



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 उपरान्त 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. : 0971237

अभ्यर्थी का नाम/Name of Student : Surabhi Srivastava

माध्यम: हिंदी/अंग्रेजी
Medium: Hindi/English

English

तारीख
Date

27/8/2023

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

केंद्र

Centre *Kanpur Vidya Mandir
Mahila Mahavidyalaya,
Kanpur*

Y. Singh
27/08/2023

निरीक्षक के हस्ताक्षर
Invigilator's Signature

	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.

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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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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 हफ्ते में नही लिखना चाहिए
Candidates must not write on this margin

Food security is the state of being able to fulfill one's food requirement. global hunger index placing India at 107th alarms and brings crisis to context.

Dimensions of food security	India's status
1). Accessibility of food. - ensures accessible to women - marginalised sections	- Schemes like PM <u>Grisib Kalyan Anna Yojana</u> - <u>PDS shops</u>
2) Affordability of food - cheap and available to all	- National food security act, 2013- - covers <u>87% of population</u>

3) Security in
terms of
quantity

- to overcome
crisis
situation

- Buffer stock -
already reaching
51MMT

4) Utilisation

- by the people
to overcome
hidden
hunger

- food fortification
mission
- millet production

yet issues arises as -

1) Accessibility → exclusion of
beneficiaries
eg: Shahband
women - prevalence
of anaemia [58%]

2) Utilisation → Hidden hunger -
child wasting [32%] etc.

To overcome → 1) nutritional security
by focussing on millets
→ 2) Innovative approaches as
My school My farm

The path to success for a nation starts with
its ability to feed its population

- MS Swaminathan

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

Modern technologies as blockchain and chatGPT can transform agriculture to a smart agriculture.

Its potential to transform ⇒

Blockchain -

1). land record management of the farmers

2). soil record management for better precision agriculture.

3). warehousing sectors

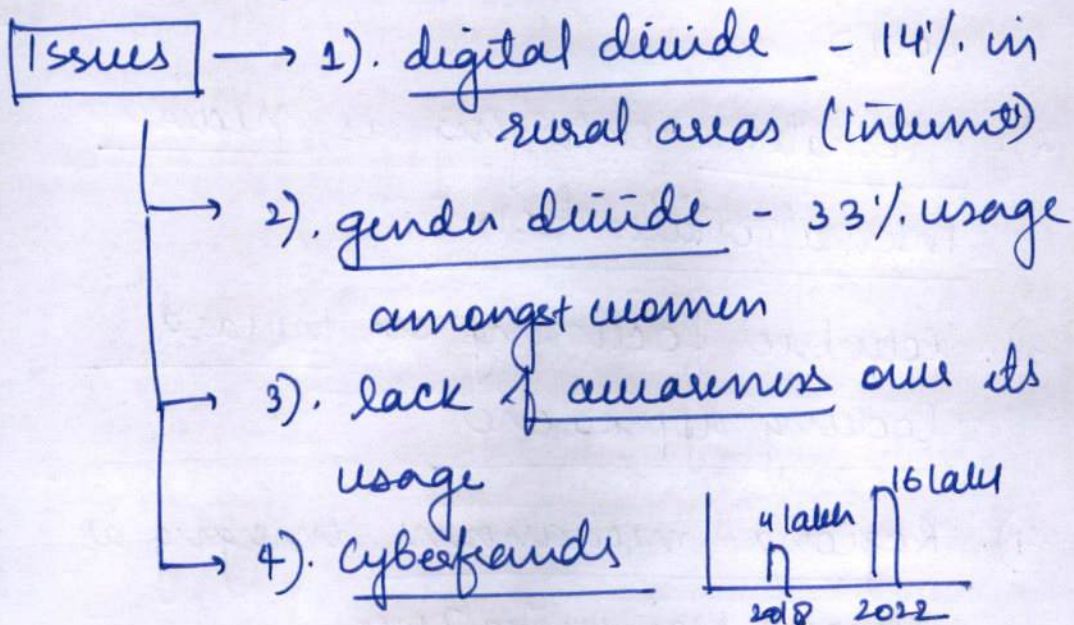
eg: Uthul startup using it to provide e-receipt used to get loans.

4). Used to store the information on crop production

5) supply chain management can become easier.

Chart 4PT -

- 1). Policy making with respect to the sector
- 2) data provide - ability for farmers to get informed
- 3) skilling our usage of technologies as e-choupal
- 4). Used to understand the efficient usage of input tools
- 5) can help identify best price
eg: Integrated with e-NAM.



In this respect, initiatives as AgriStack and IDEA paper provide a futuristic guidelines

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 हशिफ में नहीं लिखना चाहिए
Candidates are not to write on this margin

Dollarisation was the phenomena of prevalence of dollar in global economy increasing USA's hegemony in International financial system

De-dollarisation is the rollback of this dominance of dollar

factors causing de-dollarization →

- 1). de-globalisation phenomena post COVID
- 2). alternatives emerging as Yuan internationalisation
- 3). Countries focussing on Inward looking approaches
- 4). Regional mechanisms emerging as Chang mai initiative
- 5). Trust deficit over USA policy

- 6) Trefferin dilemma faced by USA -
its own policy
eg: friendshoring.

Prospects of dollar losing dominance

Yes - 1) emergence of other alternatives
as chinese

2). new forms of transactions as
cryptocurrency

3). Rollback of USA - Kindleberger
trap

No - 1) USA controls more than 85%
of International transaction

2) SDR of IMF - maximum weightage
to USA

3). depth of its financial market

4). part of forex of major economies

Thus dollar losing relevance anytime
soon is a distant possibility yet
new initiatives as BRICS currency etc
are emerging in this chaos.

4.

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

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

10

India follows its policy of food subsidy as a part of its obligation of being a welfare state.

India faced pressure from developed countries to alter food subsidy

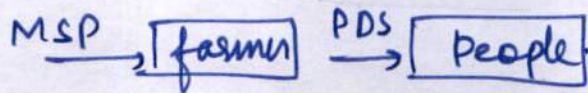
- 1) via the platform of WTO by placing its subsidy in Amber box
- 2) as a part of multilateral negotiation as in RCEP
- 3) as a part of bilateral negotiations as by USA, Australia

India sustained its policy →

- 1) with more than 15% multidimensionally poor (NITI Aayog) - necessity.
- 2) reduces the dependence on foreign nations to feed population.

3). Welfare of the people is promoted
our economy

4). The two side subsidy has helped
pool



Issues -

- 1). Market distortions as help by
WTO
- 2). Huge fiscal cost on the government
eg: 2.4 lakh crore
- 3). Food wastage as 61,000 tonnes
by FCI in 2017.
- 4). restricts India's entry in any
regional engagements

Way ahead

- 1). rationalisation of subsidy
- 2). Usage of food coupons rather
than procurement
- 3). bringing in private sector for
better management.

The policy of food subsidy in India
follows principle of Gandhi's Tolman

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

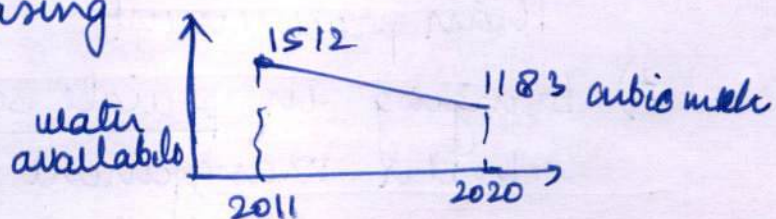
NITI Aayog's composite water management index suggests 22 cities facing acute water scarcity.

To address water needs →

- 1) Jal Jeevan Mission - Safe water by 2024 to all households
- 2) Jal Shakti Abhyas - to ensure mechanism of rainwater harvesting
- 3) Jal Shakti ministry for curated policy approach.
- 4) Initiatives like Ken-Betwa linkage to address water needs

But issues remain of -
water availability -

- 1) Per capita water availability decreasing



2). clustered water scarcity as in Chennai, Hyderabad

3). Agricultural availability owing to issues as virtual water export

4). concrete spaces - no recharge of aquifers and receding water levels.

Water quality -

1). Increasing arsenic, fluoride in water

2). lack of circular economy and wastewater management - only 34%.

To overcome -

1). Following models as - Karnataka development authority - reduce non revenue water 50% $\rightarrow$ 8%.

2). startups as fluxgen using smart solutions as IoT to conserve

3). Using rainwater harvesting models as Birkha bawari

4). following LIFE approach

further Belligardo principles can help in water conservation

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)

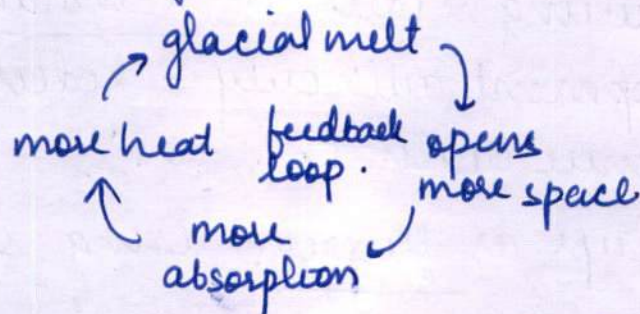
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उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए
Candidates must not write on this margin

The IPCC report suggested the receding of Arctic glaciation is 3 times that of other places.

drivers of Arctic retreat

- 1) Greenhouse gas emission leading to global warming $\rightarrow >1.5^\circ\text{C}$ temperature
- 2) fracturing of glaciers by the ice breakers for sea passage
- 3) Albedo effect $\rightarrow$ more melt leading to less reflection.



- 4) role of the Atlantic meridional oscillation

The impact of this retreat

- 1) Positive $\rightarrow$ open passage route

reducing the roundabout navigation
2) more ports for Russia - revive it as
major power.

3) space for agriculture and farming.
negative -

- 1) geopolitical contestation - China,
US, Russia
- 2) not a global common so no
consensus over it
- 3) sea level rise and further
create issues of climate refugees
- 4) Biodiversity of be affected as
Snow Leopards, Siberian wolf
- 5) Permafrost thawing - more
avalanches
- 6) Break open ancient bacteria etc

In this respect the focus needs to
a dedicated Arctic policy to curb the
Impact of climate change on it.

7.

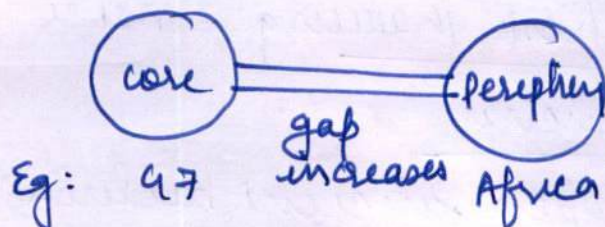
अंतरिक्ष पर्यटन, जिसे सीधे तौर पर एक साइंस फिक्शन फिल्म के रूप में देखा जाता था, अब बिना किसी बाधा के वास्तविकता बन रहा है। अंतरिक्ष पर्यटन से संबंधित चुनौतियां क्या हैं? इन चुनौतियों से निपटने के लिए क्या उपाय किए जा सकते हैं? (उत्तर 150 शब्दों में दीजिए)

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

Elon Musk SpaceX has transitioned the dream to space as a reality.

Challenges in this endeavour

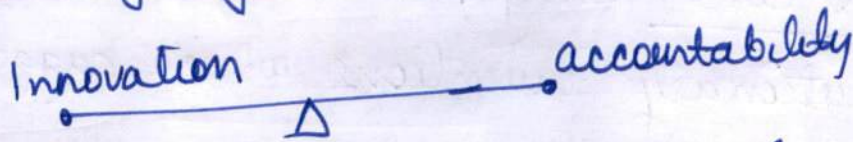
- 1) Highly capital intensive sector reduces the scope for government
- 2) Monopolisation by few firms
Eg: USA - SpaceX etc.
- 3) Bridge global inequality with access to space only by elites



- 4) Safety issues of the space tourists
- 5) Unregulated sector leading to sub standard facility
- 6) May add to issue of space debris.

Measures to address

- 1) regulation of the sector to balance callingsridge problem



- 2) global policy on space tourism
- 3) helping startups in sector to create more equality
Eg: 41 startup in space sector in India
- 4) safety protocols need to be strengthened in line with NASA regulations.
- 5) dividends can be used for global equality

further considering the scenario of space as the global common, there is a need to ensure its safe and equitable use.

8.

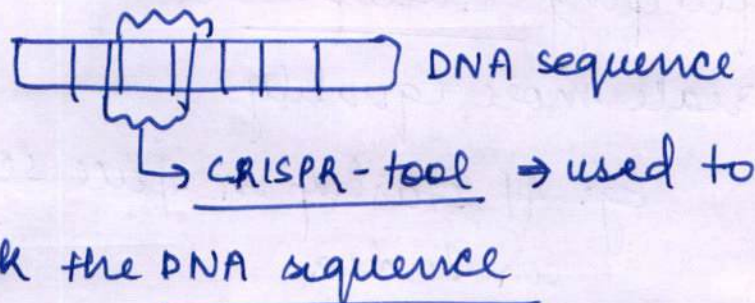
वैश्विक स्वास्थ्य विशेषज्ञ व्यापक रूप से मानते हैं कि CAR-T सेल थेरेपी का विकास कैंसर के उपचार में एक बड़ी सफलता हो सकता है। CAR-T सेल थेरेपी, CRISPR-Cas9 तकनीक में व्याप्त कमियों को कैसे दूर कर सकती है? (उत्तर 150 शब्दों में दीजिए)

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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CRISPR-Cas9 emerged as one of the revolutionary inventions which bagged the Nobel prize.



This was used in the treatment of cancer by breaking up the faulty genes.

An updation on the same emerged in the form of CAR-T therapy.

The process involves using the T-cells of the body and amplifying it by CAR-T mechanism and using it to fight the cancer cells.

Overcoming limitations -

- 1) No external tool needed as CRISPR-Cas9
- 2) reduces the risk of rejection by the body
- 3). more safe and less intrusive procedure
- 4) less chances of failures based on the data available.

Yet problems -

- 1) Very expensive procedure
- 2) availability to the poor is yet a cause of concern.
- 3) not suitable for all cancer type
- 4). more research needed.

considering its utility, India has also come up with its usage with a new center inauguration to make process accessible to the needy.

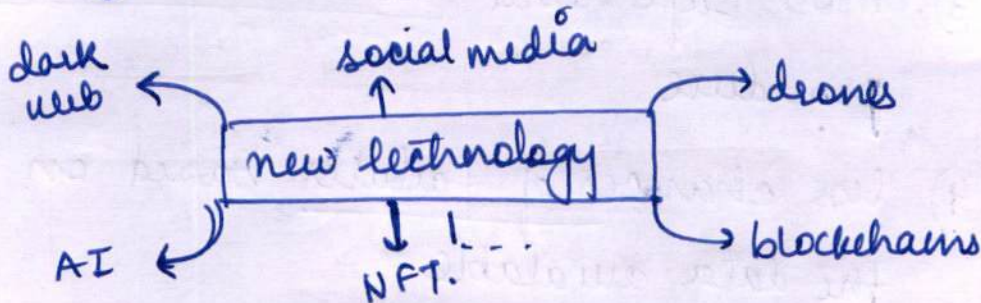
9.

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

Emerging and disruptive technology is being used by violent extremist organizations as highlighted in UN Security deliberations



Its impact -

- 1) lack of jurisdiction leads to lack of concerted efforts
- 2). leads to issues as deep fakes, money laundering
Eg: ISIS employing same
- 3) radicalisation leading to issues as lone wolf attacks
Eg: Christchurch attack
- 4). leading to symphony of organised crime and terrorism

This demands global efforts -

- 1) can ensure the global power against such covert actions
- 2). Usage of the expertise of advanced nations
Eg: USA
- 3). Curb safe havens for their operations
- 4) Bring in accountability of the rogue states
eg: Pakistan
- 5). successful global operations in this regard
Eg: operation Trojanfield.
- 6). cyberexperts can be deployed effectively
- 7) global problem need global solutions.

Efforts → 1) Initiatives as Quad
→ 2) Platform of UN can be used.
→ 3) deployment of technology as AI can be used.

we should work on principle of Technology
begels Technology and ensure its
usage to deal with threat.

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)

10

India and China had been at loggerheads in the border regions with Chinese incursions

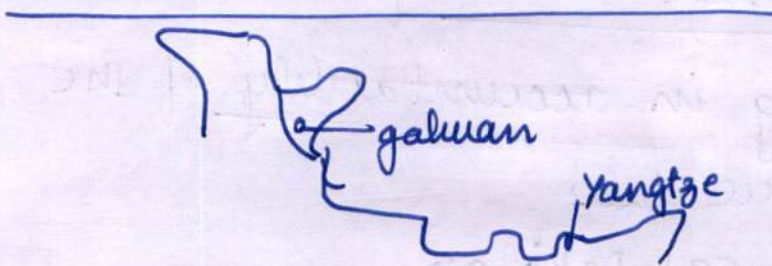


Fig: point of incursion

Ramping up infrastructure in region -

- China - 1) expansion of the BRI project
2) creation of dual use villages -

Xiokang

- India - 1) creation of border volunteer force

- 2) Infrastructure development as Daulat Beg Oldi etc.

In this reference, role of ITBP -

- 1) specialised force for the region of
chinese border
- 2) expertise in the terrain of the region
- 3) largely constitute the Tibetans - more
expert {
→ language understanding
→ geographical understanding
- 4) agile force to restrict the incursions
- 5) help in the development of border
infrastructure
- 6) augments the capacity of the army.

Issue → 1) tough terrain of the region
2) lack of connectivity on the Indian
side.

3). new emerging threats as deployment
of dual use villages.

In this reference focus needs to be to
augment force and for a better
border management shekatkar and
Madhukar Gupta recommendations 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 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

India has the largest area under cultivation
165 million hectares requiring us to
 contemplate on land productivity

need for land productivity -

- 1) land equivalence ratio is very less in India compared to China, Brazil.
- 2) subsistence farming - 89% are small and marginal farmers
- 3) low crop productivity despite being largest producers
- 4) Huge population - 1.4 Billion requires land productivity
- 5) The amount of fallow land, cultural wasteland rising
- 6) Can be used to curb food inflation
 Eg: wheat - 15%.

need of shift to Irrigation water productivity

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

- 1) new mechanisms as vertical farming reduces need of land
- 2) cultivable land can anyway be increased
- 3) depleting water level is a cause of concern
Eg: Punjab - 169% usage
- 4) virtual water export
India - 4 times it imports
China - 0.14 times
- 5) Precision agriculture can ensure better productivity
- 6) Examples of countries like Israel following model
- 7) water irrigated fields - just 52%
need to augment it-

The challenges in shift →

- 1) Irrigated land is only 52% leaving 48% dependency on monsoon

- 2) new techniques as aquaponics ,
hydroponics still not integrated
- 3) ~~low~~ Political populism - free power
reduce incentive for irrigation
efficiency
- 4) Costly affair with respect to switching
sprinklers, precision agriculture
- 5) Lack of awareness amongst farmers.

To overcome same -

a) Balance land productivity and
irrigation water productivity

Land



- land reforms
- cooperative farming
- mechanisation

Irrigation water



- Precision agriculture
- Center of excellence
set up by Israel
- sprinklers
- fertigation

Further usage of technology can help
balance and follow principle -

[Jai Kisan, Jai Anusandhan]

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

15

Green hydrogen is the novel concept to transition energy by working of principle of using renewable energy as the source.

Unlocking energy security

1) change the energy matrix



→ more renewable based.

2) help achieve the net zero goal by 2070

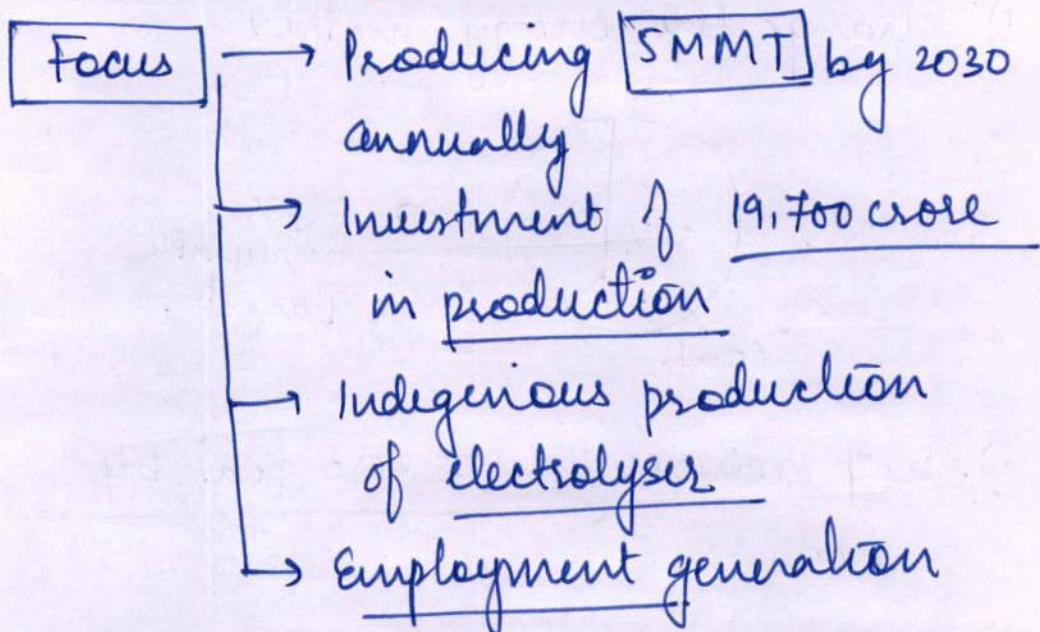
3) reduce dependency on import of energy

Eg: 80% import of crude petroleum.

4) Can be used to fuel and provide energy to distant areas
eg: Ladakh

- 5) decarbonise the transport sector by fuel cell.
- 6). Can also be used in power sector, fertiliser industry
- 7). Prevent us from weaponisation of supply chain leading to inflation.

In this respect Budget 2023 unveiled the National Hydrogen Mission -



Its utility in unlocking potential -

- 1) overcome the issue of import dependency on electrolyser.

- 2). 70% dependency on grey hydrogen can be transitioned
- 3) Investment in sector can ensure industries switch to cleaner fuels
- 4). spillover to coming of startups for development of fuelcells etc → decarbonise transport.
- 5) annual target can create an accountability mechanism

Still some issues -

- 1) water usage very high - already water deficit.
- 2). High skill manpower requirement
- 3). dependency on electrolyser

Despite issues the mission aims to overcome same. further initiatives as Mission Innovation can help fillup the transition.

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

The Directive principle of state policy focuses on providing minimum wage in the context of which minimum wages act was instrumentalised.

Utility of minimum wage →

- 1) Ensures every individual get a minimum level of income for his work
- 2) reduces exploitation by firms
- 3) reduces the instances of bonded labour
- 4) create a standardised setup for the wages
- 5) avoid the discrimination based on caste, class, gender etc.
- 6) ensures minimum standard of living
- 7) In line with constitutional principles

A new concept in this aftermath of living wage emerged.

Living wage Focuses on providing wage taking into consideration the basic standard of living with dignity.

Benefits -

- 1) focuses on quality of life as propounded in Surul batra case
- 2). Can be used to provide a life of dignity to the individuals
- 3). takes into consideration the social expenditures as health, education as well,
- 4). Overcomes issue of differences in state with respect to minimum wages.
- 5) uplift the women - reduces the gender divide
- 6) more created approach

Constraints -

- 1) difficult to comprehend its utility
- 2) no strict variation with respect to minimum wages
- 3) overhead for corporations to make transition
- 4) statistics and calculation of what constitutes living wage is difficult
- 5) subjective interpretation

Solution →

- 1) definition of what constitutes living wage
- 2) No one fits all approach
- 3) overcome the gender disparity in the minimum wages

The focus needs to be in Amrit Kaal
every segment needs to see the sunshine
and marginalised sections be the first.

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

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

Article 112 provides for the annual financial statement pertaining to the Union Budget.

It affects every sector of the economy -

1) fund disbursement for sectors

Eg: Education - 4% of GDP

Health - 2.5% of GDP.

2) Policy focus on particular sectors

Eg: Hydrogen mission : 19,000 crore

3) focus on capex - 13.7 lakh crore

4) fillip particular areas as Housing sector

5) Identifies the region to invest upon

Eg: Tribal region - PVTG development program.

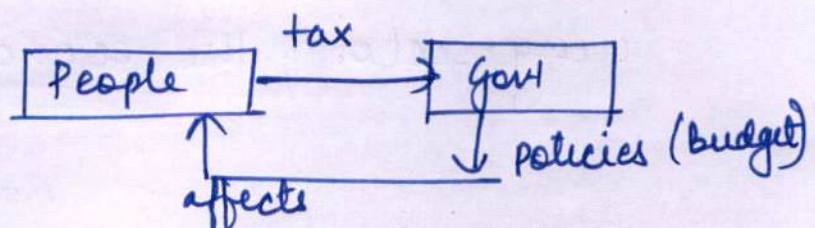
In this context, it affects intrinsically every sector of the economy.

But process and policy not come under public scrutiny →

- 1) no mechanism of public discussion or public opinion
- 2) Issues as guillotine closures
- 3) offbudget borrowings not mentioned.

Issues that it creates →

- 1) People pay tax and thus need to have say in how it is used.
- 2) Puts executive dominance of its hegemony
- 3) lack of financial accountability to the public
- 4) opens scope for wasteful funding
- 5) does not reflect the public opinion
- 6) against the "general will" of the Preamble.



But the process includes -

- 1) Parliamentary process of passage without which no single penny be used
- 2) Representatives represent the will of people
- 3) Gazette published contains information for people to make themselves aware
- 4) Taking opinion of 1.4 Billion people is a herculean task

To ensure effective scrutiny -

- 1) Creation of forum to take public opinion on expenditure
- 2) Increase the number of sittings [67] to increase more deliberation
- 3) reduce quillstone closures.

The golden rule of financial accountability is to maintain the mechanism of checks and feedbacks to avoid the leaky pipe syndrome

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

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

India is the largest producer of milk in the world post its white revolution

Turning from milk deficit to milk surplus nation

1). Transition of change from Gujarat

 → Anand → where white revolution started

2). development of cooperatives

Eg: Nandini, Anand

3). Leadership of people as Dr Verghese Kurien

4). supply chain development owing to assured procurement

Eg: Gujarat milk marketing federation

5) Using of technological interventions

Eg: Pasteurization

6) Integration of milk farmers to the supply chain

7) Incentivisation via development of milk processing units

8) Support of political class

Eg: [Lal Bahadur Shastri] - focus on National dairy development board.

Yet productivity is low →

1) Prevalence of lumpy skin disease in cattle

2) COVID induced lack of capital → poor feeding

3) High price of feed stock creating low nutrition to animal

4) low quality bovine unlike counterparts as Manda buffalo

5) lack of effective veterinary care centers in India.

All this leads to low productivity of cattle → overcome →

1) ~~or~~ focussing on hybrid cattle development.

2). Using technological intervention via assessment

Eg: Indigen project

3). National foot and mouth disease elimination program - disease free cattle

4) Rashtriya Gokul mission for effective cattle development.

5). Cooperatives need to be strengthened as suggested by [SOIL report] → provide better feed stock.

Thus a visionary leadership, technological intervention and institutional approach

can help fulfill [White Revolution 2.0]

Further assured price and assured market can help [Ms Swaminathan]

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

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

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

15

Recently the instances of heat waves have caused major crop failures like the 1.5 lakh tonnes of wheat in U.P in 2022 suggesting the effect of climate change on crop failures.

Linkage between climate change and crop failure

1). Vagaries of Monsoon - leads to damage of crops

Eg: witnessed in 2022 with respect to paddy harvest

2). Lack of rainfall reduces the productivity of crops.

3). Heat wave phenomena leads to wastage of crops

Eg: wheat, sugarcane etc.

Contribution of agriculture sector in the extreme weather events →

1) Conversion of forest land for the agricultural purposes

Eg: Palm oil cultivation in Indonesia

2) Emissions from the production

Eg: Methane, Nitrous oxide

3) Overexploitation of groundwater

Eg: Punjab using 169% of its capacity.

4) Shrinking of Carbon sequestration zones

Eg: Crop cultivation by cutting mangroves.

In this respect, the National Agricultural disaster management plan can help →

[The two way phenomena] →

Reduce impact of climate change on agriculture -

1) Climate smart agriculture practices

2). Use of technology as precision farming,
Soil health card

3). Climate resilient crops

Eg: millets

Reducing impact of agriculture on climate →

1) Adoption of natural farming

Eg: Dholing in Gujarat

2). Using GM technology to reduce agricultural
emission

3). Regenerative agriculture that is climate
friendly

Eg: Arakunomics.

For this 4 pronged model-

Incentivise - Millet production	Institution - MS Swaminathan institute
Innovation - Climate friendly crops	Infrastructure - Cooperative farming.

can help ensure agriculture sector be benchmark
for achieving Net zero goal by 2070.

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

Earthquake is the sudden release of the buildup energy in the earth's crust along the fracture zones. India's 58% area is earthquake prone

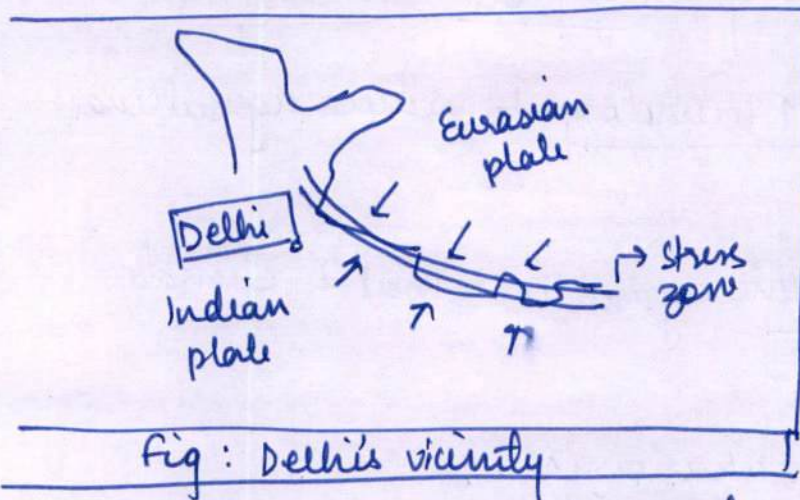


Fig: Delhi's vicinity

along the Eurasian and Indo Australian plate

Vulnerability of Delhi and such regions to earthquakes

1) Stress building

2) Flood plains of Delhi situated on loose sediments makes it more vulnerable

3) High population density further increases stress on the land.

- 4) Faultlines near the Delli range makes it more vulnerable.

Measures taken to mitigate

1) Legislative measures

- National Disaster Management act covering Earthquake

- ↳ focuses on vulnerability mapping
- ↳ Zonation
- ↳ structural and non structural measures

2) Institutional measures

The 3 tier structure

NDMA → SDMA → DDMA

to tackle the threat

3) Strategy level -

National Earthquake risk mitigation strategy

- ↳ focusing on preventive measures by mock drills
- ↳ building codes to ensure disaster resilience

The gaps that exist →

- 1). Building codes yet not implemented
Eg: Delhi - 60% buildings non compliant.
- 2). Usage of technology is still not matured due to digital divide
Eg: 14% rural penetration
- 3). Clustered settlements around the earthquake prone zones
Eg: Nainital
- 4). Unsustainable tourism in the Himalayan region
- 5). Unsustainable industrialisation
Eg: Tapovan project.

Solution → 1) II ARC - principle of subsidiarity
 ↳ 2) usage of technology
 Eg: IndiaQuake
 → 3). strict implementation of building code

In 'Rio+20' 'The future we want' document, the focus is on climate disaster resilient infrastructure that can help reduce vulnerability -

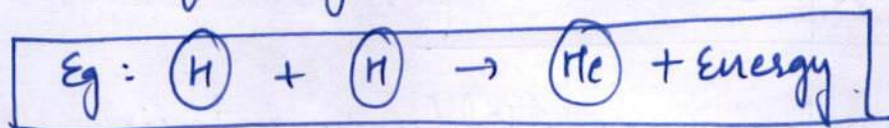
18.

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 phenomena of the fusing of 2 small nuclei together to create another element along with release of energy.



The advantages of nuclear fusion →

- 1). Abundance of energy - more productive than thermal [1 million times]
- 2). clean energy - can help achieve net zero goal by 2070
- 3). Raw material in abundance - considering hydrogen
- 4). NO nuclear waste unlike the nuclear fission

- 5) Land requirement is less unlike the wind power
- 6) No intermittancy issue as witnessed in solar power
- 7). No raw material inequality - unlike oil found in certain places only

Issues in production

- 1) Technology accessibility to certain countries only
Eg: USA, China
- 2). Requires very high temperature - difficult to reach
- 3) High skilled manpower to run the process
- 4) Energy inequality as countries of Africa may still be left behind
- 5). Dependency on fossil fuel based energy.

6) no sustained reaction - need constant fueling

उम्मीदवादी को
इस दृष्टि में
नहीं लिखना
चाहिए
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write on
this margin

To overcome issues -

- 1). Research via initiatives as ITER
- 2). Memorandum to gain consensus over sharing dividends to poor nations
- 3). skilling of manpower → can ensure better jobs
- 4). climate financing can be effectively utilised here

⇒ Considering its utility countries like China as well are also developing

Tokamak. It should be global effort

to share dividends to ensure move to greener future and achieve the

SDG.

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 हार्डिप
नहीं लिखना
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Money laundering is the process of disguising money from illegal source to make it appear from legal source

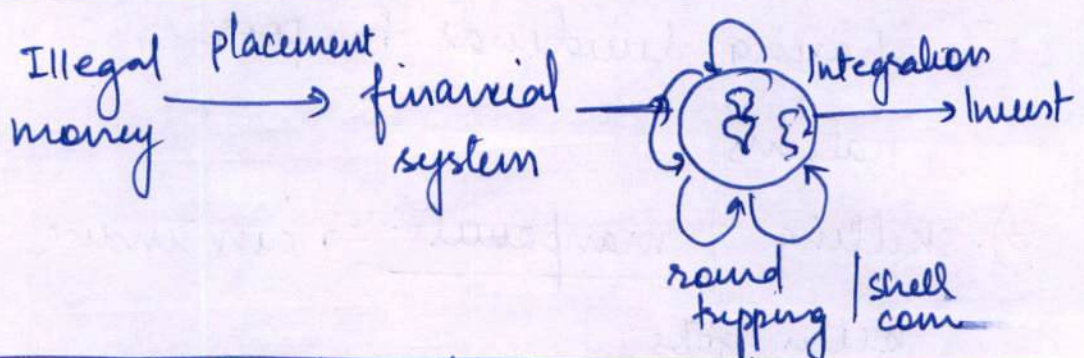


Fig: Process of money laundering

Recently the PMLA was amended to integrate the cryptocurrency tracking due to ~~it~~ emerging as new mechanism of money laundering.

Role of PMLA in tackling →

1. Provides an institutional mechanism to curb the issue

2). Development of specialised wings as
ED etc. to check menace

3) Integration of new and emerging
threats

Eg: Cryptocurrency

4) Crackdown on the shell companies

5) Also curbs the misnomer in electoral
bonds → democratic necessity

Eg: 3 RuPPs identified investing
1000 crore in elections

6). Helps unveil the corruption cases
including money laundering

7). Crack down on organised crime

Issues -

1). Lack of expertise and specialisation

Eg: Lack of cyberexperts

2). Lack of technological intervention

Eg: Usage of AI.

3) new inners as deep fakes used to pass through checks.

4) International level coordination missing unlike -
Eg: Operation Trojanfield.

5) Lack of integration with other departments

6) Political interference in the functioning

To overcome -

1) FATF recommendations with respect to International coordination

2) Involvement of cyber experts to track deep fakes.

3) Coordination in banking system to track transactions.

4) Frequent updation of DTAA's

It is necessary to ensure nation be free from black money fuelling threats and in this respect PMIA needs strengthening

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 हशिप में नहीं लिखना चाहिए
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India has maritime borders of 7500 km making it susceptible to a variety of maritime security threats.



The security threats in I.O.R. →

- 1). Non state actors including piracy across Somalian waters.
- 2). Threat from state actors as Chinese greyzone operations
- 3). Chinese nuclear submarines and its docking
eg: Yuang Wang-5
- 4). Route for organised crimes
eg: drug trafficking along Arabian sea

5). Usage of passage by terrorist groups

Eg: 26/11 attacks

6). Rising sea level leading to issues as refugee crisis

7). weaponisation of supply chains - considering India's 90% trade by volume passes through sea.

8). strings of pearl strategy by China
eg: Gwadar, Hambantota

To overcome these threats

1) Institutional measures as -

Indian Ocean naval symposium

2) Setting up a maritime security strategy integrating coastal guards, navy etc

3). Usage of technology by coordination with countries as France, USA.

4) Using Quad to tackle the maritime security threats

5). Mutual logistics exchange agreement

6). Focussing on maritime exercises as Malabar

7). Working with nations as Africa facing similar threats
Eg: IORA forum

8). Policy of necklace of diamonds to outcome string of pearls.

9) Supply chain resilience by working with Japan, Australia

Further our strategy of SAGAR can help us ensure that maritime borders are strengthened and these issues can be effectively tackled.

SPACE FOR ROUGH WORK

AL