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(To be filled by candidate)

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Roll No. : 5809750.

Registration Number : MT23RCAPA085 Date of Examination : 14th Aug 2022.

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

Test - 3

Code : TC705

RCA Batch 2023

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.

Candidates must read the instructions on this page and the following pages carefully before attempting the paper.

Candidates should attempt the questions strictly in accordance with the instructions specified in the question paper and in the space prescribed under each question in the booklet. Any answer written outside the space allotted may not be given credit.

Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.

.....

SUBJECT/PAPER
GENERAL STUDIES

Invigilator's Sign. : .....

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Student's Queries for the Evaluator (if any write them below)

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Evaluator's response

(For filling by Examiners only)

Evaluator Code :

Q.No	Pg No.	Maximum Marks	Marks	Total
1	1			
2	3			
3	5			
4	7			
5	9			
6	11			
7	13			
8	15			
9	17			
10	19			
11	21			
12	24			
13	27			
14	30			
15	33			
16	36			
17	39			
18	42			
19	45			
20	48			
Grand Total				

Signature

MACRO COMMENTS

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6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

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Q.1 अप्रत्याशित कर (विंडफॉल टैक्स) से आप क्या समझते हैं? क्या आपको लगता है कि अप्रत्याशित करों से संपदा का प्रभावी ढंग से पुनर्वितरण हो सकता है और अधिक आर्थिक समानता को बढ़ावा मिल सकता है?

(150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Windfall tax? Do you think that windfall taxes can effectively redistribute wealth and promote greater economic equality? (Answer in 150 words) 10 Marks

Windfall tax refers to the tax imposed on heavy profits made by certain sectors.

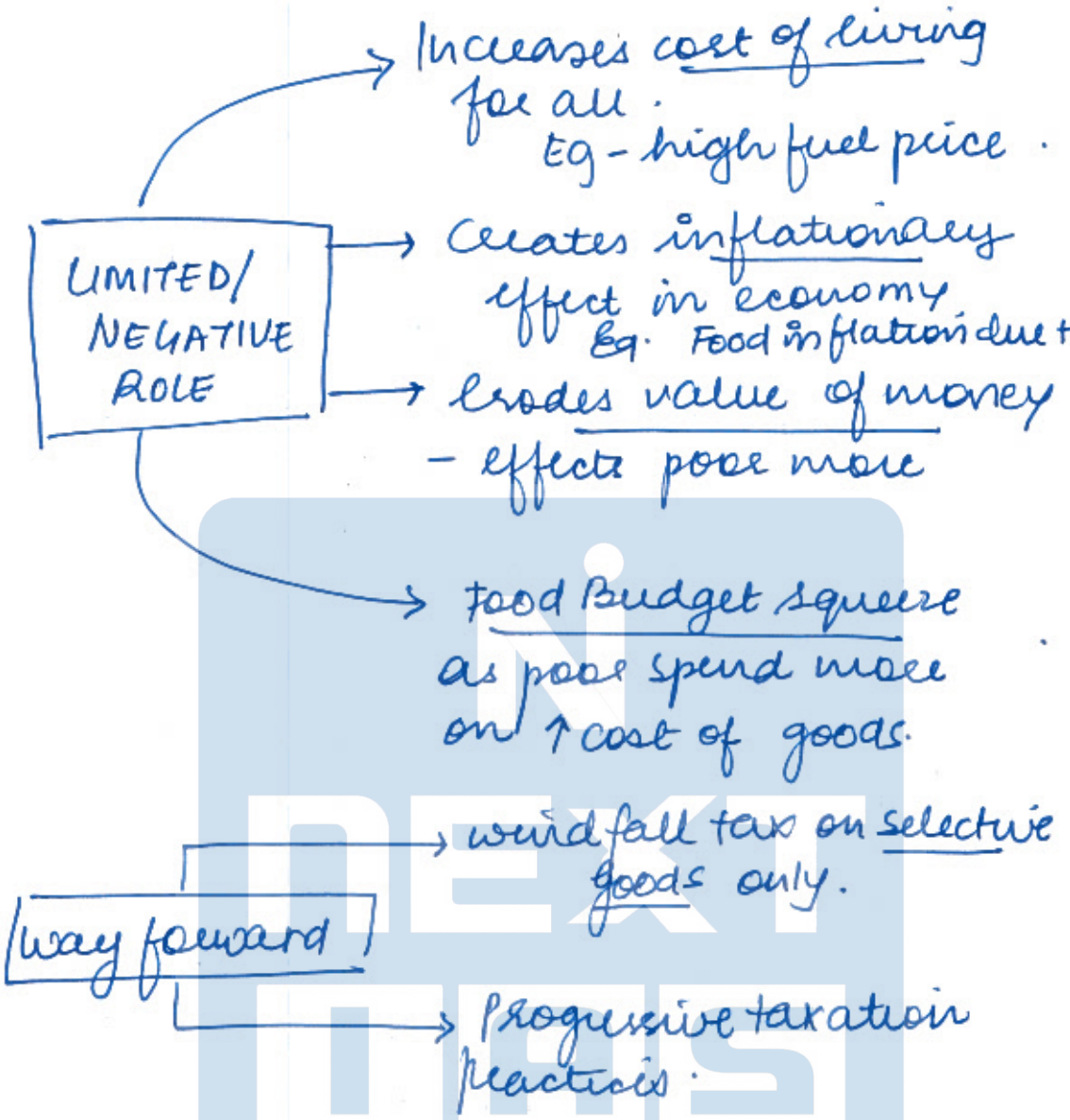
Recently, government of India taxed petrol and diesel due to heavy gains made in light of sanctions and low cost oil from Russia.

Windfall tax's role in wealth distribution and equality

POSITIVE ROLE

- Tax money can be used for building public goods.
- Increase social spending (Eg meet 6% education target - 2025)
- Investment in infrastructure can create multiplier effect on economy.
- Prevent amassing of wealth by few.

Candidates must not write on this margin



Thus, need of the hour is evidence based tax policy decisions to ensure benefit of all in society.

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Q.2 नई मौद्रिक नीति समिति (एमपीसी) व्यवस्था के अंतर्गत मुद्रास्फीति लक्ष्यीकरण को क्रियान्वित करने की कथित सफलताओं और चुनौतियों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss the perceived successes and challenges of implementing inflation targeting under the new Monetary Policy Committee (MPC) regime. (Answer in 150 words) 10 Marks

The monetary policy committee (MPC) was formed in 2016 after the government amended the RBI Act.

This committee is tasked with monitoring and controlling inflation through instruments like repo rate every 4 months in a year.

Successes of Inflation Targetting

- Able to maintain the target of 4% ± 2% inflation from 2016-20.
- Accountability: Report to government in case of failure of manage.
- coordination among fiscal and monetary policy as MPC is a multi stakeholder body
- controlling inflation from spiralling beyond 7%

Candidates must not write on this margin

Challenges

- 54 lock in period of inflation taeget.
- Limitation of escape clause in unexpected circumstances Eg Russian - Ukraine war.
- Limited instrument use. Eg only Repo rate.
- Focus on Quantitative Measures and not Qualitative.

Therefore the need of the hour is to ensure coordination among government and RBI's MPC for balancing growth and inflation in the economy.

Candidates must not write on this margin

Q.3 भारत में सतत् कृषि को बढ़ावा देने और खाद्य सुरक्षा में सुधार के लिए मोटे अनाज उत्पादन की क्षमता का आकलन कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Assess the potential of millet production in promoting sustainable agriculture and improving food security in India. (Answer in 150 words) 10 Marks

Millets are coarse grains like Bajra, Jowar, Ragi. Recently, UN declared 2023 as international Year of millets.

In this light, millets has gained prominence.

Millets freethening sustainable agriculture

(i) Reduce water usage

(ii) Reduce regional disparities as Rajasthan, MP emerge as major producers

(iii) Low cost of inputs required increasing profits.

(iv) Replenish land nutrients reducing fertilises use.

(v) Aid small and maeginal farmers (85% of farmers — NSSO).

Candidates must not write on this margin

Millets enhancing food security :

a) Rich in proteins : ↓ hidden hunger

b) Low glycemic index : ↓ Non communicable disease incidence.

c) ↑ availability for poor due to ↓ price

d) diversification of crops : presently dominated by rice and wheat (~75% of total crop production)

Challenges
- Policy Bias : MSP Procurement of rice and wheat
- Low demand as considered inferior
- Regional Bias.

Thus need of the hour is to encourage practices like Millet Sisters Network, ↑ MSP awareness for millet farmers to boost millet production. It will aid in #1 SDG and #2 SDG of Zero poverty and hunger.

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Q.4 जल जीवन मिशन में पेयजल की उपलब्धता और पेयजल तक पहुँच में क्षेत्रीय विषमता को समाप्त करने का सामर्थ्य है। मिशन के महत्त्व पर प्रकाश डालते हुए, वांछित उद्देश्यों की प्राप्ति में अंतर्निहित बाधाओं पर चर्चा कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Jal Jeevan Mission has the potential to end the regional disparity in the availability and accessibility of drinking water. Highlighting the significance of the mission, discuss the underlying impediments in achieving the desired objectives.

(Answer in 150 words) 10 Marks

Jal Jeevan Mission was formulated to provide clean drinking water to all rural households by 2024.

SIGNIFICANCE OF JJM:

- Reduce urban-rural disparity in water availability
- Infrastructure: Functional tap water connections.
- Sustainability: focus on conservation of water and reduce misuse.
- Diversify water sources to prevent exploitation. Eg of groundwater in N. India.
- ensure good quality (↓ diseases) drinking water in light of contamination. Eg by uranium in some parts of country.

Candidates must not write on this margin

IMPEDIMENTS

- limited funding.
- neglect of urban slums — poor quality water
- absence of integration with other schemes like PM-AWAS.
- Time bound target focusing ~~Quality~~ Quantity > Quality of outcome.

Way forward

- white paper on assessment of progress so far.
- inter ministerial coordination.

Therefore, need of the hour is to ensure functional SJM for meeting SDG#6 of clean and safe water and sanitation, necessary for human resource development

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Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

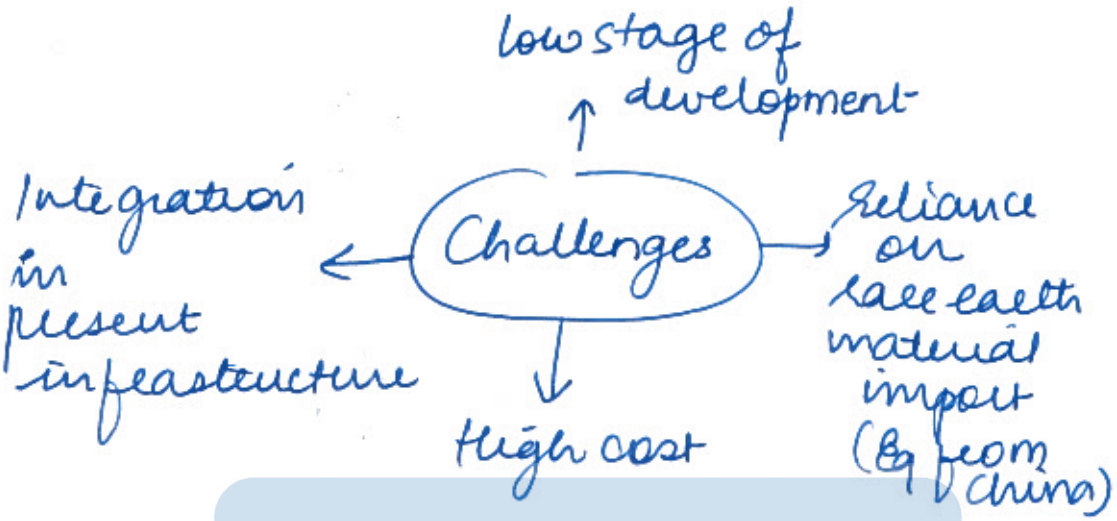
What do you understand by Battery Energy Storage Systems (BESS)? Discuss its applications and how it can revolutionize the energy program of India. (Answer in 150 words) 10 Marks

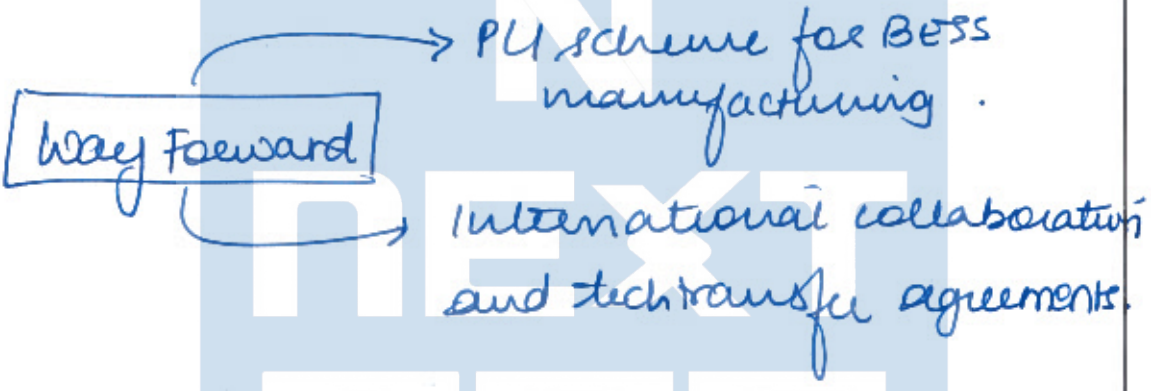
Battery energy storage system (BESS) refers to an energy storage mechanism to counter the issues of intermittancy in renewable energy.

APPLICATIONS

- Round the clock power eg. Solar, wind generated.
- Reduce need of grid network and infrastructure dev. in remote areas.
- Storage of clean energy eg green hydrogen.
- Develop small scale use application eg in EV.
- Can power large industries without fossil fuels.
- New energy technologies like nuclear, methane can be stored.

Candidates must not write on this margin





Therefore, the need of the hour is to ensure development of such technologies for faster shift to renewables and meeting of Panchamrit goals.

Candidates must not write on this margin

Q.6 इसरो के गगनयान मिशन में हुए विकास और उपस्थित चुनौतियों पर संक्षिप्त चर्चा कीजिए। समाज के लिए मिशन के संभावित लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss in brief developments and challenges in the Gaganyaan mission of ISRO. What are the possible benefits of the mission for the society? (Answer in 150 words) 10 Marks

Gaganyaan Mission of ISRO aims to launch a human mission to space. It aims to carry 3 astronauts to the low earth orbit for 3 days and return back to earth.

Developments

1) India is collaborating with ROSCOSMOS and NASA is training of astronauts for the mission

2) ISRO is testing crew launch modules recently.

2) A humanoid will be launched before a final human launch.

Candidates must not write on this margin

Challenges
- Time bound target of 2024.
- Limited funding available with ISRO.
- Low expertise due to novelty of the mission.
- ~~Lack of~~ Focus on missions like Chandrayaan 2

Possible Benefits
- India enter league of nations with human mission ↑ image.
- enhance credibility of Indian space programme
- ↑ commercial avenues for international launches
- Prepare ground for more ambitious missions Eg. Mars landing

Thus, ISRO's Gaganyaan mission will boost Indian space endeavour and create various spin off effects.

Candidates must not write on this margin

Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सरल और जादुई समाधान हो सकता है"। भारत के राष्ट्रीय हरित हाइड्रोजन मिशन के आलोक में कथन का आलोचनात्मक विश्लेषण कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

"Green hydrogen can be the silver bullet in our quest to tackle climate change and pollution". Critically analyze the statement in light of India's National Green Hydrogen mission.
(Answer in 150 words) 10 Marks

National Green Hydrogen Mission was announced in Budget 2023-24 with the target of developing 5MMT capacity by 2030.

It can help tackle —

Climate change

a) reduce reliance on fossil fuels.

b) alternative in clean energy mix.

c) Meet target of net zero emissions by 2050. (UNFCCC).

Pollution

(i) no GHG emissions as only water is released.

(ii) decarbonise our economy.

(iii) no chemical or Residual waste created.

Candidates must not write on this margin

However, this technology suffers from various challenges:

(i) high cost of development.

(ii) Reliance of non green sources of power for electrolysis.

(iii) @ Nascent stages of development.

(iv) Flammable and difficult to store.

Way Forward → Invest in R&D of this technology.

→ International collaboration for best practices.

Therefore, green hydrogen provides a solution & future of clean energy and will help fulfil SDG # 13 — counter climate change

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Candidates must not write on this margin

Q.8 हाल ही में जोशीमठ, उत्तराखंड में आई आपदा के आलोक में, हिमालय क्षेत्र में आपदा प्रबंधन और पर्यावरण संरक्षण के लिए मुख्य सबक क्या हैं? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the key lessons for disaster management and environmental conservation in the Himalayan region, in light of the recent disaster in Joshimath, Uttarakhand? (Answer in 150 words) 10 Marks

The Himalayan Region is a critical ecosystem due to its importance in weather maintenance, monsoon, biodiversity protection etc.

However, it faces certain —

THREATS

- Climate change impact
  - ↓ glacial ice.
  - GLOF risk ↑
- human construction & deforestation
  - destabilisation of slope.
  - landslide
  - Earthquake risks ↑
- Invasive species.
  - plant and animal biodiversity

These issues has contributed to land subsidence in Joshimath. It has been attributed to deforestation, ↑ population pressure, HEP projects eg Tapovan.

Candidates must not write on this margin

Key lessons

(i) Ecology centric development is necessary.
Eg- prevent encroachment on flood plains.

(ii) Controlled tourism : as Joshimath is a place of religious significance.

(iii) Evidence based policy making :
Eg. Chardham project against various committee reports

(iv) afforestation and nature based solutions centred around traditional knowledge.

(v) People at the heart of development - ensure community led conservation.

Therefore, need of the hour is to ensure proper rehabilitation and ecological assessment before undertaking any developmental project

Candidates must not write on this margin

Q.9 "पंजाब में हालिया कट्टरपंथी रुझानों से पता चलता है कि खालिस्तान का मुद्दा अभी भी उबल रहा है।" हालिया घटनाक्रम के संबंध में कथन पर चर्चा कीजिए और इससे निपटने के उपाय सुझाएँ।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"The recent radical trends in Punjab show that the Khalistan issue is still simmering." Discuss the statement with respect to recent developments and suggest measures to handle it.

(Answer in 150 words) 10 Marks

The issue of insurgency and secessionism is a key security concern. It arose in 1980s Punjab's demand for a separate Khalistan.

Recent activities of certain radical groups through online propaganda and external groups in UK, Canada defacing Indian embassies shows its continuing ~~trio~~ trend today.

Furthermore, certain groups in Canada and UK called for a referendum to clarify the status of a separate Khalistan.

Candidates must not write on this margin

Agricultural bill discontent

↑

Vote bank politics in canada
– ↓ Repression of such activities ← **Reasons** → Individual motivation of radical leaders.

↓

Limits of intelligence gathering agencies to prevent radicalisation

Measures →
- Online monitoring to remove propaganda post (IT Act, Telecom Rules)
- Counter propaganda using civil society.
- Arrest of radical individuals.
- physical monitoring of situation at group
  - community policing.

Therefore the need of the hour is to ensure any threat to Indian unity and security is nipped in the bud.

Candidates must not write on this margin

Q.10 ड्रोन संचालन में आसानी और साथ ही इसके संचालक की अनामिता, भारत की सीमा सुरक्षा की चुनौतियों में वृद्धि करती है। विस्तारपूर्वक वर्णन कीजिए और सीमावर्ती क्षेत्रों में ड्रोन समस्या से निपटने के लिए सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The anonymity and ease of drone operation contribute to the challenges of India's border security. Elaborate and give suggestions to tackle the drone problem in border areas.

(Answer in 150 words) 10 Marks

Drones are unmanned aerial vehicles used for surveillance or delivery purposes. They can be controlled via remote from person far away.

- Ease of use
  - → Low cost operation
  - → Anonymity of operator (remote controlled)
  - → difficult to track user.
  - → use of basic, easily available technologies like bluetooth.

However it has created security concerns

→ Surveillance across border is possible.

Candidates must not write on this margin

↳ dropping of explosives
Eg in Rajouri, Poonch (J&K)

↳ ↓ privacy of geospatial data.

↳ critical infrastructure locations can be revealed.

Suggestions
- → Drone blocking technologies eg signal jammers.
- → Coordination with local public (Eg vibrant village program).
- → Digital SKY Platform for maintaining records.

Therefore, a multipronged effort is required for ensuring security of border and nation

Candidates must not write on this margin

Q.11 विद्युत संशोधन विधेयक, 2022 उपभोक्ताओं, डिस्कॉम के साथ–साथ पर्यावरण के लिए कई लाभ प्रस्तुत करता है। सविस्तार वर्णन कीजिए। साथ ही इसकी कमियों को भी सूचीबद्ध कीजिए और उन्हें दूर करने के लिए कुछ उपायों का भी सुझाव दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Electricity Amendment Bill, 2022 brings several advantages (1a) for consumers, DISCOMs (1b) as well as the environment (1c). Elaborate. Also, list out its shortcomings (2) and suggest some measures (3) to overcome them. (Answer in 250 words) 15 Marks

Recently, the government passed the electricity amendment act 2022 which amended electricity act 2010.

It's aim is to ensure sustainable use of electricity and encourage shift towards greener resources.

Advantages

(i) consumers :
- ensure time bound grievance redressal.
- rationalisation of tariffs, competitive pricing
- privatisation of sector encouraged.

(ii) DISCOMS :
- reduce debt burden by furthering timely bill payment.

(iii) Environment :
- efficient use of electricity through intelligent monitoring of demand.

Candidates must not write on this margin

- Encourage shift to green energy
  - Renewable purchase obligation expanded.

Shortcoming

- discoms continued reliance on consumer funding.
- continued focus on fossil fuel energy, coal primarily
- Discom face greater competition from private sector.
- Infrastructural issues unaddressed as >50% households have access to poor quality electricity.
- competitive pricing implies that subsidised rates availability ↓ for consumers.

Candidates must not write on this margin

Measures to overcome

(i) phaseout of coal based energy generation.

(ii) Incentivise efficient power generation technologies.

(iii) graded subsidies for consumers.

(iv) rationalise agricultural electricity subsidies.

Thus, need of the hour is to push these steps for SDG#7 : Clean and sustainable energy targets

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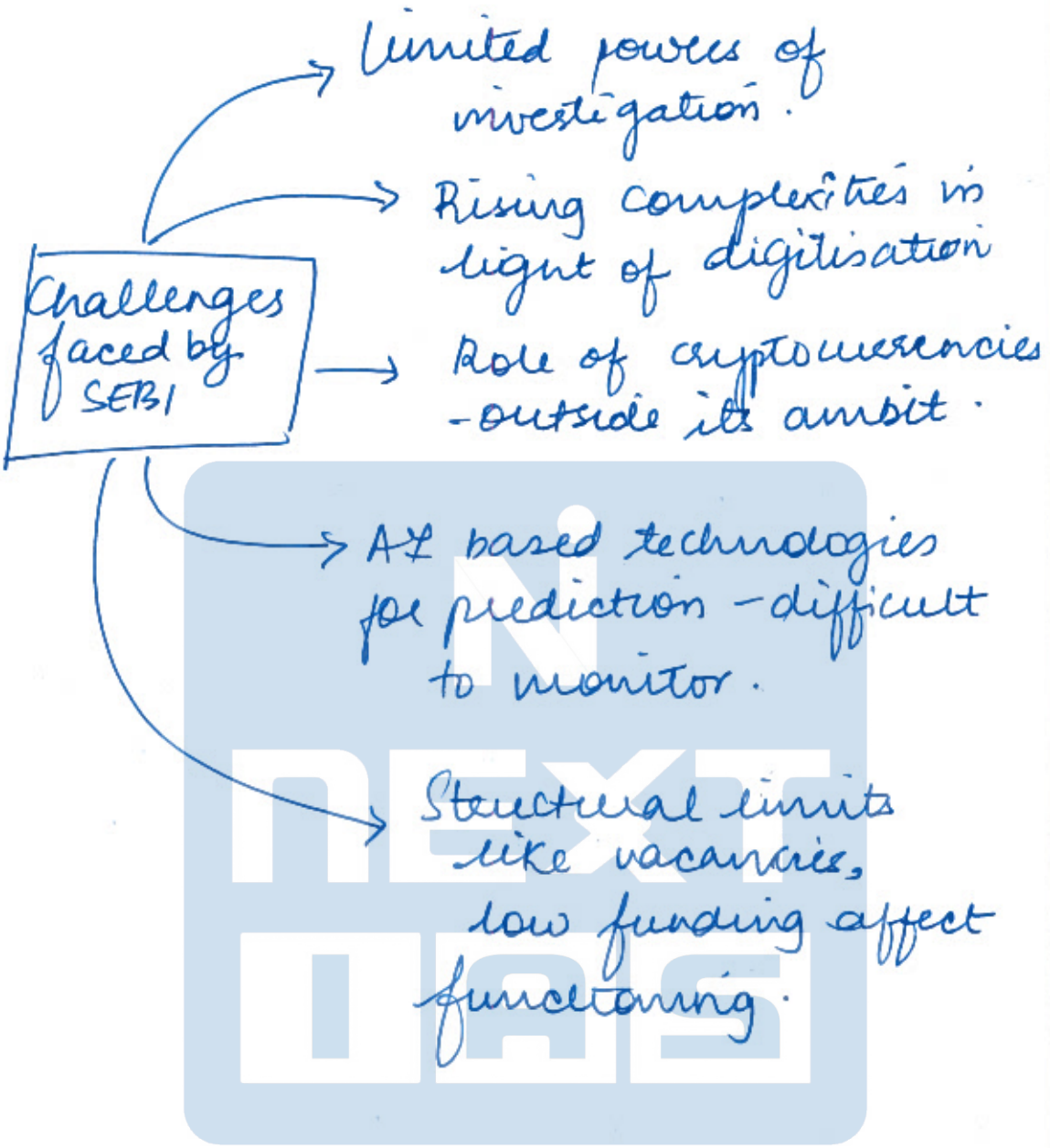
Q.12 भारतीय प्रतिभूति एवं विनिमय बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्त्वपूर्ण भूमिका निभाता है। दिये गए कथन के आलोक में, सेबी के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इस संबंध में सुधारों का सुझाव दीजिये। (250 शब्दों में उत्तर दीजिए) 15 अंक

Securities and Exchange Board of India (SEBI) plays an important role in the regulation of the share market and safeguarding the interests of investors. In the light of given statement, highlight the challenges faced by the SEBI and suggest reforms in this regard. (Answer in 250 words) 15 Marks

SEBI is a statutory body under the SEBI Act 2006 and is in charge of regulating and monitoring India's security sector.

- Importance
  - Regulation of share Market-
    - Setting IPO guidelines and counter
    - Monitor shell company activity.
    - counter any practices like insider trading.
  - Safeguard Investors.
    - Prevent insider trading.
    - ensure fair trading practices.
    - awareness campaigns.

Candidates must not write on this margin



These challenges need to be tackled urgently to prevent scams like Sradha, Adani issue which can harm market and investor sentiment.

Candidates must not write on this margin



Thus, need of the hour is to create strong and capable institutions to maintain free market movement. This will boost India's image and further Make in India.

Candidates must not write on this margin

Q.13 भारतीय अर्थव्यवस्था में एक प्रमुख योगदानकर्ता होने के बावजूद, कृषि क्षेत्र कई बाधाओं से ग्रस्त है जो इसकी वृद्धि और विकास में बाधा डालते हैं। इन बाधाओं पर काबू पाने में प्रौद्योगिकी की भूमिका पर चर्चा कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

Despite being a major contributor to the Indian economy, the agriculture sector is plagued by several constraints that impede its growth and development. Discuss the role of technology in overcoming these constraints.

(Answer in 250 words) 15 Marks

Agriculture sector continues to be a major contributor to Indian economy as —

(i) 47% of employment provider.

(ii) 17% of GDP.

(iii) ensure food security of India.

(iv) Export potential boost as
#1 producer of milk
#2 producer of rice, wheat, fruits.

(v) contributor to growth
— 3.5% agricultural sector growth in 2022-23.

However, it continues to be plagued by several constraints.

A) EMPLOYMENT.
↳ case of disguised employment in light of low job creation in other sectors

Candidates must not write on this margin

↳ Low income generation
(Agri Census 2015-16: Avg agricultural household income is ₹10000 per month).

↳ Feminisation as 77% employed females in agriculture and 55% employed as agricultural labour (NSSO data).

B) STRUCTURAL ISSUES
↳ Increasing input cost due to inflation & its festivities
↳ poor logistical connectivity.
↳ Low storage (135 MMT Capacity whereas production is 330 MMT)

C) MARKET ISSUES.
↳ APMC : ↑ intermediaries ↑ cost
↳ Cobweb phenomena creating supply - price circle.
↳ Digital literacy & affecting use of e-Nam.

Candidates must not write on this margin

Use of Technology as a Solution

→ ICT : • awareness and advisories eg MKisan
• MSP prices information
• e-NAM direct marketting

→ Biotechnology • Better quality seeds ↓ cost.
• GM crops for ↑ yield.

→ AI : • Weather prediction
• demand-supply-price prediction.

→ Online education and Spread of traditional knowledge. (↓ grain drain)

Thus, agricultural sector provides an opportunity to create inclusive growth and 'Sabke Sath, Sabka Vikas'

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Q.14 पर्यावरण एवं प्राकृतिक संसाधनों पर सिंचाई के प्रभाव का मूल्यांकन कीजिए, और कृषि में सिंचाई पद्धतियों की संधारणीयता और समता सुनिश्चित करने के लिए उपाय सुझाएँ। (250 शब्दों में उत्तर दीजिए) 15 अंक

Evaluate the impact of irrigation on the environment and natural resources, and suggest measures to ensure the sustainability and equity of irrigation practices in agriculture.

(Answer in 250 words) 15 Marks

Irrigation is the practice of assured water supply for crop production. It is essential in India as rainfed area continues to be around 50% (Economic Survey 2019). It will also reduce monsoon dependency.

- DIFFERENT TYPES OF IRRIGATION
  - Surface in plains
    - Flood Eg Rice.
    - Micro Eg in Desert areas.
  - Sprinkler in most crops.

Impact on environment & natural resources.

(i) Runoff of fertilisers leading to eutrophication.

(ii) increasing salinisation due to

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Capillary effect of ground water irrigation. Eg- Punjab, Haryana.

(iii) Top soil removal. ↓ productivity.

(iv) Clogging of soil's pores ↓ exchange of gases and aeration.
Eg- in rice cultivation.

(v) Excessive water use: Eg Agriculture sector uses 90% of ground water.

Positive impacts →

a) increase in crop production.

b) allow barren land use for crop production.
Eg- I/C link in Rajasthan for sugarcane production.

c) water conservation through micro irrigation.

Due to the ill effects of irrigation, due changes are required.

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MEASURES FOR SUSTAINABILITY AND EQUITY

- Increase use of micro irrigation for water use ↓
- collaborations with Israel for best irrigation technologies.
- subsidise for using PM Krishi Sinchayi Yojana -
- watershed approach. Eg. Neeranchal.
- Practices like SRI for rice production ↑ to ↓ water wastage

Thus, the need of the hour is to balance ecological and food security concerns for ensuring sustainable development.

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Q.15 परमाणु ऊर्जा और अंतरिक्ष प्रौद्योगिकी के क्षेत्र में क्रमशः डॉ. होमी जहाँगीर भाभा और डॉ. विक्रम अंबालाल साराभाई के योगदान से भारत को रणनीतिक रूप से किस प्रकार लाभ हुआ? (250 शब्दों में उत्तर दीजिए) 15 अंक

How India benefitted strategically from the contributions of Dr. Homi Jehangir Bhabha and Dr. Vikram Ambalal Sarabhai in the fields of atomic energy and space technology respectively?
(Answer in 250 words) 15 Marks

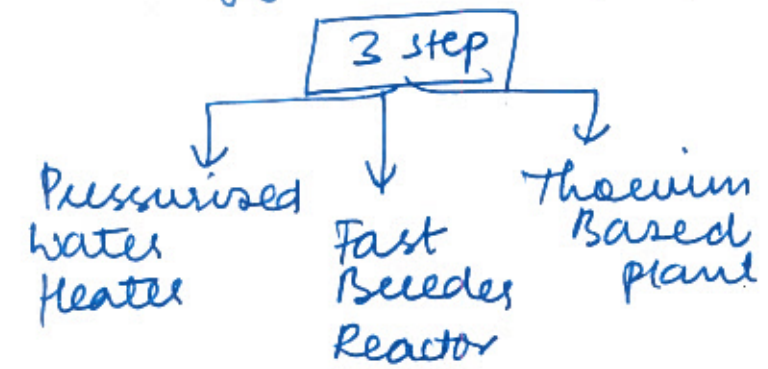
India's strategic leadership in the world is based on our space and nuclear science programme.

It is a result of achievement of Indian scientists like —

H.J. Bhabha

i) laid the ground for India's nuclear energy programme.

ii) established our 3-step nuclear energy reliance programme.



Candidates must not write on this margin

Benefits → Alternative in clean energy technologies (6% of energy mix is nuclear)

→ laid groundwork of nuclear tests in 1988 (strategic autonomy)

→ International collaborations Eg- Civil nuclear deal with USA, Japan.

V. Sarabhai

(i) laid the foundation of Indian Space Programme.

(ii) Helped develop launching stations Eg- Sriharikota.

(iii) Headed the sounding rocket programme.

(iv) Headed launch of 'Aryabhatta' and collaboration with Russia on various programmes.

This yielded various benefits creating a multiplier effect.

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Benefits
- India's space program is comparable with leading nations.
- 1st to enter Mars orbit in 1st attempt
- Public welfare
  Eg Edusat : 35,000 homes
- Key missions - building image like Chandrayaan, Gaganyaan.

Thus, Indian scientists aided in putting India on the world map as a formidable technological power

NEXT IAS

Candidates must not write on this margin

Q.16 जेनरेटिव एआई निकट भविष्य में नवाचार की सीमाओं को आगे बढ़ाने का सामर्थ्य रखता है, फिर भी इसका सामाजिक प्रभाव पर्याप्त चुनौतियाँ खड़ी करता है। सविस्तार उत्तर दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Genreative AI holds the potential to push the boundaries of innovation in the near future, yet its societal impact raises substantial challenges. Elaborate. (Answer in 250 words) 15 Marks

+ - WP

Generate AI refers to use of human like intelligence capabilities by computers to create innovative products like music, creative writing, art among others.

Chat GPT has revolutionised and democratised the use of generative AI and given rise to this debate.

Benefits of Generative AI

- Easing access of information.
- Data set analysis.
- Legal data sifting and reorganisation.
- Innovative music and artistic products.
  Eg: Drake's voice to own lyrics.
- Aids in research analysis
  Eg. Genome sequencing in biotechnology.
- Space to human your energy to be spent on more creative pursuits.

Candidates must not write on this margin

However various challenges have been raised —

(i) Issue of IPR violation / privacy → free use of data for research can violate copyright, trademarks

(ii) Privacy violation → generative AI collects large amount of data from devices for precise results.

(iii) Job loss → Bank of America report states that India can witness 30% Job losses due to AI by 2030.

(iv) Social unrest and protests → Eg. Hollywood writers Strike due to overtake of their roles by AI.

(v) Bias → as the generative AI learns from prevalent data.

(vi)

Candidates must not write on this margin

Way Forward

(i) global convention to create regulations on AI (use of GPAI presidentship, India can take lead).

(ii) National Law on regulation of AI.

(iii) Updating existing laws Eg IPC, IT Act to link cyber security issues arising out of AI.

(iv) Awareness among public regarding use

(v) Strong privacy protection framework

Thus need of the hour is to ensure use of AI 4 all for responsible use of technology.

Candidates must not write on this margin

Q.17 नवंबर 2022 में मिस्र में COP27 संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन में लॉन्च किये गए "जलवायु के लिए मैंग्रोव गठबंधन" के उद्देश्य को स्पष्ट कीजिए। उष्णकटिबंधीय देशों की तटीय पारिस्थितिकी को बनाए रखने में मैंग्रोव के महत्त्व पर विस्तार से प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Explain the purpose of the "Mangrove Alliance for Climate" launched at the COP27 UN Climate Change Conference in Egypt in November 2022. Elaborate on the importance of mangroves in maintaining the coastal ecology of tropical nations. (Answer in 250 words) 15 Marks

Mangrove Alliance for climate (MAC) was formulated in COP27 Sharm-el-Sheikh. It was an initiative of countries like India, Indonesia, Egypt and other tropical nations to conserve mangrove ecosystem.

IMPORTANCE OF MANGROVES

- Protect the shore line against salt water ingress
- Buffer against disasters like cyclones.
- Ecosystem services like groundwater replenished, nitrogen fixation.
- Food products. like exotic fruits
- Purification of water and soil from pollutants
- Wildlife protection & Habitat
  Eg. Bengal tiger in Sundarbans

Candidates must not write on this margin

However Mangroves are facing various threats.

- Climate change: Die back in australia
- Encroachment changing land use eg. agriculture
- Shifting cultivation.
- Pollution due to dumping of waste.
- clearing for security concerns. Eg. Border between India and Bangladesh.

Thus, in this light MAE will provide the following benefits

(i) International cooperation on mangrove protection

(ii) transfer of funds for conservation.

(iii) Key species relocation to boost ecosystem.

(iv) Sharing of best practices

(v) Experts knowledge and

Candidates must not write on this margin

multistakeholder collaboration.

way forward

- Protection under Environment Protection Act and wildlife Protection Act 1972.
- Use of National Coastal zone Management Programme for conservation.
- Proper EIA before clearance for projects.
- Sacred groves based traditional conservation.

Thus, a community led conservation approach will ensure preservation of ecosystem and meet SDG #13, NDC. targets

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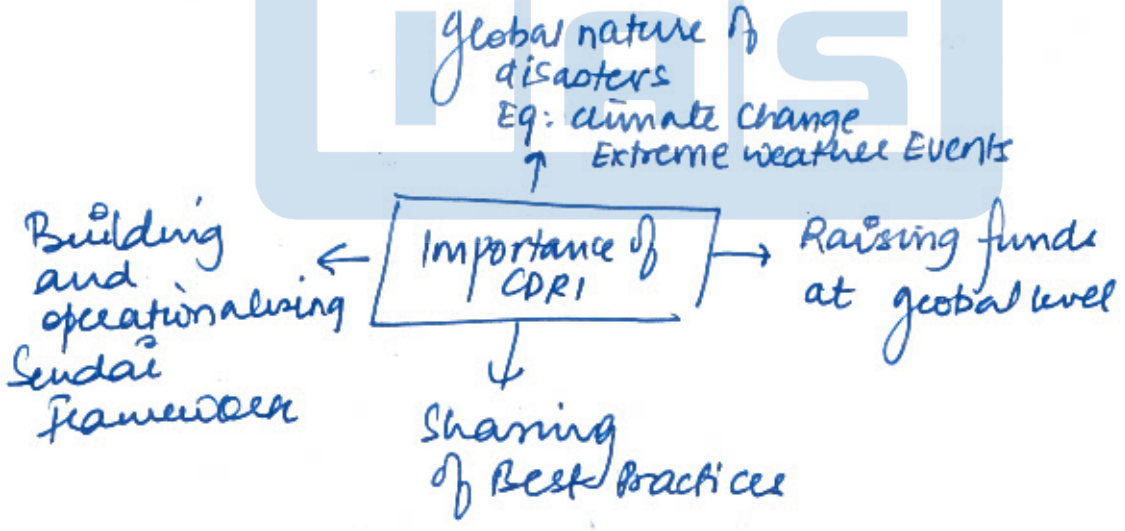
Q.18 आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए।
(250 शब्दों में उत्तर दीजिए) 15 अंक

The Formation of the Coalition for Disaster Resilient Infrastructure brings more robustness to the Disaster Management approach in India. Comment and justify the need for a new strategy to tackle Disasters in India.
(Answer in 250 words) 15 Marks

what
why
challenges
new.

Coalition for Disaster Resilient Infrastructure (CDRI) was launched by India in 2019 UN new york Summit on climate Action.

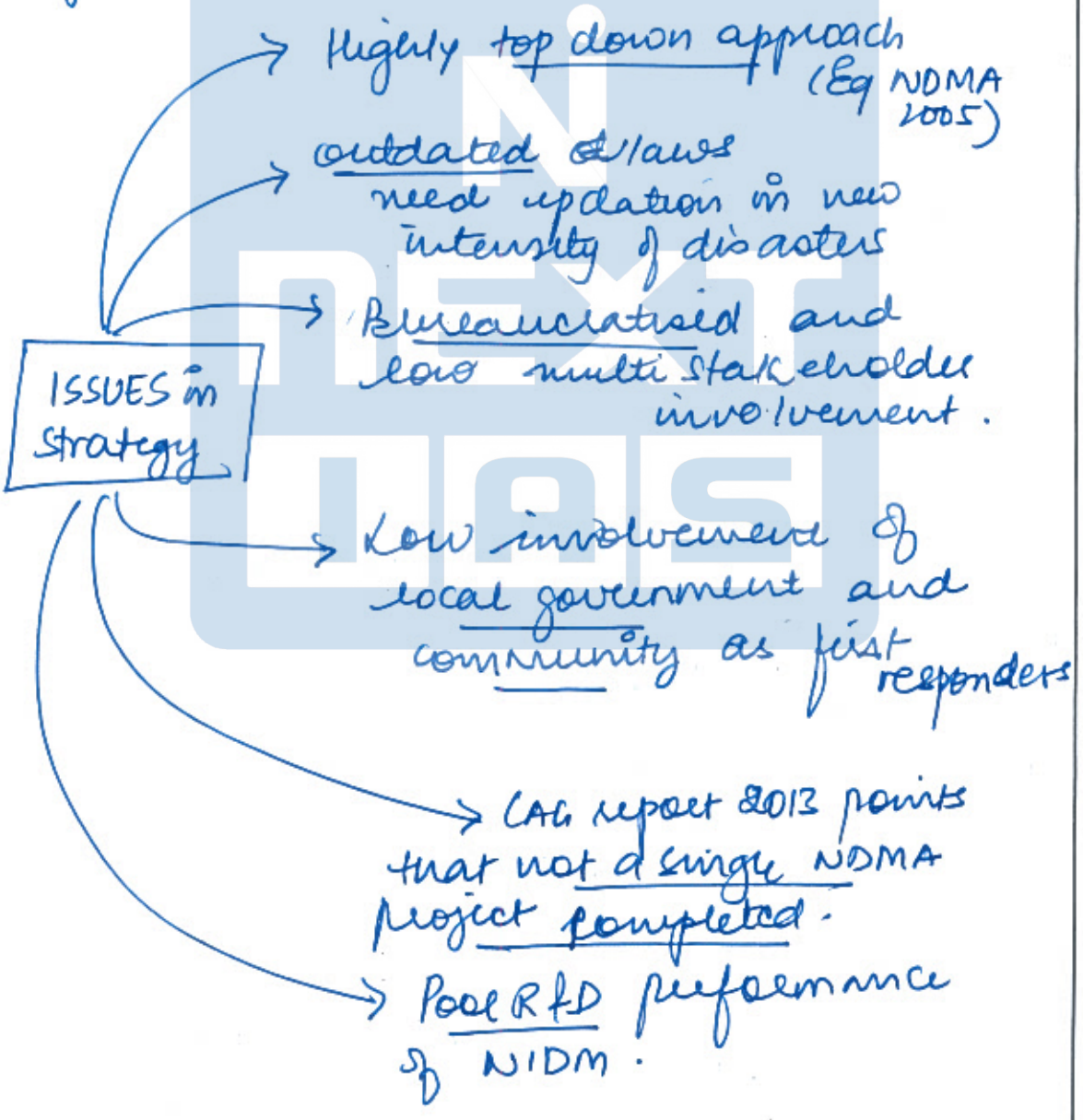
The aim of CDRI was to further international collaboration on disaster risk reduction.



Thus, CDRI will ensure a new integrative energy in disaster management to tackle the issue holistically.

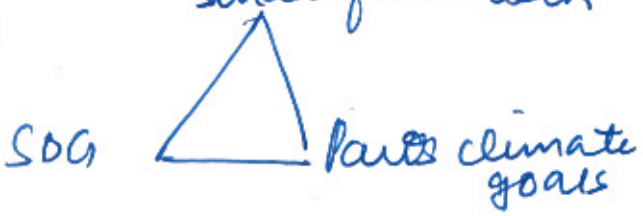
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INDIA'S STRATEGY ON DISASTER MANAGEMENT is characterised by National disaster management law 2005, National Policy of 2016 and National Action Plan 2015. Lately PM gave a 10 point agenda in 2016.



Candidates must not write on this margin

Thus, India needs a new strategy that encompasses



Thus, a ~~to~~ bottom up approach is needed ~~envisaged~~ wherein greater community participation is emphasised.

Secretary General of UN has called for EWS4all. It can be added in our new strategy.

Therefore, a people centric approach in disaster management is the need of the hour.

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Q.19 महत्त्वपूर्ण बुनियादी ढाँचे (क्रिटिकल इंफ्रास्ट्रक्चर) और प्रमुख निगमों को लक्षित करने वाले रैंसमवेयर हमलों में हुई हालिया वृद्धि ने मजबूत साइबर सुरक्षा उपायों और नीतियों की तत्काल आवश्यकता पर प्रकाश डाला है। इस प्रवृत्ति में योगदान देने वाले प्रमुख कारकों पर चर्चा करते हुए, विभिन्न क्षेत्रों पर इन हमलों के प्रभाव का विश्लेषण कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

The recent rise in ransomware attacks targeting critical infrastructure and major corporations has highlighted the urgent need for stronger cybersecurity measures and policies. Discussing the key factors contributing to this trend, analyze the impact of these attacks on various sectors.

(Answer in 250 words) 15 Marks

Recently MeitY and CERT-In issued an advisory against ransomware Akira furthering data locking and extortion from users.

Similar ransomware attacks have plagued our public and private sector.

Eg — Zomato users data locked and released after payment of $1 mn.

— Yes Bank faced similar situation.

FACTORS BEHIND RANSOMWARE ATTACKS

(i) Increasing use of internet — India has around 700 mn users (AIMAI)

(ii) Weak cybersecurity laws Eg. outdated Cyber Security Policy 2016.

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(iii) Poor cybercrime prevention network : low expertise with the police, India needs 100 million cybersecurity experts

(iv) ~~Daily~~ Low digital literacy and awareness → Eg - signing Terms and conditions without reading.

(v) Poor monitoring by agencies

(vi) Anonymity Eg. Use of Dark Net by criminals.

Impact on various sectors

- Critical infrastructure and services affected. Eg. RedEcho → Mumbai electricity.
- Public service delivery effectiveness ↓ Eg - Closure of Bank services by Yes Bank temporarily
- Economic activity ↓ as public trust ↓
- Privacy of the individual's data at stake.
- Health and education services - limited scaling up and digitisation

Candidates must not write on this margin

Way forward

- Strong privacy protection law (BN Srikrishna committee)
- cybersecurity updated policy.
- Skilling and training of personnel
- Mass awareness campaigns.

Thus the government needs to build on its security network to ensure the goal of digital India and digital nagriks are fulfilled in Amritkaal

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Q.20 सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है?

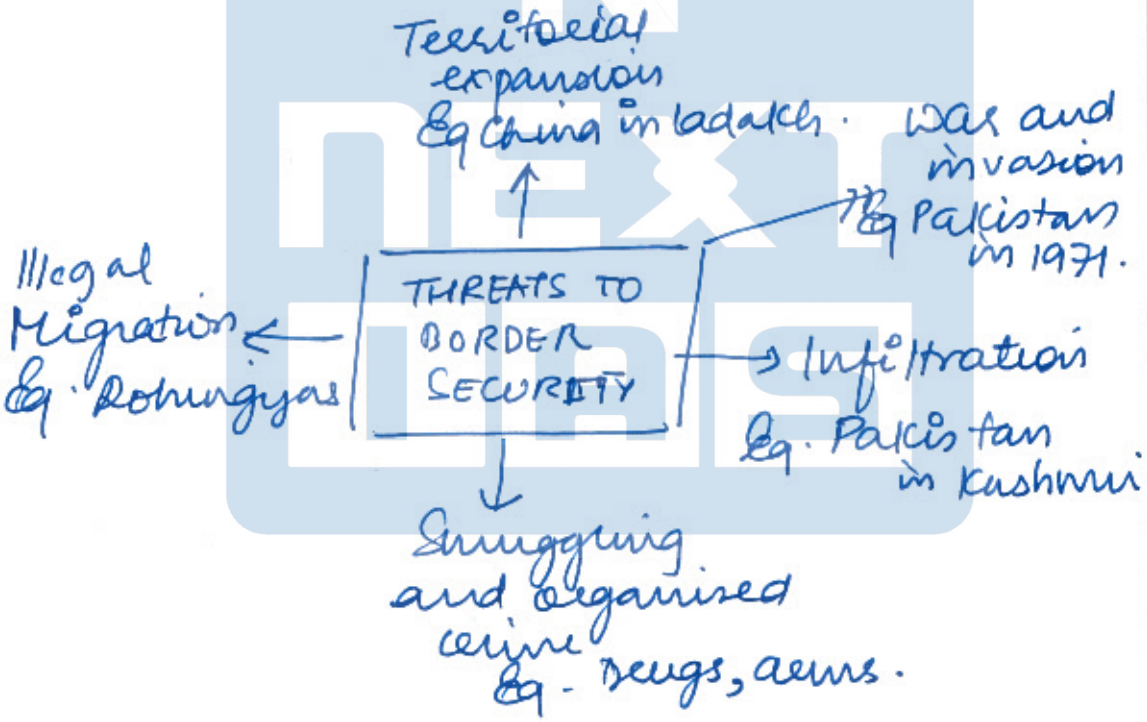
(250 शब्दों में उत्तर दीजिए) 15 अंक

Challenge (1) (2)

In the context of border security, how can cooperation and coordination between different security agencies be improved to ensure effective and efficient management of coastal and terrestrial borders?

(Answer in 250 words) 15 Marks

Border security implies protection of nations' territorial integrity and sovereignty from attack by adversial actors.



In order to prevent such challenges, various border security forces are placed to enhance protection.

Candidates must not write on this margin

However, these security forces face challenges

- (i) frigid and difficult terrain
  Eg in Ladakh, Siachin.
- (ii) Overlap of jurisdiction
  Eg. China border by ITBP, Assam Rifles
- (iii) Conscription based soldiers
  Eg. in Agnipath scheme.
- (iv) Separate commands of army, military and navy.
- (v) Unmanned coastal borders.

Increasing cooperation and coordination among security forces by.

a) Theatreisation of armed forces.

b) Common command - rank action able under CDS.

c) greater communication channels

d) furthering resource sharing ⇒

Candidates must not write on this margin

Reduce duplication.

e) Technology based surveillance in coastal and difficult terrain.
Eg – expansion of CIBMS mechanism.

f) Integrated Battle groups (Shetkari committee)

Thus, government steps of increasing defence partnerships and modernisation of our military resources is a step in right direct to boost security.

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Space for Rough Work

NEXT IAS