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NEXT IAS Roll No.: MT23FLTPN007 Date of Examination : 23/7/23

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

Test Code : TC037 Program : FLT ☐ FLT+ ☑

MAIN TEST SERIES 2023
(FULL LENGTH TEST-3)

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.....

SUBJECT/PAPER
GENERAL STUDIES

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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

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MACRO COMMENTS

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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

The basic purpose of a progressive and proportionate tax system is to enable economic equality through wealth redistribution.

In this context windfall tax acts as major check on excessive wealth generation.

What is windfall tax?

- It is the tax levied on companies that generate excessive surplus profits due to a ~~decrease~~ sudden increase in prices.

For eg: This is mainly used in case of oil companies which may have purchased oil at a very low cost but sell at a high price.

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Advantages:

Yes, it effectively redistributes wealth:

1) companies are prevented from charging a very high price.
2) Acts as a cushion against consumer prices based on market price system.
3) Enables stability in macroeconomy
4) Provides investment for schemes

Challenges: No, it does not help in equality:

1) companies may still charge high price.
2) Distorts market price and competition in economy.
3) may discourage investment in sector.

Market fluctuations require government intervention in form of windfall tax. Moreover, Gandhian concept of trusteeship justifies the imposition of windfall tax.

Candid
write o

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

Under the new MPC regime in 2015 the RBI was made responsible for inflation targetting and regular reporting of same.

Features :

1. Government & RBI agreement in 2015
2. Composition of MPC with representation of government & RBI
3. Inflation kept 2-4%.
4. Any deviation should be explained with course correction

Success :

1. Accountability fixed in regulation

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(2) Ensures a legal mandate on RBI

(3) Enables course correction as a responsibility.

Recently the pandemic led to a high CPI of around 6% where effective & timely actions by RBI helped control it.

Challenges:

(1) Limitations of monetary policy in inflation (lack of effective tools)

(2) Non-transmission of monetary policy by banks.

(3) Can lead to tussles between government & RBI

(4) Excessive inflation due to food prices.

(5) Structural issues as cause of inflation.

While montary policy can be one of the methods to tame inflation, structural measures are needed for its effectiveness.

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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

The 'International year of millets' designation given to 2023 by the United Nations points to its key role in SDGs.

India through its efforts has enabled millets — the ancient food heritage of India to be a new tool for food security & SDGs.

Potential :

Sustainable agriculture:

— efficient use of resources in face of climate change.

Millets Role:

1) Drought resistant:
— low use of water

2) low cropping period —
— as compared to wheat & rice

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- this enables crop diversity.

3) Rainfed agriculture economy:
With 70% agriculture in India being rainfed, millets are a major help.

Food security : avail — access, affordable & available to all.

↓

Millets role:

1) — Multivitamin
2) more fibre content
— good for gut health.
3) keeps full for longer time
∴ lower need of food resources.

Challenges:

1. Low yields.
2. Seeds availability
3. Low awareness & cropping pattern ~~dist~~ change resistance.
4. Traditional diets based on wheat & rice.
5. Image of millets & poor's grain.

However efforts by government like Parliament lunch of millets, hybrid ~~research~~ variety by PAU can go a long way.

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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

The Jal Jeevan Mission (JJM) aims to provide ~~it~~ running tap water supply for drinking in rural households by 2024.

Challenges of regional disparity:

1. Reliance on different water sources.
2. Lack of supply infrastructure
3. Low water quality as per region.
4. High water charges.
5. Misuse by private sector & black market

Potential of JJM: Available:

1. Ensure free running tap water

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(2) Quality of water ensured
(3) Efficient use of sources.

Access:
(1) To dry areas of country eg: Vidarbha.
(2) redistribution from surplus areas possible.
(3) Ensures access to weaker social groups like SC, STs etc.

Impediments:
(1) Supply for dry regions.
(2) Governance issues in implementation
(3) Ensuring sustainable running water at all times
(4) challenge in ensuring tap water infrastructure in all households.

Way forward —
outcome oriented tracking & monitoring of schemes can help in the aim of water equity in India.

Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते है? 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

The current biggest impediment in energy transition from fossil fuels to renewable energy sector is to ensure ~~battery~~ storage systems for energy. In this context BESS provides solutions.

BESS :

— An energy storage system based on rechargable battery

— It can come in portable forms also for domestic users.

— The essential component is lithium & use of rare earth metals in composition.

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Applications:

1. e-vehicles: — rely on battery storage for running.
2. Battery swapping policy — — due to lack of charging infrastructure
3. Renewable energy storage — — solar & wind suffer from intermittent supply issues. — low grid capacity for renewable energy sector.

How it can revolutionise:

1) easier adoption of renewable energy for domestic user
2) Alternative for lack of grid infrastructure & full supply issues.

Challenge & way forward:

— Battery manufacturing (rare earth metals availability) — safety of batteries (cases of explosion) — capacity limits

There needs to be addressed for a concerted ~~the~~ supply

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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

The Gaganyaan mission of ISRO aims to be India's first human based space exploration mission.

Developments:

1. Testing of various components is underway
2. Use of latest technologies at a much lower cost
3. Training of Indian astronauts.
4. Designing of curated space suits etc.

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Challenges:

1. Lack of premium technology base for new project.
2. Expensive components & materials
3. Lack of adequate technology and research was needed for cheaper products
4. Adequate training & skilling
5. Funding challenges.

Benefits for society:

1. Motivation for youth for space research & science
2. opportunities as space astronauts
3. Motivation & encouragement to science & space education & awareness in schools.
4. Motivation to women for space research.

Hence the mission has scientific & social benefits.

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

Green hydrogens presents a sustainable option as a renewable energy source for energy transition.

National Green H_2 Mission :

- to develop infrastructure
- research
- funding
- assist in adoption of technology in different sectors.

It is a silver bullet —

↳ transition to ~~shift~~ new renewable energy sources to move from fossils —

Green H_2 can be a bullet —

Candidates must not write on this margin

(1) Reliable in supply (not intermittent — solar & ~~hydro~~ wind)

(2) Carbon less —
— purely based on green energy with no foot print

(3) Extremely efficient.
— H_2 has huge energy potential.

(4) Easily available.
— ensures equity in access.

Challenges — not a silver bullet.

(1) costly technology .. affordability issues.

(2) Storage & transport of H_2 is a challenge.

(3) Issues in integration with other sources.

(4) Requires storage systems which presents more costs.

Hence while Green H_2 presents good opportunities, challenges have to be addressed by adequate investments & research.

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Q.8 हाल ही में जोशीमट, 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

Joshimath presented a case of land subsidence in Himalayan city due to various stresses on land use.

Impacts included destruction of houses and possibility of imminent landslides & earthquakes in these areas.

Key lessons:

Disaster management:

1. Preventive approach to hazards & disasters
2. Vulnerability mapping in Himalayan areas.
3. Early warning system for disasters

Candidates must not write on this margin

(4) Use of data and mapping to analyse threats.

Environment conservation:

(1) sustainable land use planning

(2) Adequate Environment Impact assessment for hydro & road projects with analysis of impact on land stability.

(3) Preventing excessive density in himalyan areas of projects & population.

While it is still unclear what was the cause of disaster, it is certain that new threats are possible in various areas and new approaches of quick response & hazard mapping are needed.

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

Candidates write on th

Movements based on seperatism present an internal security threat to India.

Recent threats:

— Khalistan issue developed as a movement to demand separate state based on religious grounds in Northern state of Punjab

— It has received support from various global actors including nation states

— Recent issue caused challenges in:

— tracking of the

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leader of issues
- creation of new leaders in the movement
- evidences of external support
- issues with international relations of India - Canada

Measures:

(1) Tracking & intelligence gathering of new leadership of it.
(2) Global cooperation by nation states.
(3) Better security at borders.
(4) Use of soft approaches to prevent ideology to spread among people

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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

Drone operations can present a threat to border security in India — which is evident from recent cases in western border where drones carrying arms and drones crossing border were found.

Why challenging?

(1) Anonymity:

- anyone can operate without disclosing identity
- the operater can be at any location but still fulfil objectives
- can escape radars

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(2) Fast:

- can be used for Intelligence gathering
- Can be used to drop arms and bombs.
- can easily fly over civilian locations without being tracked.

Tackle :

(1) Infrastructure to prevent entry
(2) Technology to track & respond
(3) Awareness among people.

Q.11 विद्युत संशोधन विधेयक, 2022 उपभोक्ताओं, डिस्कॉम के साथ-साथ पर्यावरण के लिए कई लाभ प्रस्तुत करता है। संक्षेप में 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 for consumers, DISCOMs as well as the environment. Elaborate. Also, list out its shortcomings and suggest some measures to overcome them.

(Answer in 250 words) 15 Marks

The electricity sector in India has long suffered from issues of delays in PPAs, cross subsidy and tariff related issues.

With India moving towards energy transition, the Electricity Amendment bill 2022 is significant.

Main features:

1. Flexibility for PPAs
2. Smart grid & metering
3. Uniformity in tariff determinants
4. Obligations of Renewable energy
5. Inter-state grid transmission used

Advantages:

(I) Consumers:

1) Reduction in bills —
— better transmission & supply :- reduced costs

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2) Reliable supply –
– due to inter-state grid transmission made easy.

3) Better access to remote customers.

II) Discoms:

1) flexibility in PPA – help reduced NPAs

2) lower costs – due to better grid access.

III) Environment:

1) Renewable energy promotion
∴ India can meet its target of 50% ~~electricity~~ energy by renewables by 2030.

2) Reduced consumption & wasteful production –
– due to smart grid & metering

Hence lower carbon footprint

Shortcomings

1) Open Access – still an issue

unresolved
— creates high costs for commercial users.

(2) Federalism — states have objected due to taking independence on tariff fixation

(3) Renewable energy transmisson — — may need more grid infrastructure & storage infrastructure

(4) Mandatory purchasing of renewable energy may cause hardships to DISCOMS.

Measures:

(1) Allow for some flexibility to states for tariff
(2) Industry & other stakeholder consultation + pilot on open access.
(3) Storage infrastructure for renewable
(4) Consumer awareness.

The bill will need more stakeholder consultation to balance out concerns This can lead to 'energy for all' dream.

Candidates must not write on this margin

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

The SEBI was created as a statutory body under SEBI Act 1992 for regulation of financial markets in India in the post liberalisation era.

Role in Finance Market

- 1) registration of intermediaries
- 2) mandatory disclosures
- 3) Regulation of stock exchange.

Claim settlements

Regulation of Mergers & Aquisitions

Safeguarding investor interest

- Investor awareness initiatives
- Clause 49 of listing agreement.
- disclosure of companies ensured.

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Challenges:

① Opaque process by intermediaries
- Eg. recent malpractices alleged in National Stock exchange like co-location & consultation by third parties.

② Issues in corporate governance
- Even when disclosures are made by listed companies, the internal governance remains opaque
- due to lack of healthy audit practices.

③ Low consumer awareness:
- with financial inclusion there is more investment but low awareness.

eg: uninformed investment in mutual funds.

④ Independent research by International organisations:

Candidates must not write on this margin

- eg: recent findings against Indian company by Hindenberg
- this decreases investor sentiment ~~and~~

(5) Reduced trust:
- due to recent corporate governance issues. SEBI's governance came in question

Reforms:

(1) Better regulation & monitoring of stock exchanges & brokers.

(2) Faster resolution of cases by Tribunal

(3) consumer awareness by digital platforms.

(4) Regular reportings & findings on TBTF corporate entities. by suo-motu analysis.

Financial markets form a key pillar in investment needed for ~~A~~ India's $5 trillion economy dream. SEBI's role is critical in fair & competitive functioning.

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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

The agricultural sector contributes 17% to GDP but employs around 40% of Indian population.

In this context a better growth of sector is critical for economic well being.

Constraints:

(I) **In Production:**

1) low quality of seeds.
2) Excessive use of fertiliser & water (eg: Punjab & Haryana)
3) Reduced quality of soil
4) Low crop diversity.
5) low mechanisation
6) Predominance of rainfed agriculture (70%)
7) Ignorance of allied sectors

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8) low investment by farmers ; - high debt
- lack of insurance

(II) In Supply side:

1) Poor infrastructure in - storage and transport

2) Low prices
- due to intermediaries in markets.

3) Inadequate ~~tie ups~~ forward linkages - food processing

Role of Technology:

(I) In Production:

1) Quality seeds → increase yields
eg: hybrid in millet by PAU recently.

2) Efficiency in fertiliser & water use

eg: - use of fertigation & drones
- neem coated fertiliser.

3) Soil quality analysis:
- eg ~~bgc~~ soil health cards with required amount of nutrients.
- Artificial intelligence

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4) Efficient irrigation practices
eg: drip irrigation in dry areas

5) Mixed farming practices:
eg:- aquaculture, hydroponics.

6) Tech-based inputs -
using data analysis & Artificial intelligence (AI)
- this can reduce inputs & bring efficiency

(II) Supply side:

1) Connecting markets -
eg: e-Nam, Agmarknet portals

2) Better storage infrastructure technology - eg silos (Shanta Kumar committee)

3) Use of data & AI in
- supply chain linkages

Technology can also be used for increased farmer awareness & outreach.

Therefore technology can provide solutions for a resurgent agriculture sector in India bringing welfare to 80% of small & marginal farmers.

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

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Around 30% of land in India used for agriculture is irrigated. However, uninformed and excessive irrigation practices have led to soil quality depletion and wasteful use of resources.

With sustainable agriculture as a goal of 'Evergreen Revolution' along with increasing irrigation, sustainability & equity are important aims.

Impact of irrigation:

(I) **Natural resources: excessive use:**

(1) **Groundwater depletion:**

- Agriculture is the largest consumer of groundwater.

eg: Punjab – Studies indicate critical level of aquifers depletion.

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(2) Excessive use of energy on farms
- one of the top consumers of electricity in India due to motor pumps usage

(II) On environment:

(1) Depleting quality of groundwater -
eg: arsenic as major contaminant

(2) Depleting soil quality:
- soil ~~capillarity~~ salinity due to capillary action

(3) Unsustainable cropping pattern -
irrigation has led to priority to water-intensive crops & monocropping

eg: rice in Punjab.
Sugarcane in U.P.

Measures:

(I) To ensure sustainability:

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① Use of technology — (increase efficiency)
eg: drip-irrigation

② Invest in agriculture than giving subsidies
- water subsidy by state govt. is a major issue.

③ Circular water economy in farms — eg: use of treated waste water than groundwater

④ Crop diversity promotion:
eg: using millets that need less water.

⑤ Farmer awareness.

II Ensure Equity: Access

① Use of technology for unirrigated areas.

② Agriculture extension facilities for small & marginal farmers.

In the face of climate change, adaptation & mitigation is critical for agricultural sectors where resource efficiency is extremely low. Hence a focus on long term water use efficiency is critical.

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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 recent launch of Chandrayaan-3 point to its resilient initiation in challenging areas of space by efforts of Dr. Vikram Sarabhai soon after independence, on a similar note, Dr. H.J. Bhabha's initial efforts helped India progress gradually to developing atomic energy for energy & security needs.

Strategic benefits :

(1) **Atomic energy**

- Dr. Bhabha was the founder of BARC (later named on him)

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- The challenging field of atomic energy after independence was taken up due to his resilient efforts and ~~by~~ persuasion of India's then leadership.

→ This helped in:

- Developing nuclear tests ~~to~~ later
- using nuclear energy for nuclear power plants
- creating adequate deterrance from nuclear neighbours & others.
- helped India gain respect in sci & technology research.

(II) ~~III~~ Space energy:

- Even ~~a~~ when there was lack of funding, he carried India's first rockets on a bicycle

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- foundation of INCOSPAR
- strategic benefits:
  i) satellites for industrial, ~~domestic~~ and security needs.
  ii) space exploration missions.
  iii) launching services for other countries

this gave India —
- global power in space sector.
- contribution in global space research.
- commercial advantages like launching service.
- respect in science & technology
- deterrance for space based security infrastructure challenges

Hence both scientists laid foundation for critical technologies for India

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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

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The technology of Generative AI has attempted to imitate one of the greatest potential of human psyche — Creativity.

This certainly gives hope in field of innovations but raises serious questions ~~on~~ in social context — recent protests in US indicate

Potential in Innovation:

(1) Efficiency in research:
- less time taken
- curated and exact research answers are available

(2) Creation of new art forms:

eg: - digital paintings.
- hologram technology.

(3) Industrial uses:
- Designs based as per needs.

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(4) Management potential :
— use in planning and assistance

Social challenges :

(1) Loss of employment :
— already struggling artists, musicians & performers face further threat.
eg: hollywood actors protests in US.

(2) Copyright challenge :
— plagiarism increase in research projects.

(3) Substandard Quality :
— some generative AI's may not give adequate responses.

(4) Challenge to creativity :
— Human creativity has led to rich cultural heritage

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& is one of the unique characteristic of species.
- Studies indicate AI doing this can lead to a reduced creative potential in new generations.

(5) Increase in technology dependance
- creates social & ethical issues.

(6) Lack of equity in access - Digital divide of infrastructure & literacy.

(7) Challenges in education:
- excessive use by students can hamper learning outcomes.

Read ahead:

Generative AI can be presented as being a disruptive invention if there is regulation on its usage.
- Review of copyright laws, labour law reforms and restrictions in use in research through better plagiarism tools these can help show light ahead.

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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

Mitigation of impacts from sea level rise due to climate change include a critical pillar of mangrove sustainability and preservation.

Mangrove Alliance for Climate

Purpose — launched at COP 27 to build a global consensus on mangroves.

— first such initiative on a large scale.

— call for inputs from multiple stakeholders.

— best practices and research ~~share~~ sharing on mangrove preservation.

— investments for new research & methods

Candidates must not write on this margin

Importance of mangroves:

The salt tolerant mangrove ecosystem occurs in coastal areas and harbours a unique biodiversity.

eg: Pneumatophores, stilt roots, Kharai camel.

Context of tropical nations:

Threats due to climate change (cyclones & sea level rise)

1) Sea level rise and sinking cities.

eg: Jakarta Indonesia's capital.

2) Most tropical countries have poor economic situation

3) Small island countries fall in tropical areas.



Fig: Tropical countries across equator

Hence natural biodiversity can be the best mitigation approach:

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how mangroves help them:

1. Natural absorbers like a sponge: prevent sea level rise.
2. Mitigate storm surge impacts
3. Reduce impact of cyclones
4. Cheap and sustainable solutions for SIDS
5. Biodiversity maintains ecological functions of areas.
6. Greater effects on tropical countries

Mangroves provide the nature based solutions (NBS) to climate change which are important for vulnerable tropical countries.

However cyclones & storms destroying mangroves needs interventions for strengthening them to act as nature's natural buffers to humanity.

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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

The Coalition for Disaster Resilient Infrastructure (CDRI) was a global initiative by India during Paris climate agreement to strengthen collaboration for developing infrastructure to meet resilience.

CDRI objectives
- → research collaboration
- → sharing best practices.
- → exploring funding opportunities
- → setting standards.

Robustness to Disaster Management

(1) Enables sharing of global best practices. — accordingly India can adopt

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(2) Infrastructure as Key pillar. —
— this can help mitigate impact

(3) Existing Disaster management lacks standards and uniformity for infrastructure

(4) Emphasis on reducing vulnerability
Hence prevents hazard from becoming disaster

(5) Involves multiple stakeholder role in disaster

(6) Bottom up approach for communities

Need for new strategy in India

(1) Multiple vulnerability factors in India:
eg:— earthquakes in north & cyclones in south.

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Infrastructure can be a common approach here.

(2) Disparity in Disaster resilient infrastructure
- no uniform standards.
- reliance on temporary structures

(3) Lack of new infrastructure resilient to infrastructure

(4) Increased vulnerability due to population
- high density in seismic zone areas.
- local communities & high density in coastal areas and river flood plains.

(5) Increased events due to climate changes: eg: cyclones

(6) Urban areas specific flood infrastructure eg: Delhi floods

(7) Lack of preventive approach in Disaster management framework presently.

Interventions in infrastructure can help in both prevention & rehabilitation in disasters.

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Q.19 महत्वपूर्ण 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

Use of cyber security threats by state & non-state actors have presented cyber threats as a national security issue for India and other countries globally.

Ransommare attacks consist of asking for ransom after taking control of digital infrastructure.

Key factors :

① Use of crypto currency —
— crypto mining ~~requires~~ and crypto investments have increased demand.
— cyber ransommare threats are a key consequence.

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(2) Reliance on digital infrastructure —

- huge role in new digital economy where state & private actors rely

(3) Ability to create massive impacts —

- social damage can result
- this increases chances of ransomwares.

eg 1: health infrastructure like AIIMS if impacted can create shocks in entire country.

eg 2: financial markets globally connected digitally.

Impact on sectors :

(1) Critical infrastructure :

i) Health infrastructure
- connected digitally.
- reliance on digitally run medical equipments

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ii) Financial infrastructure.
- can bring markets to standstill
- cause shocks in global economy due to coupling

iii) Security infrastructure.
- reliance on AI and drones.
- Sensitive government buildings & places.

iv) Transport sector (eg: airways)

(2) Private sector:

i) Digital business operations

ii) financial market transactions.

iii) MNC operations

Ransomware requires stronger policies & measures like —
- cyber security systems
- awareness.
- global tracking & cooperation

These can lead to better security.

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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

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 requires a holistic approach to coastal & terrestrial security.

This is not only due to adversarial neighbours of India but also due to new threats like AI, drones, robots which provide less time to respond & may present multiple threats at same time.

Coordination & cooperation:

(1) Theatre commands:
- build on concept of single command system for security agencies placed in different regions (western, eastern theatre)

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(2) Coordination during training.
— involving multiple attachments and acustomisation of practices.

(3) Coordinated security exercises —
— enables practicing & exercise of actual threat in coordinated way.

(4) Infrastructure for data sharing, & collaboration.
— enable better coordination of security threats & timely action.

(5) CDS:
— the post has been made with objective for a collaborative approach to security system.

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- further focus to develop understanding between agencies.

Effective & efficient border security relies on security agencies for —

- timely response
- adequate response
- sufficient infrastructure.
- intelligence & tracking of further security threats.

A collaborative approach can prevent new challenges presented by western & eastern neighbours of India in all territorial regions.