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GENERAL STUDIES (TEST CODE : 1248)

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Medium Eng./Hindi	ENG	Registration Number	95820
Center		Date	6/9/19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
- There are **TWENTY** questions printed in **ENGLISH & HINDI**
इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
- All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
- 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 medium other than the authorized one.
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
- Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
- Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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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. Explain the significance of Credit Rating Agencies (CRAs) in India and highlight the issues in their working. (150 words) 10

भारत में क्रेडिट रेटिंग एजेंसियों (CRAs) का महत्व स्पष्ट कीजिए और इनकी कार्यप्रणाली से संबंध मुद्दों को रेखांकित कीजिए।

Credit rating agencies are institutions that evaluate liquidity and solvency risks of securities issued and Commercial bodies.

ex - CRISIL, CARE.

SIGNIFICANCE

- (1) helps in pricing of securities.
A AAA rating lowers interest rates on securities and vice versa.
- (2) information tool for investors.
- (3) ensures fiscal and expenditure discipline of borrowers.
- (4) helps in gauging economic resilience of a nation.
- (5) inflow of FDI/FII

ISSUES

- (1) Credit shopping — conflict of interest because issuer of securities pays for services.
- (2) lack of competition in market → domination of few agencies like S&P and Moody's
- (3) lack of timely information on likely default → ex in case of IL&FS crisis, downgrade of securities happened very late.
- (4) poor disclosure standards.
- (5) Western domination → alleged that India's sovereign rating is not being upgraded despite compelling evidence by S&P and Moody's.

Recently, SEBI has improved disclosure requirements of CRAs. This is a much needed reform.

2. What are the issues that have limited the success of Special Economic Zones (SEZs) in India? Mention some steps that can be taken to address them. (150 words) 10

भारत में विशेष आर्थिक क्षेत्र (SEZs) की सफलता को सीमित करने वाले मुद्दे क्या हैं? इन्हें दूर करने के लिए उठाए जा सकने वाले कुछ कदमों का उल्लेख कीजिए।

Special Economic Zones are delineated land parcels, considered foreign territory for taxation purposes. These objectives are to increase employment, exports and investments.

Issues in SEZs:-

Baba Kalyani Report has pointed out :-

- (1) Utilized lands by SEZs
- (2) Lack of investments in SEZs.
- (3) Multiple forms and structures of SEZs such as Industrial corridors, duty free zones etc, reduce unified policy approach.
- (4) Lack of hinterland CONNECTIVITY.

(5) Uncompetitive exports due to competition with countries with which India has FTAs.

STEPS TO BE TAKEN

(1) Redefining SEZs as Employment and Investment Zones.

(2) Amendment in Tax structures. Minimum alternate tax that has been reintroduced needs to be rationalized.

(3) Infrastructure status and PSL leading to assets created under SEZs.

(4) Promote hinterland connectivity by promoting RAIL-ROAD linkages, expediting Dedicated Freight corridor etc.

Kelkar's committee report on PPP which provides for institutional Committee on PPP will also be useful.

3. The opportunities for start-ups in India are immense, but so are the challenges. Discuss. (150 words) 10

भारत में स्टार्ट-अप्स के लिए असीमित अवसर हैं, लेकिन चुनौतियां भी उतनी ही हैं। चर्चा कीजिए।

Start ups are disruptional, commercial entities, that are less than 7 years old and seek to commercialize ~~a~~ innovative solutions to problems.

Opportunities for startups :-

- (1) Favorable government policies such as MUDRA, Startup policy and Stand up India schemes.
- (2) Reduced costs of digital transactions
- (3) Economic growth potential of India is higher than the World, favouring exports.
- (4) Software expertise of India
- (5) Indian city Bangalore has

been called SILICON VALLEY of the East.

(5) Favorable Alumni and Diaspora networks improving Funding for startups.

(6) Rise in Gig economy.
Challenges :-

(1) Policy uncertainty ex - Angel Tax issue and lack of clarity on definition of startups. (ECONOMIC SURVEY 19 has also said that policy uncertainty has reduced scope for startups)

(2) Slowing economic growth

(3) NPA ridden banks and NBFCs has reduced funding.

(4) Inflexible labor laws preventing hire & fire.

(5) Technological constraints such as Net Neutrality.

(6) competition from foreign giant startups ex Uber
NR Murthy committee recommendations for long term risk finance needs implementation.

4. The term 'Circular Economy' is often seen in news. What are the principles that it is based on? Bring out its relevance for India. (150 words) 10

'चक्रीय अर्थव्यवस्था' (सर्कुलर इकॉनमी) पद प्रायः सुर्खियों में रहता है। वे कौन-से सिद्धांत हैं जिन पर यह आधारित है? भारत के लिए इसकी प्रासंगिकता स्पष्ट कीजिए।

Circular economy is an environment friendly way of production and consumption, characterized by 5Rs. Reduce, Recycle, reuse, refurbish and

PRINCIPLES :-

- (1) minimizing resource use
- (2) lowering consumerism
- (3) reducing demand for inputs
- (4) Extended Producer Responsibility
- (5) products with greater life cycles
- (6) design of products should be conducive to recycling.

Relevance for India :-

ECONOMIC :-

(1) reduces need for imports of raw materials. ex - reusing batteries can reduce lithium imports.

(2) economical inputs.

(3) can increase GDP of country by increasing EMPLOYMENT in green technologies.

SOCIAL BENEFITS

(1) reduce conflict over resource extraction. ex - POCSO - Niyangini hills like disputes.

(2) reduces displacement of people.

ENVIRONMENT BENEFITS :-

(1) reduce global warming and pollution.

Way Forward :-

(1) Popularising the concept both for producers and consumers.

(2) Increased support to PRODUCER-RESPONSIBILITY organisations.

(3) Academia should promote causes on the concept.

5. Assess the performance of Pradhan Mantri Jan-Dhan Yojana in achieving its stated objective of financial inclusion. (150 words) 10

वित्तीय समावेशन के अपने निर्धारित उद्देश्य को प्राप्त करने में प्रधानमंत्री जन-धन योजना के प्रदर्शन का आकलन कीजिए।

PM Jan Dhan Yojana is a scheme for financial inclusion which is done by opening no-frills bank accounts and sale of low cost financial products to the poor.

Performance

(1) has been very good as in 2017 more than 80% population had access to bank accounts, as against 40% 5 years back.

(2) As per RBI, percentage of zero-balance accounts has reduced.

(3) gender inclusion as a lot of bank accounts were opened for women.

(4) Overall Overdraft facility of

₹ 10,000 has reduced financial ~~distress~~ distress.

(5) Aadhar enabled payment services (AEPS) has facilitated DBT, reducing corruption and leakages.

(6) Link with insurance schemes such as PM Teewan Tyoti Yojana.

PROBLEMS

(1) Illegal use of bank accounts during demonetisation.

(2) Lack of financial awareness.

(3) Continued reliance on informal money lenders.

(4) Insurance penetration remains low at 3.49% (2017).

Strengthening Banking correspondents and Panchayat Banks of Thakland needs to be emulated.

6. How does pollution in rivers impact the surrounding ecosystem? Explain why such pollution has not shown signs of improvement, despite various government initiatives. (150 words) 10

नदियों के प्रदूषण से आसपास का पारिस्थितिकी तंत्र कैसे प्रभावित होता है? समझाइए कि विभिन्न सरकारी पहलों के बावजूद इस प्रकार के प्रदूषण में सुधार के संकेत क्यों नहीं हैं।

As per a recent report by CPCB more than 351 river stretches in the country are highly polluted.

Impact on surrounding ecosystem:-

- (1) Death of fishes and aquatic plants due to DEAD ZONES
- (2) increased temperatures of rivers causes algal blooms
↓
- (3) spread of vector borne diseases such as malaria and dengue.
- (4) leaching of groundwater, makes them unfit for consumption
- (5) increase soil salinity lowers agriculture productivity.

Despite various initiatives such as National Wetlands Conservation programme and Namami Gange, there has been little improvement because :-

- (1) lack of adequate monitoring stations.
- (2) improper SOLID Waste management.
- (3) Industries continue to pollute and get away with finer.
- (4) Lack of awareness of ordinary citizens who continue bathing, other forms of use.
- (5) Cultural reasons like immersion of idols is difficult to control.
- (6) Ecological flow of rivers is not maintained due to dam construction.

Recent step of Government to make water conservation a Jan Andolan is a step in the right direction.

7. What is project MANAV launched by the Department of Biotechnology?
Highlight the significance of this project. (150 words) 10

जैव प्रौद्योगिकी विभाग द्वारा आरंभ की गई मानव (MANAV) परियोजना क्या है? इस परियोजना के महत्व पर प्रकाश डालिए।

The Dept. of Biotechnology is one of the constituents of the Ministry of Science and Technology.

MANAV PROJECT :-

It seeks to create maps of the entire cellular and molecular structure of human body. Various organs, tissues, cells etc will be mapped and visual representations created.

SIGNIFICANCE :-

(1) Human body has hardly been studied at such ANATOMICAL detail before.

(2) will improve understanding of

human body and also teaching of medical science in colleges.

(3) targeted and precision in drug delivery.

(4) understanding of underlying causes of diseases.

(5) novel drugs and treatments can be formulated.

Alongside, such initiatives there is an urgent need to :-

(1) strengthen IPR regime

(2) increase funding on R&D from present 0.7% of GDP

for strengthening scientific architecture of the country.

8. Highlighting the properties and applications of superconductors, discuss the constraints related to their practical use. (150 words) 10

अतिचालकों के गुणों और अनुप्रयोगों पर प्रकाश डालते हुए, इनके व्यावहारिक उपयोग से संबंधित बाधाओं की विवेचना कीजिए।

Super conductors are disruptive technologies with following properties:-

- (1) 0 resistance
 - (2) perfect conductivity
 - (3) use of optics
 - (4) light weight
 - (5) achieved at low temperatures.
- Applications:-

Electricity → (1) to build cables that reduce Transmission losses.

(2) to build optical fibres.

CONNECTIVITY → (1) use in 5G to reduce latency and increase data speed.

INDUSTRIES → (1) use in emerging

technologies such as 3D printing.

DEFENCE → (1) for new weapons technology.

Constraints :-

- (1) Expensive to build.
- (2) Lack of technological prowess.
- (3) temperatures required to achieve superconductivity difficult to obtain.
- (4) less R&D expenditure.

9. Discuss the reasons behind India becoming a major destination as well as a transit hub for drug trafficking in South Asia. How does this effect India's internal security? (150 words) 10

दक्षिण एशिया में भारत के मादक पदार्थों की तस्करी के प्रमुख गंतव्य स्थल के साथ-साथ पारगमन केंद्र बनने के कारणों पर चर्चा कीजिए। यह भारत की आंतरिक सुरक्षा को कैसे प्रभावित करता है?

Drug trafficking is a major problem in India with more than 4 crore youth dependent on some or other form of drugs with problems more acute in states like Punjab.

Reasons of becoming major destination :-

- (1) Porous borders in the North East and Free movement regime with Myanmar, causes influx from the Golden Triangle (SE Asia).
- (2) Refugees from Afghanistan and terrorists from Pakistan are used for smuggling drugs from the Golden Crescent.
- (3) Demand in India has increased.

- (4) Lack of coordination between customs agencies, intelligence agencies and police.
- (5) Maritime connectivity has increased delivery by means of COASTAL channels.

TRANSIT HUB

- (1) Weak port and coastal security in India.
- (2) Demand in other countries.
- (3) Piracy in Strait of Hormuz facilitates drug movement.

EFFECT ON INTERNAL SECURITY -

- (1) proceeds from drug trade are used by naxals and terrorist organisations for acquiring weapons.
- (2) border security becomes problematic as resources are diverted to prevent smuggling.
- (3) youth on drugs are used for crime. (ex - children in Delhi dependent on dandak).
- We need to move from OPium - Heroin and for this CIBMS for strengthening border security was much needed.

10. The development of border areas is an important element in border management. In this context, discuss how the Border Area Development Programme (BADP) seeks to ameliorate the problems faced in border areas. (150 words) 10

सीमावर्ती क्षेत्रों का विकास वस्तुतः सीमा प्रबंधन का एक महत्वपूर्ण घटक है। इस संदर्भ में, चर्चा कीजिए कि सीमा क्षेत्र विकास कार्यक्रम (BADP), सीमावर्ती क्षेत्रों की समस्याओं में कैसे सुधार लाना चाहता है।

Border Management is an integrated effort to utilize policies and structures for border security as well as development of border population.

For this end, the Border Area development program was started:-

- (1) increases funding to border states for projects such as education and health.
- (2) faster clearances of projects on the border.
- (3) projects closer to the border are prioritized over those farther away.

- (4) strengthening livelihood opportunities for border populace.
- (5) construction of safe houses and bunkers on border areas.
- (6) upgrading border security infrastructure.

The BAPD seeks to incorporate both DEVELOPMENT and SECURITY approaches to Border management. However, certain weaknesses remain :-

- (1) More focus on Northern borders than in North East.
- (2) Development has not materialized in these areas.
- (3) Shelling continues to damage houses and agriculture.

Way forward :-

- Implementing Madhukar Gupta committee recommendations to involve local police in border management.
- Community policing on border areas (NITI Aayog 75 year plan)

11. Examine whether Fixed Term Employment will be able to achieve the objectives of ease of doing business, achieving labour welfare and job creation. (250 words) 15

परीक्षण कीजिए कि क्या नियत अवधि का रोजगार, ईज ऑफ़ डूइंग बिज़नेस, श्रम कल्याण और रोजगार सृजन के उद्देश्यों को प्राप्त करने में सक्षम होगा।

Fixed term employment is a CONTRACTUAL form of employment in which, employee is hired for a PRE SPECIFIED fixed period and given all benefits of regular employees such as SOCIAL security.

Advantages in Ease of doing Business

- (1) provides flexibility to employer to hire as per NEEDS of BUSINESS CYCLE.
- (2) prevents compliance hassles from multiple and archaic labor laws.
- (3) will enable us to compete with countries like China.

LABOR WELFARE :-

- (1) labor is entitled to all regular benefits such as insurance and PF, unlike casual workers.
- (2) promotes labor mobility as labor can make job transitions as per existing demands.

JOB CREATION :-

- (1) will be improved as employer will not be reluctant in hiring due to labor laws that prevent retrenchment.
- (2) will reduce Labor redundancy and ASSOCIATED costs.
- (3) in sync with the growing GLG Economy.
- (4) will reduce DWAFF firms or firms which ~~red~~ remain small due to

policy instruments. (ECONOMIC SURVEY 19)

However, fixed term employment also has certain disadvantages:-

- (1) perpetuates CASUALISATION as employer has no incentive to regularize employment.
- (2) is just institutionalizing HIRE and fire policy.
- (3) Resentment of TRADE UNIONS
- (4) Employee will have no incentive to invest in upskilling due to rapid obsolescence in skills.

Alongside, Fixed term employment there is need for other labor reforms before consolidating laws into codes. The National Vocational Education Qualification framework needs further strengthening.

12. A growing livestock sector augurs well for the low income households to augment their income and escape poverty. Discuss. Further, suggest some strategies for ensuring sustainable livestock sector growth in India. (250 words) 15

एक वृद्धिशील पशुधन क्षेत्रक निम्न आय वाले परिवारों के लिए अपनी आय में वृद्धि करने और गरीबी से बाहर निकलने हेतु शुभ संकेत है। चर्चा कीजिए। इसके अतिरिक्त, भारत में पशुधन क्षेत्रक का संधारणीय विकास सुनिश्चित करने हेतु कुछ रणनीतियों का सुझाव दीजिए।

Livestock sector is an allied activity to agriculture. It's contribution to agriculture GDP, however has not realized its potential.

AUGMENTING INCOME :-

- (1) Resumes like milk, leather etc provide higher income.
- (2) Provides inputs essential for farming such as manure.
- (3) essential component of Zero Budget Natural Farming ex- (jeeva mutha or cow urine)

ESCAPING POVERTY

(1) increase resilience to natural calamities such as floods and draughts due to diversified income sources.

(2) Loans against CATTLE has been instituted by many SHGs and Cooperatives.

STEPS for growth of live-stock sector.

(1) Implementing MS Swaminathan Commission's recommendations of -

(1) unified insurance products ~~such~~ for farmers and livestock.

(2) augmenting bioresources of farmers by strengthening livestock.

(2) R&D on improving traditional

Indian breeds such as Gir and Mahiwal.
For this expenditure on agri GDP
needs to increase from present 1%
of GDP.

(3) Feedstock revolution for augmenting
livestock produce.

(4) Use of ICT for improving access
to latest information on livestock
diseases, preventing outbreaks
etc.

ex - Kisan Network app.

(5) Instituting telemedicine programs
for livestock.

(6) WHO's One Health approach
to minimize anti drug resistance
in crops - humans - livestock.

This will go a long way in
doubling farmer's income by 2022.

13. Examine whether the time has come for India to usher in full liberalisation of the Capital Account. (250 words) 15

परीक्षण कीजिए कि क्या भारत के लिए पूंजी खाते के पूर्ण उदारीकरण की शुरुआत करने का समय आ गया है।

Capital and Current accounts are 2 important components of the Balance of payment of a country

Current a/c	Capital account
(1) deals with transactions such as exports and imports, remittances etc	(1) deals in FDI/FII, external borrowings etc
(2) full convertibility on current account is allowed	(2) full capital a/c convertibility is not allowed

Need for Convertibility on Capital Account

- (1) FDI/FPI likely to increase
(2) will increase technology transfer to India

(3) will increase Foreign exchange reserves from \$429 billion currently.

(4) will reduce the need for private investment from domestic sources, which leads to CROWDING OUT.

(5) will increase Gross capital formation from the current 35% to higher levels, needed for transitioning to a \$trillion economy.

However, there is compelling evidence to not usher in full Capital Account convertibility as the experience of the EAST ASIAN TIGERS shows!

(1) Will increase VOLATILITY in exchange rates, due to frequent influx and outflux of capital.

- (2) can weaken Indian rupee,
undermining exports.
- (3) adverse effect on MSMEs,
due to higher presence of MNCs in
India.
- (4) fear of CAPITAL FLIGHT.
- (5) increased volatility in stock
markets.

(6) can lead to GLOBALISATION
of RECESSION. India safeguarded
itself from 2008 recession because
it did not allow full
convertibility.

Experts like Vijay Kelkar have
opined against such convertibility.
Way Forward :-

- (1) Increase investments by policy
certainty (ECONOMIC SURVEY 19)
- (2) Higher FDI limits in individual
sectors and easing FDI norms.

14. Highlighting the challenges to agriculture extension in India, discuss how ICT can help in addressing them. (250 words) 15

भारत में कृषि विस्तार के समक्ष चुनौतियों पर प्रकाश डालते हुए, चर्चा कीजिए कि इन्हें दूर करने में ICT से कैसे सहायता मिल सकती है।

Agriculture extension refers to the systematic techniques of utilising knowledge and R&D to improve agriculture education and productivity.

Challenges to Agriculture Extension:-

- (1) Funding woes for agriculture extension - Less than 1% of agri GDP is used on R&D.
- (2) Lack of trained professionals due to sub-par performance of agriculture Universities.
- (3) ICAR is understaffed.
- (4) Lack of infrastructure available with Kishi Vigyan Kendras to

undertake agriculture extension.

- (5) Reluctance of farmers to participate in agriculture extension thinking of it as time and energy waste.
- (6) Illiteracy prevalent in rural areas.

IMPROVEMENT by means of ICT:-

- (1) Affordability improved - Use of ICT promotes mass dispersal of knowledge, lowering per capita costs. ex - Kisan Call centers and Kishi channels on

Doordashan.

- (2) Can increase Reach of agriculture extension. ex - Scientists from ISRAEL are teaching farmers, water conservation techniques using ICT.

(3) Decentralisation of Knowledge - Agri extension service is being disseminated using apps like TIO Agri advisory and also KISAN NETWORK app.

(4) Improved quality → as experts seated in metros can widely disperse knowledge.

(5) Agriculture supply chain can be streamlined using blockchains and other initiatives such as eVin and e-upajam.

Way forward :-

(1) Increasing funding for R&D in agriculture.

(2) Digital connectivity in rural areas needs upgradation.

(3) Telemedicine clinics can be opened for cattle and livestock.

15. Now that it has been two years since introduction of GST in India, do you think the system is on the path to achieve its intended objectives? Support your answer with relevant facts. (250 words) 15

अब जबकि भारत में GST को लागू हुए दो वर्ष हो गए हैं, क्या आप मानते हैं कि यह प्रणाली अपने अपेक्षित उद्देश्यों को प्राप्त करने के पथ पर अग्रसर है? प्रासंगिक तथ्यों से अपने उत्तर की पुष्टि कीजिए।

GST is an indirect, destination based tax levied at point of consumption.

OBJECTIVES :-

- (1) One nation - one tax
- (2) To reduce compliance procedures under multiple tax laws.
- (3) to reduce cascading effect of tax by means of Input tax credit.
- (4) to reduce rate arbitrage by means of multiple tax rates.
- (5) Use data from GST to increase direct tax compliance (Tax filings indeed have increased by 85%.)
- (6) Improve compliance by it's

inherent SELF POLICING mechanism.

However, the objectives not withstanding, GST is not on the path of achieving its objectives at this moment.

(1) World Bank has said that Indian GST is flawed due to:-

→ one of the highest rates in the world.

→ multiple TAX RATES, EXEMPTIONS, CESSSES etc make it the most complicated.

(2) Recently, CAG report has come up with following findings:-

→ GST was implemented in haste.

→ Invoice matching mechanism has not worked well leading to

frauds .

Other Problems :-

- (1) Small traders inconvenienced by 'KAGAZ KARWA'
- (2) Undercollections in GST.
- (3) No significant improvement in Tax - GDP ratio which has hovered in the range of 15-17%.
- (4) Petroleum out of its ambit
- (5) Recently, GDP growth rate in last quarter hit lowest of 5%.

Way Forward :-

- (1) Increasing coverage of COMPOSITION SCHEME further.
- (2) Bringing petroleum in its ambit.
- (3) E-way bill system needs strengthening as well as increased awareness.
- (4) Moving towards uniform, revenue neutral GST rate

16. Write a brief note on Carbon Capture and Storage. Mention its potential benefits and discuss the challenges that need to be addressed for its wide-scale deployment in India. (250 words) 15

कार्बन अभिग्रहण और भण्डारण पर संक्षिप्त टिप्पणी लिखिए। इसके संभावित लाभों का उल्लेख कीजिए तथा भारत में इसके व्यापक पैमाने पर परिनियोजन में आने वाली उन चुनौतियों की विवेचना कीजिए जिन्हें दूर किए जाने की आवश्यकता है।

Carbon Capture and storage is one of the techniques used in Carbon sequestration. Under it, carbon being released by factories, vehicles etc is captured using technology and transported to inaccessible areas like underground coal seams.

It has a lot of benefits:-

- (1) Reduces global warming potential of carbon.
- (2) helps in EXTRACTING coal from unrecoverable seams.
- (3) Reduces Ocean FERTILISATION and OCEAN ALKALIZATION.

- (4) Stored carbon can be USED as fuel, reducing dependence on fossil fuels. (helping us realize our NDCs)
- (5) Soil carbon storage can improve SOIL PRODUCTIVITY.

Challenges :-

- (1) Expensive technology UNAFFORDABLE for India at present.
- (2) Lack of TECHNOLOGY TRANSFER by developed countries which possess this technology.
- (3) Deadlock in Climate Change talks under the aegis of UNFCCC (USA's withdrawal from Paris agreement).
- (4) Lack of research on potential

adverse impacts on biodiversity and climate.

(5) Inadequate human resource potential and infrastructure for harnessing its potential.

(6) India's per-capita energy consumption is already very low.

Way forward :-

(1) International collaborations needs to be harnessed. ex - Horizon 2020 with Europe for further research in the field.

(2) Increase R&D spending as a % of GDP from the present 0.7% of GDP.

(3) UNFCCC approach to climate change, under which discussions on climate change should not be limited to UNFCCC.

17. Highlight the gender specific challenges faced during disaster management. In this regard, discuss how the disaster management cycle can be made more gender sensitive. (250 words) 15

आपदा प्रबंधन के दौरान सामने आने वाली लैंगिक विशिष्ट चुनौतियों पर प्रकाश डालिए। इस संबंध में, चर्चा कीजिए कि किस प्रकार आपदा प्रबंधन चक्र को लैंगिक रूप से और अधिक संवेदनशील बनाया जा सकता है।

As per UNISDR, Disaster Management is the guidelines and systematic operational procedures to minimize negative consequences of disasters. It involves coordination between various stakeholders such as GOVERNMENT, civil society, citizens and disaster response teams.

Gender Specific Challenges :-

Due to PHYSIOLOGICAL differences of women :-

- (1) Sanitary facilities for women.
- (2) Injury to sensitive reproductive organs of women.
- (3) Access to sanitary napkins and other tools for menstruating.

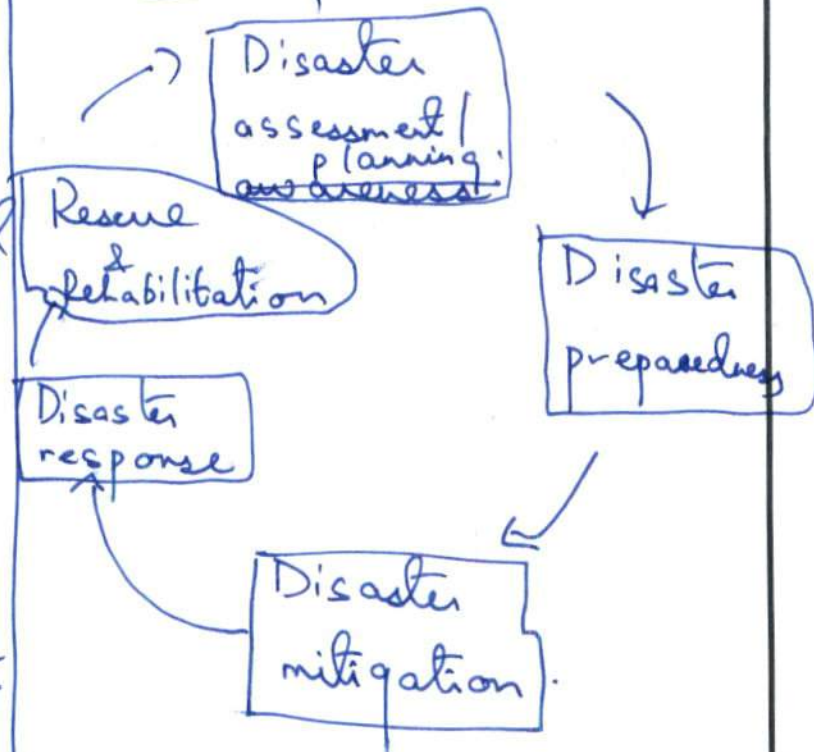
women .

(4) Special attention to needs of pregnant and lactating women .

(5) Non involvement of women's suggestions in disaster management process .

Women's involvement is required at all stages in Disaster mgt cycle .

DM Cycle :-



① Awareness

→ Special attention towards pregnant and lactating women . There should be uniform guidelines for them .

② Training women functionaries towards special needs of women

Disaster preparedness

- (1) Stock iron-folic tablets for anaemic women.
- (2) Stock sanitary napkins in advance.
- (3) Involve women led SHGs/CBOs in disaster planning.

Mitigation

- (1) Pregnant and vulnerable women like children and elderly can be taken to safehouses first.

Response / Rehab and rescue

- (1) Special sanitation facility for women at relief camps.
- (2) Counseling for women in distress.

The Sendai framework for Disaster Risk Reduction advocates women involvement in Disaster Management. It should be further strengthened.

18. Though there are some notable individual achievements, the overall participation of women in scientific research has been abysmally low. Examine. What steps have been taken by the government in this regard?
 KIRAN, VIKAS (250 words) 15

भले ही, कुछ उल्लेखनीय व्यक्तिगत उपलब्धियाँ हों, लेकिन वैज्ञानिक अनुसंधान में महिलाओं की समग्र भागीदारी अत्यंत निम्नस्तरीय रही है। परीक्षण कीजिए। इस संबंध में सरकार द्वारा क्या कदम उठाए गए हैं?

India's spending on R & D has stagnated at 0.7% of GDP over the last decade. Women's participation is said to be less than 15% in STEM.

However, there have been individual achievements :-

- (1) Mangalyaan mission had dominance of women scientists.
 - (2) Ms Swaminathan has been designated head of WHO.
 - (3) Shakuntala Devi, was termed the Wizard of Mathematics.
 - (4) Kalam M Shaw led a bio-tech revolution.
- However, these are exceptions and the overall picture has been

gloomy with women scientists
losing out to their male counterparts.

Reasons :-

- (1) Social reasons → patriarchal
mindset has hindered their upward
and lateral mobility.
- (2) double burden of labor
- (3) traditional social roles as
mothers and care givers.

ECONOMIC REASONS :-

- (1) Lack of credit availability for
taking loans for higher education.
- (2) lack of awareness and
digital tools for exploring
science options.
- (3) discontinuity in research post
maternity leave.

Steps taken by Government :-

- (1) KIRAN for promoting women scientists.
- (2) Coaching for Class 12 girls of Kendriya Vidyalaya to get into premiere engineering institutes.
- (3) India US STEM fellowship for helping women gain exposure abroad.
- (4) Other schemes like AWSAR, VASTRA etc have also promoted Women scientists.

Way Forward :-

- (1) Setting up Entrepreneurship and R&D test beds exclusively for women.
- (2) Increased access to FUNDING for women scientists.
- (3) Promoting role models such as Kalpana Chawla and Sunita Williams.

19. Discuss the significance of the recent amendments made in the NIA act and the UAPA Act for countering terrorism. (250 words) 15

आतंकवाद का मुकाबला करने हेतु NIA अधिनियम और UAPA अधिनियम में हाल ही में किए गए संशोधनों के महत्व की विवेचना कीजिए।

NIA is the premiere investigation agency of the Central Government set up in the aftermath of 26/11 attacks. It can take suo moto cognisance of terrorist attacks.

UAPA prevents unlawful activities that are a threat to integrity & sovereignty of India.

AMENDMENTS

NIA ACT	UAPA Act
(1) NIA act can now take cognisance of related offences like fake currency, money laundering etc. (2) given extra-territorial jurisdiction. (3) officers of rank of Inspector and above given	(1) Central government can designate <u>individual as terrorist</u> (2) strengthened this act by widening offences.

NIA act

powers to investigate.

- (4) for seizure of property, permission of DG of NIA sufficient as against previous requirement of State DG.

SIGNIFICANCE IN COUNTERING TERRORISM

- (1) Acts have been strengthened to take cognisance of related crimes such as counterfeit currency. This can break cartel between terrorism and organized crime.
- (2) Extra territorial jurisdiction of NIA can come handy in investigation of cases, given GLOBALISATION of terrorism. ex - FBI could prosecute David Headley because of this power.
- (3) Designation of Individuals as

terrorists can cause DETERRENCE.
It would have reduced time taken
for designating Masoor Azhar as
terrorist.

(4) Will reduce man power shortages in
NIA by allowing inspectors to
investigate.

Challenges in amendments :-

(1) Possibility of misuse as in
Haneef vs State of Kerala, Supreme
Court said that merely membership
of proscribed organisation does
not mean that individual is
terrorist.

(2) Draconian provisions.

An integrated approach to
terrorism is the need of the hour.

An Internal Security doctrine needs
to be laid down expeditiously.

20. The national security architecture needs to be robust enough to deal with present and evolving threats. Elaborating on the statement, discuss the recent steps taken for modernisation of the national security architecture.

(250 words) 15

वर्तमान और भावी (उभरते) खतरों से निपटने के लिए राष्ट्रीय सुरक्षा संरचना को पर्याप्त सुदृढ़ करने की आवश्यकता है। इस कथन का सविस्तार वर्णन करते हुए, राष्ट्रीय सुरक्षा संरचना के आधुनिकीकरण हेतु हाल ही में उठाए गए कदमों की विवेचना कीजिए।

National security ^{architecture} refers to the policies, procedures and institutions for safeguarding economic, and territorial sovereignty of a nation.

PRESENT THREATS :-

- (1) Internal security → (1) Naxal violence continues in 90 districts as per MHA.
- (2) Increased polarisation in society leading to mob violence.
- (3) Smuggling of drugs, counterfeit currency and weapons from porous borders of the North East.
- (4) Secessionist violence in North East and Kashmir fuelled by external

state elements .

External security :-

- (1) Terrorist infiltration fuelled by deep state of Pakistan .
- (2) increasing military assertiveness of China (CPEC, String of pearls) . It is also undergoing modernisation of PLA .
- (3) Khalistan referendum and risks of radicalisation using the Kartagru corridor .

EVOLVING THREATS :-

- (1) Cyber security (Cyber warfare → Recently, Wannacry, Petya and DDOS affected India's internal security .
- (2) Weaponisation of space by USA launching a space command .
- (3) Terr Regime change in Afghanistan with Taliban's take over .
- (4) Lone-wolf attacks on the rise .

(5) Steps for Modernisation :-

Institutional changes :-

- (1) Instituting Chief of Defence staff for synergistic working of armed forces.
- (2) Strategic Policy group for advising the National Security Council.
- (3) Restructuring armed forces headquarters by sending young officers on field.

LEGISLATIVE Changes :-

- (1) Updating and strengthening of NIA and UAPA acts giving more power to its officers.
 - (1) Defence upgradation and modernisation by acquiring S-400 missiles as well as Anti satellite warfare capabilities. (MISSION Shashakt)
- Further, revamp can be done by implementing Madhukar Gupta Committee recommendations.