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GENERAL STUDIES (TEST CODE : 1840)

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Center	Online	Date	27.08.2022

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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17	15	
18	15	
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. 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)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI** इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. 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।
6. Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. 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. While fixed-term employment offers an ingenious way to address specific issues faced by both employers and employees, there are also some concerns associated with it. Discuss in the context of India.

(150 words) 10

हालांकि, नियत अवधि का रोजगार (फिक्स्ड टर्म एम्प्लॉयमेंट) नियोक्ताओं और कर्मचारियों दोनों के द्वारा सामना किए जाने वाले विशिष्ट मुद्दों को हल करने का एक सरल तरीका प्रदान करता है, लेकिन इसके साथ कुछ चिंताएं भी जुड़ी हुई हैं। भारत के संदर्भ में चर्चा कीजिए।

According to Periodic Labour Force Survey, only 10-11% of Indians are employed in fixed-term employment. This presents a situation of thrift towards gig economy.

Fixed term employment where employees and employers enter into an agreement for specific period (unless certain extreme conditions arise) of employment. It address specific issues of employers and employees as below -

Employers → Security of labour force

→ Secure human capital

→ Less prone to labour market dynamics

Employees → Get security of income

→ Immune from spontaneous firing

→ Independence of tenure of job regardless of company's performance.

But fixed term employment also generate some concerns

- Burden of social security and welfare benefits
- Burden on ex-employer regarding huge salary load
- Frequent strikes, protests by the fixed term employees
- Promote rigidity and company forced to keep degraded human capital too.
- Absence of fear of firing affect the quality of performance too.

Thus, fixed term employment, though having concerns, yet is essential for overall development of workers. Concerns need to be ~~built~~ ^{relaxed} by cooperation and addressed

2. An efficient logistics sector with a focus on warehousing is pivotal to the success of the Bharatmala Pariyojana. Discuss. (150 words) 10
वेयरहाउसिंग पर केंद्रित एक कुशल लॉजिस्टिक्स क्षेत्रक भारतमाला परियोजना की सफलता के लिए महत्वपूर्ण है। विवेचना कीजिए।

Bharatmala pariyojana was an umbrella scheme launched by government of India to connect here to unconnected regions and promote infrastructure development like railways, highways, bridges etc. It is a step to realise ₹5 trillion economy goal.

Bharatmala pariyojana focus on number of areas but efficient logistics sector and warehousing are pivotal.

→ At present, only 10% logistics sector is organized and thus sector shows huge fragmentation.

Its effectiveness implies

- Faster movement of goods
- Swift movement of passengers
- Save of time as well as resources

- Better connection of hitherto unconnected regions
- Promotion of ease of doing business
- Warehousing is regulated by warehouse development and regulatory authority act 2007.
- Its effectiveness ensures
 - Reduction in wastage of agri products (currently 20-25%)
 - Promote scientific storage of agri products
 - Help to meet supply and demand shocks
 - Reduce import dependence and promote self-reliance.

Bharatmala pariyojana is essence to realise UNSDGs and thus right steps are most demanding.

3. What do you understand by the term 'Irrigation scheduling'? Bringing out the advantages provided by it, discuss the difficulties faced in applying it on a farm level.

(150 words) 10

'रिचार्ज निश्रिण (इरिगेशन शेड्यूलिंग)' पद से आप क्या समझते हैं? इसके द्वारा उपलब्ध कराये गए लाभों का वर्णन करते हुए, इसे खेत स्तर पर लागू करने के समझ आने वाली कठिनाइयों की विवेचना कीजिए।

India has about 46% of total cropped area under irrigation. Irrigation Scheduling refers to adjustment of schedule of irrigation as per the needs of crop and specific growth period. It is a step to sustainable water use.

Today India is 14th out of 17 most water stressed nations as per water resource atlas report. In this light, irrigation scheduling would have following advantages

- would prevent wastage of water
- Prevent excessive surface run-off
- promote growth of crops
- Maintain adequate soil moisture thereby

- preventing water logging and salinity
- Save costs of irrigation consumption of electricity also.
- Reduces water footprint significantly

But though concept is wonderful but its application is difficult at farm level because

- Farmers may not be aware enough to know the best time to irrigate fields
- Best time of irrigation depend on host of other factors like temperature, precipitation etc
- Freebies → free electricity, subsidised fertilizers etc also make resources to be used recklessly than caution.

Irrigation scheduling will help to realise main goals of water conservation and promotion of agriculture and it needs to be promoted.

4. While the Pradhan Mantri Fasal Bima Yojana was touted as the largest crop insurance scheme globally in terms of farmer participation, various concerns have arisen since its implementation. Discuss. (150 words) 10

यद्यपि, प्रधानमंत्री फसल बीमा योजना को किसानों की भागीदारी के संदर्भ में वैश्विक स्तर पर सबसे बड़ी फसल बीमा योजना बताया गया था, तथापि इसके कार्यान्वयन के बाद कई चिंताएं उत्पन्न हुई हैं। चर्चा कीजिए।

With about 45% population dependent on agriculture, farmers are the largest target groups for support of government.

Earlier crop insurance was provided by schemes like National Agriculture Insurance Scheme but they had concerns of limited reach and were replaced by Pradhan Mantri Fasal Bima Yojana (PMFBY)

It is the largest insurance scheme globally with 20 million farmers registered.

↳ It gives security to crop failure

↳ Its' premium rates include 1.5% for rabi, 2% for kharif and 5% for zaid.

↳ It is implemented parallel to

'Restructured weather Based crop insurance

Scheme'.

But various concerns are associated with it

- Duty of identification of farmers is with states - some like West Bengal, Punjab hesitant in it.
- Farmers are bound to pay some registration fee
- Coverage not universal and out of 120 million, only 20 million are covered
- Delays in release of cash for the farmers disposal.
- Bureaucratic hassles, orientation to wealthy farmers etc are other concerns.

Schemes like Mukhya Mantri Kisan Sahaya Yojana of Gujarat and likewise with universal, open registration are key to address concerns.

5. The Stockholm Conference commenced the contemporary "environmental era", which brought a paradigm shift in the environmental governance and set a tone for multi-lateral environmental regime. Discuss. (150 words) 10
- स्टॉकहोम कॉन्फ्रेंस ने समकालीन "पर्यावरण युग" की शुरुआत की, जो पर्यावरणीय प्रशासन में एक आदर्श बदलाव लाया और उमने बहु-आयामी पर्यावरणीय व्यवस्था के लिए एक दिशा प्रदान की। विवेचना कीजिए।

Stockholm conference was held in 1972 and was first international conference to discuss about the subject of environment. Mrs Indira Gandhi represented India in this conference.

It is said to commence contemporary 'environmental era' with focus on environmental governance and multi-lateral environmental regime in the following ways

- Post 1972, all nations set up ministries of environment. In India, this occurred in 1985.
- Concept of Environmental Impact assessment was originated to see pre-hand effect of development on environment.

- India's Environmental protection act was also influenced by this conference.
- Conference led to series of multi-lateral forums like UNFCCC, Kyoto protocol, Paris agreement etc which were concerned with environmental rejuvenation.
- International organisations like International Solar alliance, BASICS etc too traced relation to Stockholm conference.
- Stockholm conference also introduced perception of development with nature and not against nature.

this Stockholm conference was a foundation on which Millennium development goals and UNSDGs rest.

6. The world has witnessed a huge surge in climate-induced disasters, which are largely driven by anthropogenic factors. In this context, analyse the role of early warning systems in mitigating the impact of the disasters.

(150 words) 10

विश्व में जलवायु-पेरित आपदाओं में अत्यधिक वृद्धि हुई है, जो बड़े पैमाने पर मानवजनित कारकों से पेरित है। इस संदर्भ में, आपदाओं के प्रभाव के शमन में पूर्व चेतावनी प्रणालियों की भूमिका का विश्लेषण कीजिए।

According to world bank, world witness disaster about double rate than in early 2000s and it account for GDP loss of 2-3% annually.

World has today witnessed a huge surge in climate-induced disaster like Floods in Guangzhou China, hurricanes in Cuba, forest fires in Australia, heat domes of North America etc. This is primarily driven by anthropogenic factors like global warming and climate change.

In addition, destruction of forests and wetlands, increased interference in pristine ecosystems and population

form are other associated reasons.

They annually lead to loss of huge property and lives. Thus early warning system is very important

→ will help to take steps before the setting of disaster (eg- rescue of people before fall out of Taluktae)

→ will also help to arrange accessories like medicines prior hand.

→ will also strengthen disaster response when disaster would hit.

→ In some cases, early warning can also prevent hazard to turn to disaster

Setting of telemetry stations, doppler radars, ocean buoys, satellites are all steps to enhance swift early warning system.

7. Critically examine the implications of leveraging technology in policing.

(150 words) 10

पुलिस व्यवस्था (पुलिसिंग) में प्रौद्योगिकी का लाभ उठाने के निहितार्थों का समालोचनात्मक परीक्षण कीजिए।

Police is the law-enforcing agency of the country. It is under the supreme command of respective state governments.

Policing today suffer from problems like workforce shortage (27%), long working hours, no holidays, frustration, evolving crimes etc. In this regard, technology use could be sighted

- It will help in swift management of crime (eg- Delhi police and internet)
- It would help to track criminals
eg- automated facial recognition system
- will help in swift communication among police personnel.
- will be a step to tackle police excesses

and police abuse

→ It will also speeden the evidence collection process (use of CCTV, Narco analysis etc)

But there are associated

concerns

- Concern of safety of devices (80 percent imported from China) - back window connection
- Issue of privacy violation (Narco analysis)
- Technology may give bias result
(not distinguish monozygotic by facial recognition)
- Illiteracy and technological gap among police personnel.

Technology no doubt will make policing more pro-people and it needs to be capitalised.

8. How far do you agree with the view that climate change poses a threat to international peace and security? (150 words) 10

आप इस विचार से कहीं तक सहमत हैं कि जलवायु परिवर्तन अंतर्राष्ट्रीय शांति और सुरक्षा के लिए खतरा है?

Incident of Bramble Cay Melomys extinction,
increase in sea level by 8 inches and
spread of malaria to temperate are all
evidences of climate change.

Climate change is said to
poses pose a threat to international
peace and security. This is because

- It would lead to misery of poor
countries at welfare of rich nations
- would promote greater health
and literacy inequalities
[eg - Subsaharan Africa v/s USA]
- would lead to more climate refugees
[eg - from regions around lake Tanganyika]

→ It would also promote blind ended games of who to take responsibility and to what extend.

Disputes regarding Great barrier reef deterioration and global contribution to it are example of such conflict.

But this may not be always true

→ All countries rushed to save Palau when it was drowning due to increased sea level

→ International forums like Paris agreement saw commitment and concern by all for collective peace and security.

As a way ahead, disputes to be kept aside and collective actions against climate change are only make-up steps to protect life and Earth.

9. What do you understand by a virtual private network (VPN)? Highlight its advantages and discuss the concerns posed by it. (150 words) 10

वर्चुअल प्राइवेट नेटवर्क (VPN) से आप क्या समझते हैं? इसके लाभों पर प्रकाश डालिए और इसमें उत्पन्न चिंताओं पर बर्चा कीजिए।

Virtual private network is the process of giving access to world wide route to land at a website to a customer. It promotes anonymity.

eg- Surfshark VPN.

Like any emerging technology,

VPN has number of advantages

- It gives anonymity to user.
- It helps user to hide his identity while online surfing.
- Certain sites which may be geographically tagged can also be accessed through VPN.
- VPN could be used under abnormal surveillance situation.

[Eg:- J&K people using VPN post article 370 revocation]

But VPN also have associated concerns

- It may be threat to sovereignty and national security
- It would be costly than conventional means
- Speed of service would be slowed down
- All websites may not be accessible to it.
- Issue of cyber warfare, terrorism, trafficking of humans and drugs etc are also associated

Thus VPNs are double edged sword. Recent legislature to control VPN is a step to balance sovereignty and safety of nation with rights of people and VPN providers.

10. The discovery of the Higgs Boson at the Large Hadron Collider in CERN completed 10 years recently. In this context, discuss the role played by CERN in overall scientific development. (150 words) 10

मर्न (CERN) स्थित लार्ज हैड्रॉन कोलाइडर में हिग्ग्स बोसोन की खोज को हाल ही में 10 वर्ष पूरे हो गए हैं। इस संदर्भ में, समग्र वैज्ञानिक विकास में मर्न द्वारा निभाई गई भूमिका पर चर्चा कीजिए।

Large hadron collider in CERN is the world's largest particle physics study centre. It is result of joint collaboration among France, USA, UK, Germany, EU etc.

10 years ago, Higgs Bosons were discovered at CERN. They are known as God particles considering their importance in early stage of evolution of universe.

The work was pioneered by Indian Scientist Satyendra Nath Bose.

In addition to this, CERN has played a vital role in overall scientific development as -

- It has helped to study and unveil secrets of universe
- CERN gave firm conclusions about existence of dark matter and dark energy
- CERN also conducted in-depth analysis of far-off galaxies and black holes.
- LIGO of USA, Kanagawa of Japan also received technological support from CERN
- CERN played a vital role in early research about plasma state and bose-einstein particles study.

Thus CERN, along with other institutions has played key role in expanding our scientific knowledge.

11. Highlighting the factors that affect the cropping pattern in India, discuss the need for modifying it in the context of the emerging agro-ecological concerns. (250 words) 15

भारत में फसल पैटर्न को प्रभावित करने वाले कारकों पर प्रकाश डालते हुए, उभरती कृषि-पारिस्थितिकी चिंताओं के संदर्भ में इसे संशोधित करने की आवश्यकता पर चर्चा कीजिए।

Cropping pattern refers to the system of cultivation of crops in an area. India with its unique geography shows greater diversity in cropping pattern.

While states like Punjab have expertise in wheat, Kerala leads in coconut and Rubber, Assam leads in Tea. All these show variable cropping patterns of country. There are many factors that affect it

→ Economic situation of farmers -
affordability to raw materials

→ Expertise of farmers in cultivation of some agricultural products.

- Climatic and geographical factors (like water availability in West Bengal)
- Social demand (India has more demand of cereals than fruits and vegetables)

Present day cropping patterns suffer from agro-ecological concerns like frequent droughts and floods, insect swarms, depletion of ground water level, increased incidents of pests attack etc. In this light, there is need to modify cropping pattern. This would ensure

- Climate smart agriculture is promoted
- Yield remains immune to climate fluctuations
- Help to reduce crop footprints (Rice and Methane as an example)

→ Also help to meet the demand of
relaxing pressure on stressed resources
(eg. shift to more than water thirsty
area in Punjab)

Initiatives like zero based natural farming,
PM Kisan annayli yojana etc are in line with
it.

Sustainable cropping pattern would be
key to realise UNSDG 02 and efforts
are demanding in this regard.

12. While the budgetary reforms undertaken by the Central government in recent years have led to better management of government expenditure, there are some issues that still need redressal. Discuss. (250 words) 15

जहाँ हाल के वर्षों में, केंद्र सरकार द्वारा किए गए बजटीय सुधारों के कारण सरकारी व्यय का बेहतर प्रबंधन संभव हुआ है, वहीं कुछ ऐसे भी मुद्दे विद्यमान हैं जिनका समाधान किया जाना अभी बाकी है। विवेचना कीजिए।

Budget is the annual financial statement which finds its reference in art 112 and 102 of the constitution. It is presented by finance minister in the floor of lower house of legislature,

Central government has undertaken a number of budgetary reforms to better manage budget and government expenditure. This include-

- Fusion of railway ~~revenue~~ budget and general budget
- Moving away with code of presenting budget on last day of february to first day
- Getting away with splitting of planned

and non-planned expenditure

- stress on performance budgeting and frequent reviews.

These reforms have led to better
management of expenditure as

- It is a step to revive railways which can invest ₹10,000 crore annually in it than allocating it to government.
- Its presentation on first day gave benefit of detailed discussion and reduction of financial crunch period post 31-march
- By not splitting expenditure, feeling of worthless expense done away with
- stress on performance led to greater accountability, transparency and efficacy.
- notion of top to bottom expenditure, periodic

reviews led to pro-people untried budget.

Provided this, still some issues need
to be addressed

- Prudent economic assumptions without
real time analysis.
- Lack of commitment to meet budgetary
deadlines
- Issue of huge unaccounted Non-budgetary
borrowings.
- Concern of breach of fiscal deficit under
FRBM act limit of 40% and 20% for
centre and states by 2024-25
- Authenticity of data collected one month
early (28 to 01 february)

Concerns need to be addressed
by taking review of OECD budgetary
framework as a way forward.

13. For India to create a 'future ready' railway system, it must harness innovation and resource efficiency. Discuss the statement in the context of the measures enlisted in the National Rail Plan 2030. (250 words) 15

भारत को 'यूचर रेडी' रेलवे प्रणाली के गठन हेतु, नवाचार और संसाधन दक्षता का उपयोग करना चाहिए। राष्ट्रीय रेल योजना 2030 में सूचीबद्ध उपायों के संदर्भ में इस कथन की विवेचना कीजिए।

With daily 13000 passengers and 9000 freight trains running on the track, Indian railways are fourth largest rail network of the world.

Indian railways suffer from outdated trains, technologies and huge operational costs. In this regard, National Rail Plan 2030 has been brought out to make railways future ready by harnessing innovation and resource efficiency. This is in context of following stated measures

→ It promotes private investment in the railway sector to boost innovation

- Mission attracts FDI to country to invest in rail sector
- It aims to convert all narrow gauges to broad gauges and meter gauges by 2030
- It has thought out initiative of promotion of clone train concept to meet growing demands.
- It promotes biotoilets in railways to ensure hygiene and environmental soundness.
- Mission promotes safety of passengers by removing all rail-road crossings
- Aims to de-stress already stressed 60% routes by laying down more routes.

- Mission supports setting of a dedicated railway authority to look into functioning and operability of railways.
- Mission also promotes setting up of more rail stations to connect hereto unconnected region.
- stress is also laid to enhance recruitment to Indian railway management services.

Recommendations of Anil Kakodkar and Bibek Debroy committee may be further considered to modernize this sector.

14. Discuss the significance of technology in the Indian agricultural sector. Also, state the challenges in realising its potential to improve agricultural efficiency and increase the income of the farmers. (250 words) 15

भारतीय कृषि क्षेत्र में प्रौद्योगिकी के महत्व पर चर्चा कीजिए। साथ ही, कृषि दक्षता में सुधार और किसानों की आय बढ़ाने की इसकी क्षमता का उपयोग करने में आने वाली चुनौतियों का भी उल्लेख कीजिए।

Indian agricultural sector employs 46% of the population and contribute to about 17% of GDP. Yet it is the most backward sector of economy.

Emerging technologies like weather app - Mausam, call centres, initiatives like e-choupal, modernised tools like threshers, harvesters, tractors etc are being used now-a-days in Indian agricultural sector. It has following significance -

- Increase the yield of crops (eg - GM seeds)
- Protect crops from weather extremes by early warning.

- Help farmer to earn best for his hardware (e-NAM)
- Make agricultural sector eco-friendly (ZBNF)
- Save time and labour cost (automatic harvesting)
- Also a means of giving awareness to farmers about latest agri techniques (eg - Farmopedia)

But realisation of this potential to improve agricultural efficiency and increase of income of farmers is associated with challenges like -

- Limited awareness of farmers to digital world.
- Lack of affordability (only 2 of 10 farmers have smart phones).

- Financial constrain in acquiring tractors, threshers etc.
- High cost of GM seeds, fertilizers etc
- Lesser number of extension workers (1880s)
also lead to limited knowledge of farmers
- Centres like soil health institutions not present in all villages.

Agricultural security is essential to realise UNSDG 1,2. Due steps by dialogue, debate, development are essential in this direction.

15. Despite the digital transformation in the Public Distribution System (PDS) in India, several challenges still remain. Elaborate. Also, suggest measures to address them. (250 words) 15

भारत में सार्वजनिक वितरण प्रणाली (PDS) में डिजिटल रूपांतरण के बावजूद, अभी भी अनेक चुनौतियां विद्यमान हैं। गतिस्तर वर्णन कीजिए। साथ ही, इनके समाधान हेतु उपायों का सुझाव दीजिए।

Public distribution system (PDS) was started in 1960's to give affordable, quality grains to people to address the concern of poverty and hunger. It is step to address UNSDG 01, 02.

Very recently, PDS has been digitalised and this enable swift countrywide access to ration. But still several challenges remain

→ Problem of accessibility of fast internet especially in rural areas.

→ Lack of authentication due to mismatch of fingerprints especially in manual

workers led to deprivation of nation.

- Technical knowledge lacunae to distribution agents
- Concern of fake accounts, duplicacy etc still remains.
- Grain theft during transportation and storage still persistent.
- Man power shortage in India.

To address these concerns,

following suggestions are there.

- Accessibility can be addressed by promotion of programmes like Cybergram, wifi hotspots etc
- Fingerprint mismatch may be overcome by using Iris scans or facial recognition as a substitute

- Technological drive like Digital Saksham pyama to create digitally equipped manpower.
- Technological awareness to distributors by organising literacy drives.
- Concern of fake accounts to be addressed by aadhar authentication of all beneficiaries.
- Checking grain theft through use of GPS technology.

PDS is a way to realise right to food under article 21 and above suggestions may be supplemented with Shantha Kumar committee recommendations.

16. Discuss the various concerns that exist with regard to fuel efficiency regulations for vehicles in India. Also, suggest the measures that can be taken in this regard. (250 words) 15

भारत में वाहनों के लिए ईंधन दक्षता विनियमों के संबंध में विद्यमान विभिन्न चिंताओं पर चर्चा कीजिए। साथ ही, इस संदर्भ में किए जा सकने वाले उपायों का भी सुझाव दीजिए।

Fuel efficiency is related to the amount of energy supplied upon complete combustion of given quantity of fuel. It is related to calorific value of fuel.

Current fuel efficiency regulations in India include blending limit of 20% for petrol and 10% for diesel and shift from BS IV to BS VI from 2020.

Such regulations are associated with concerns like -

→ Lack of dedicated authority to oversight and over-review the implementation of fuel-efficiency regulations.

→ Standards very lax and no match to

globally accepted level.

→ Faulty and outdated methods of detecting and checking fuel efficiency standard.

→ Haphazard notification of regulations without consultation with stakeholders - be it people or industries

→ no incentives to accept and update existing technologies to meet fuel efficiency requirements.

To address these concerns, following measures may be taken

→ Set up a dedicated body under Ministry of Environment to see regulation and its implementation.

→ Update standards as per WHO's latest

air quality levels.

- update checking facility by technological import
- Thorough consultation with all stakeholders is the key.
- Setting up a grievance redressal body to address concerns of industries and people regarding updated fuel efficiency regulations.

With energy sector being largest contributor of green house gases, these norms need to be harmonised in line of clean and green India.

17. Urban fire is becoming a serious cause of concern in Indian cities. In this context, highlight the major causes behind urban fires in India. What steps can be taken to build robust fire resilience in Indian cities? (250 words) 15

शहरी आग (अर्बन फायर) भारतीय शहरों में चिंता का एक गंभीर कारण बनती जा रही है। इस संदर्भ में, भारत में शहरी आग के प्रमुख कारणों पर प्रकाश डालिए। भारतीय शहरों में मजबूत अग्नि रोकथाम क्षमता के निर्माण हेतु क्या कदम उठाए जा सकते हैं?

Urban fires refer to outbreak of fire events in urban buildings, infrastructure units etc. It has emerged as a novel disaster today.

Incidents of fire at housing complex in Anaj mandi of Delhi, Lakshmi nagar fires etc indicate growing threat of urban fires. This lead to huge toll of live, destruction of property, contributing to environmental pollution etc.

They are becoming a cause of concern in Indian cities due to

* High population density of cities

- Frequent violation of building codes in India
- Infrequent building audits in country.

Causes behind urban fires

- Non-obedience to building codes
- Conversion of residential complexes to commercial units
- Reckless attitude and no proper safety audits
- Lack of awareness among people as well as labourers
- Old wires, congested street poles prone to lightening and short-circuit are other reasons.

Steps that can be taken

- Strict implementation of Building Codes of BIS.

- Mandatory NOC for each building -
Whether residential or commercial from
municipal authority
- Surprise visits, inspections to be
promoted.
- Hefty fines and 30 days jail period
for violators of norms as a deterrence.
- Mock drills and safety messages to
the public
- Periodic renewal of old wires to reduce
short circuit incidents.

Considering the fact that by
2030, 42% of population would reside in
urban areas, urban fire control would
be urgent step to meet safety and
growth of country.

18. Drones in border areas present a serious threat for border management in India. Elaborate. Also, discuss the different measures taken to regulate the use of drones in India. (250 words) 15

सीमावर्ती क्षेत्रों में ड्रोन, भारत में सीमा प्रबंधन के मामले में एक गंभीर खतरा उत्पन्न करते हैं। सविस्तर वर्णन कीजिए। साथ ही, भारत में ड्रोन के उपयोग को विनियमित करने के लिए किए गए विभिन्न उपायों पर चर्चा कीजिए।

Drones are unmanned aerial vehicles which are controlled by a remote agency secretly or for purpose like goods delivery, entertainment etc. In India, they are regulated by Ministry of Civil Aviation.

Incident of drone dropping heroin on Jammu border presents an example of how drone can be a serious threat for border management in India.

This is because

- They can be used to deliver drugs and promote extremism
- They can be used to deliver weapons
- They can be used to deliver fake currency.

- They may also be used for surveillance by enemy nation
- Occasionally, they may be used for warfare also
(Drone attack at Indian airforce base at Jammu)

Considering the emerging threat of drone warfare, Indian government has brought following measures to regulate use of drones in India.

- Draft drone rules have been brought to classify drones as small, medium, large, micro, nano etc
- Registration of each and every drone under operation in country.

→ Giving drone license to only those who have qualified 10th or equivalent exam.

- Limiting the registration age to 18 to 65 years to prevent misuse of drones

→ Renewal of registration licence after fixed time interval.

These steps along with defence structures like Anti-drone system of DRDO are based to make drone - use more user friendly.

19. Despite a global framework to prevent weaponization of space, it has been increasing in the recent times. Discuss. Also, give an account of the implications of space weaponization. (250 words) 15

अंतरिक्ष के शस्त्रीकरण को रोकने के लिए एक वैश्विक ढांचा होने के बावजूद, हाल के दिनों में इसमें वृद्धि हुई है। चर्चा कीजिए। साथ ही, अंतरिक्ष के शस्त्रीकरण के निहितार्थों का विवरण दीजिए।

Space has been regarded as a global resource to be used for the welfare and benefit of all humanity with no intent of using it for self motives.

Global framework to prevent weaponization of space is present in form of Outer space treaty of 1967. It is a consensus built treaty that aims to use space for upliftment of humans from misery. Although not stated explicitly regarding weaponizations, it promote friendly and peaceful use of space.

Despite this treaty, weaponization of space is continuing eg - deployment of anti-satellite weapons by USA, Russia, China, India are an example of it.

Similarly technologies like satellite Signal Jammers are also associated with it.

Many reasons could be spotted for this increase

- Thrust of getting superiority and dominance
- Increased modernization and R&D
- Greater rivalry etc are some of them.

Implication of space weaponization

- will promote an arm race among nations
- will lead to spread of mistrust among nations.

- can lead to huge loss of life and property.
- concern of economic failure (every weapon theft from plate of unfed child)
- can lead to concern of space debris and Kessler syndrome.
- may give backway to nuclear deterrence.

Organizations like UNO

should come up with collective, binding agreement to prevent weaponisation of space for welfare of humanity.

20. What do you understand by a bio-economy? Highlight the role that the National Biotechnology Development Strategy 2021-2025 can play in creating a robust bio-economy in India. (250 words) 15

बायो-इकोनॉमी (जैव-अर्थव्यवस्था) से आप क्या समझते हैं? भारत में एक मजबूत बायो-इकोनॉमी के सृजन में राष्ट्रीय जैव प्रौद्योगिकी विकास रणनीति 2021-2025 द्वारा निभाई जा सकने वाली भूमिका पर प्रकाश डालिए।

Bio-economy refers to the integration of biological organisms in the production, processing and development of materials that are in sync with the economic development.

Being one of the biodiverse nations of world, a robust bio-economy can have multiple benefits for India and in this direction National Biodiversity Development Strategy 2021-25 is vital.

It serves following important roles →

→ It would provide affordable and accessible products and technologies to all.

- It would play a vital role in development of capacity and production of superior man power
- The strategy aims to enhance the competition among people to foster positive growth in the sector
- It would also promote knowledge and expertise sharing among people and groups.
- It would also help to uplift society and promote economic development of people (eg - Biotechnology initiative and upliftment of farmer)
- It would also promote sectors like gene therapy, gene editing etc.

considering global concerns of unsustainability,
climate concerns, rising consumerism; this
mission is a right step towards inclusive
and pro-poor development in India.