

[ex] Punjab stubble burning

causing climate change.

3. Agro forestry losses releases
sequestered carbon in atmosphere

National Agriculture DM plan

① Improve Agro Ecological farming

[ex] Not growing sugarcane in
Sharnad (Mh) etc

② Better research for crop resilience

[ex] ICAR → heat resistant wheat
launched.

③ Better infrastructure to prevent
crop losses

[ex] Green houses / shelter
belts.

④ farmer's awareness by CSC,
Kisan Kendras.

⑤ Holistic coverage of disaster
preparedness [ex] coasts, hills,
deserts.

This will ensure • resilience of Agri
against CC (SDG 13)

17.

दिल्ली सहित भारत के कुछ क्षेत्र हिमालय में आने वाले भूकंपों के प्रभाव के प्रति अत्यधिक संवेदनशील हैं। विवेचना कीजिए। भारत में भूकंप से होने वाली हानि को कम करने के लिए कौन-से संस्थागत उपाय किए गए हैं? क्या आपको लगता है कि कुछ उल्लेखनीय कमियां अभी भी मौजूद हैं? (उत्तर 250 शब्दों में दीजिए)

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

15

close to ~58% of country is vulnerable to Earthquakes [GKS survey]

(vulnerability to EQ impacts of Himalayas :-

1. Due to seismic vulnerability

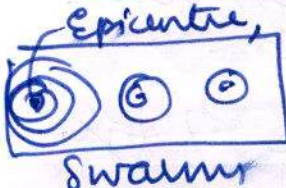


2. Plate movements

↳ Himalayas situated on active faults causing Earthquake

[ex] Main crust thrust Himalayan frontal fault (Himalayas etc)

3. Swarms creation : Earthquake with epicentre in Himalayas tend to spread to nearby region



4. Vulnerability due to density

→ Delhi, Northern plains, ~~largest~~ densest regions thus increase impact

→ poor building/constructions in the region also impact

[ex] - Tapovan (Vaitika thrust)

↳ Delhi towers 'pan cake' collapse

Institutional measures to mitigate

→ ① NDMA - shares guidelines & monitors adherence

[ex] - seismicity zone mapping

→ ② ↳ preventing Earthquake induced disaster losses by rapid action

[ex] - landslide task force in Uttarakhand.

→ ③ Panchayats & decentralised disaster management

[ex] - DM fund set up.

→ ④ ISRO & other ~~organi~~ insti: provide support

[ex] - Hazard zonation mapping by satellite data

+ ⑤ Committee recommendation for institutional action

ex - M. Chopra committee
~~la kes~~

+ ⑥ NDRF, 'Apada nayaks' etc.
set up for support.

Gaps exist :-

> Non adherence to guidelines
unpenalised

ex National Building codes not followed.

> fund allocation for disaster
management unused (CAG report)

> Heavy encroachments despite
early warning ex Chamoli disaster

> local preparedness as 1st line
of defence poor.

A strong coordinated policy action
with decentralised action to meet
SENDAI guidelines is needed

18.

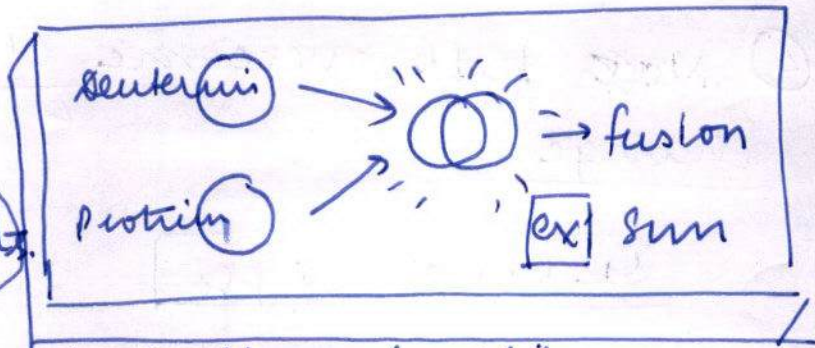
हाल ही में, वैज्ञानिकों ने परमाणु संलयन अभिक्रिया में निवल ऊर्जा लाभ की घोषणा की है, जिसे स्वच्छ ऊर्जा के भविष्य के लिए एक बड़ी वैज्ञानिक सफलता माना गया है। परमाणु संलयन आधारित विद्युत उत्पादन के क्या लाभ हैं? व्यावसायिक स्तर पर विद्युत उत्पन्न करने के लिए इसके उपयोग की क्या सीमाएं हैं? (उत्तर 250 शब्दों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

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

15

Nuclear fusion is the coalition of two lighter nuclei (deuterium etc) to create a larger nuclei & massive energy.

Recent advancements



1. Scientists at Indian facility in Gujarat announced net gain
2. UK → European TORS achieved net gain ~0.5%
3. China's artificial sun reached > sun temperature level
4. TOKMAK ITER also registered sustained net gain via fusion.

These are major breakthroughs.

Advantages :-

1. Clean energy : → doesn't create waste

↳ doesn't pollute by GHG emission

② Energy security - cited as unlimited energy due to H_2 in air & sea water as sources.

③ Reduce fossil dependence & ensure energy access to all
(SDG-6)

④ ~~Not~~ Help overcome climate change

Disadvantages

1. Advancements only in initial stages
↳ massification needs time
2. Dual use tech ex Hydrogen bombs
3. Large infra & R&D support needed.
4. can lead to energy inequality between rich-poor nations

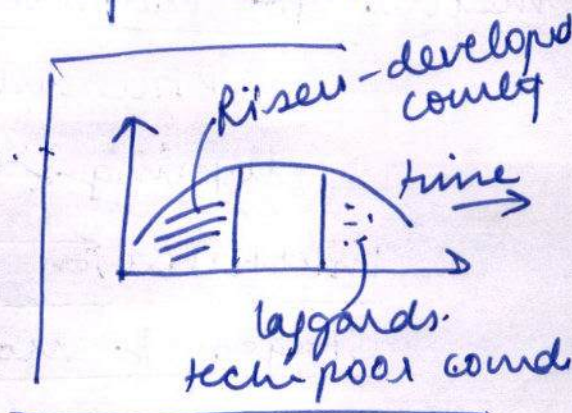
way forward :-

1. Gradual shifts to cleaner, early available source

ex- Biomass

2. Increase R&D support for technology affordability for all

3. Tech. diffusion.
from  → 



4. Ethical usage of dual use energy with set guidelines

Hence, fusion although not a panacea can help improve clean energy availability for future

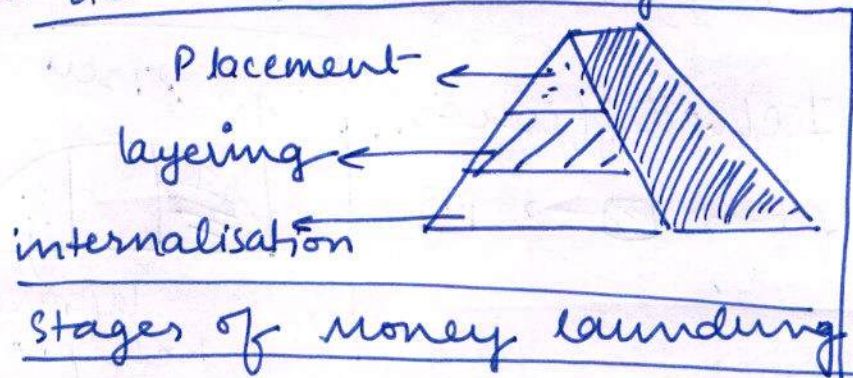
19.

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

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

Vienna convention defines money laundering as a process of converting black money from illegitimate means to mainstream.



Efficacy of PMLA :-

1. Better identification as proper DEFINATION in place
2. Shows deterrence effect due to penalising authorities
3. Tackling terrorist funding due to money laundering
4. Digital solutions provided

under amendment to tackle ML.

5. Institutional support by FIU, ED & other agencies

6. Prevent money laundering in garb of NGO etc

Ex integration with FERA.

Limitations in tackling

① Paper reforms

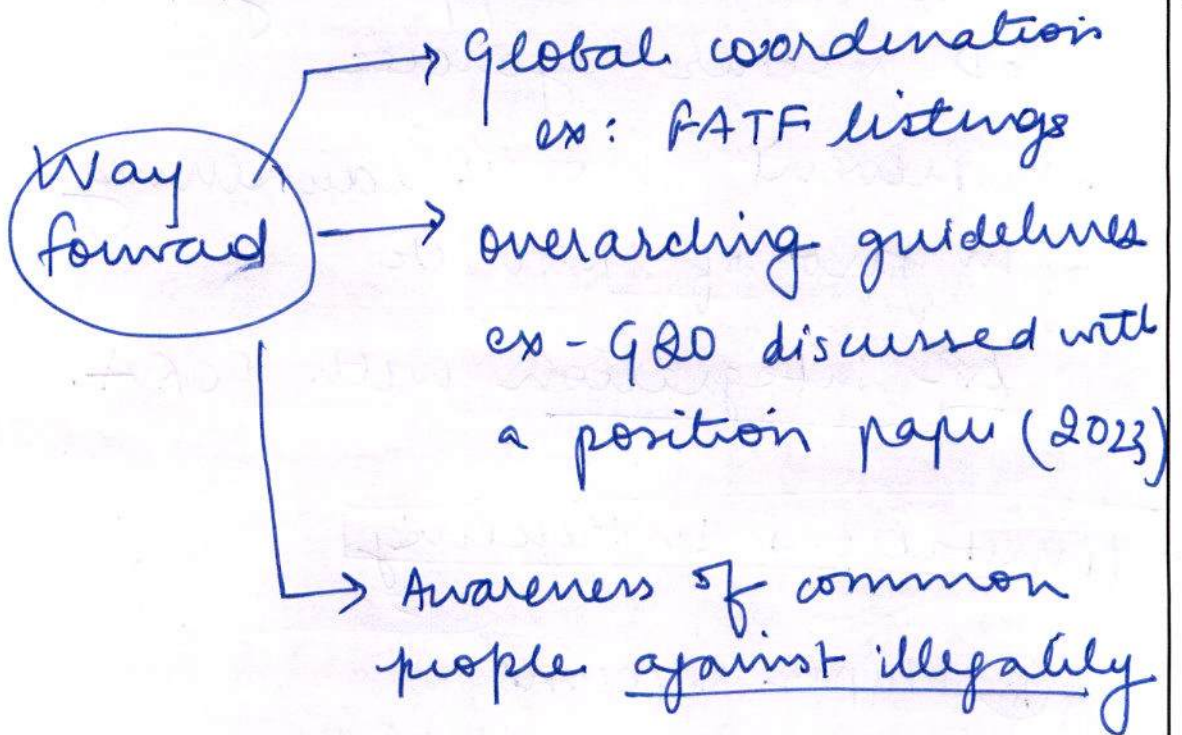
② No teeth to tail in extraditing out of geography offenders

③ Back channel tracking difficult
Ex HAWALA.

④ Technology adoption by money launderers creating issue
Ex - using P2P for coordination

⑤ Real estate role in integration & placement of Black

money untackled.



money laundering & archiving
blackhole syndrome needs to
be corrected with joining hands
(80617).

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

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

15

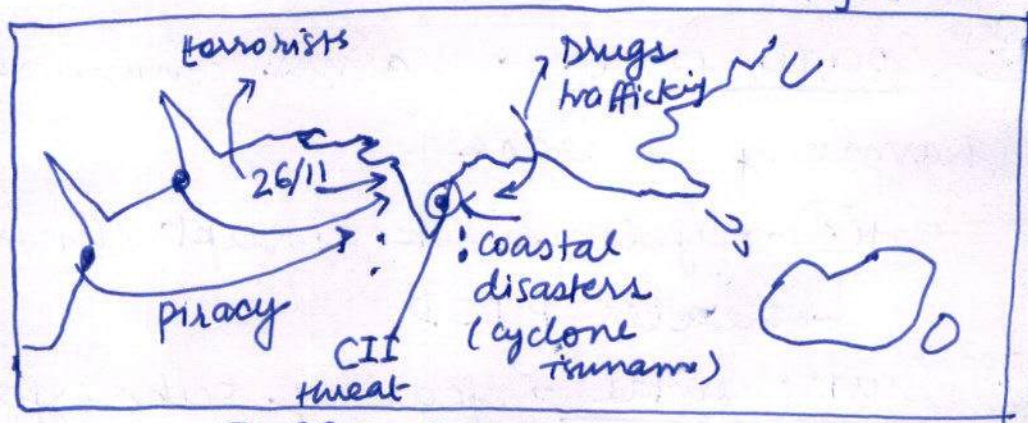
उम्मीदवारों को इस दृष्टि में नहीं लिखना चाहिए
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66 Indian Ocean is the region where India asserts, China eyes & USA intervenes"

~ MEA S. Jaishankar

Security threats in IOR

fig: IOR



THREATS :-

- ① Piracy from Africa, Mid East, South China Sea.
- ② Terrorist influx from > 7500 Km maritime borders ex → 26/11 attackers
- ③ Disaster threats ex →
- ④ Cyber threats ex → Dhaka attack on Kun dankulam (CII)

Direct bearing on border interests :-

- ① Security interest - compromised due to instability & attacks
[ex] - Terror disrupting functioning
- ② Economic interest - losses $\sim 1.8\%$ of GDP due to piracy, illegal trafficking via marine borders since 2001 (IB report)
- ③ Social losses $\rightarrow$ harms communal harmony & peace
[ex] - cyclones etc disrupt functioning
L creates PTSD
- ④ Environmental $\rightarrow$ fear of submergence of coastal cities by 2100 [IPCC 6AR]
- ⑤ Geopolitical $\rightarrow$ India's presence on sea lines of commⁿ & legitimacy as net security provider impacted

Robust strategy

- ① Institutional $\rightarrow$ 1. Indian Navy (for EEZ, 720nm)

→ inst-

→ coast guards
→ maritime police (states

legal
policy

→ theatre commands
for coordination

→ Nicobar base set up.

→ Diamond necklace to
counter China's string of pearls

→ Anti Piracy laws

→ SHAPE initiative

Others

→ military exercises
[ex] - Sagar Mahari

→ Tech. reconnaissance

[ex] NIRA KSHAYEE Unmanned
underwater vehicle.

Hence, the blue sea security is
of crucial imp. in India's
SAGAR doctrine

SPACE FOR ROUGH WORK

AL