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RECEIVING

GENERAL STUDIES (TEST CODE : 1840)

Name of Candidate	Sumit Kumar Gupta		
Medium Eng./Hindi	English	Registration Number	936769
Center	Lucknow	Date	04/09/2022

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
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16	15	
17	15	
18	15	
19	15	
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.

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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 सम्मना 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।

The Industrial Relation Code, 2020 defined fixed term employment for a specific period of time, i.e. contracted terms and period.

Addressing specific issues

1. Employers

- 1.1. Availability of large pool of workers.
- 1.2. Cost-cutting and profit making endeavours to small industries.
- 1.3. Boost to seasonal employment based on industrial demands.

~~1.1.~~ 2. Employees

- 2.1. Job Availability : as large

number of jobs would increase.

2.2. Income security - for particular period of time.

2.3. Utilization of skill-set of workers.

Concerns Associated

- ① Job security : will get affected as industrial owners can use hire & fire method.
- ② Social security - of workers will get affected.
- ③ Retrenchment - during crisis (ex) job leaving during Covid-19.
- ④ Owner's will on absorbing workers as permanent workers.

Thus, these needs to be solved to increase the labour force participation which is just 42%.

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।

Launched by National Highway Authority of India [NHA], Bharatmala Pariyojana seeks to connect major cities, ports through roads.

Bharatmala Pariyojana

- ① Connectivity through roads → major ports, cities and hinterland.
- ② Improve logistic and transportation → boost to export sector.
- ③ Increased employment opportunities.

Efficient Logistics Sector

- ① Reduction in time of transportation of goods esp specially for perishable goods.

② Warehouse will help to store good safely

2.2. Development of cold chains to provide longevity Ex vegetables.

2.3. Streamlining the process of transportation of goods Ex e-way Bills for seamless transportation.

③ Single window clearance to provide seamless licensing regime for transportation.

Steps taken

① LEADS Scheme to improve logistics.

② Linking FCI - NABARD - FPOs for cold chain developments.

Thus, it will help in reducing transportation time & boosting export.

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

'सिंचाई निर्धारण (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 समक्ष आने वाली कठिनाइयों की विवेचना कीजिए।

As per, FAO, irrigation scheduling is a method of scheduling time appropriate for providing water/irrigation to crops.

Advantages of irrigation scheduling

- ① Reduces water footprint : of crops and save extra water for irrigation.
- ② Requirement of crops for adequate water gets fulfilled. Some crops requires a fixed amount of water to grow.
- ③ Reduces water invisible export of water : As India spends 3300 L of

water for 1 kg of rice while china spends only 350 L of water.

- (iv) Helps in → Increasing groundwater
↳ Prevents soil salinity → against excessive irrigation.

Difficulties

- (i) Small-farm land : as 85% of the Indian farmers are small or medium [NABARD, 2020]
- (ii) Infrastructural gap in scheduling and providing irrigation.
- (iii) Information asymmetry : as many farmers are unaware regarding it.
- (iv) Technological gap : as tele-density is limited in rural areas and internet penetration is low.

Thus, adequate steps should be taken for irrigation scheduling to prevent water crisis.

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, प्रधान मंत्री 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।

PM Fasal Bima Yojana was launched to improve financial inclusion and crop insurance against any agrarian distress faced by farmers.

Features of PMFBY

- ① Farmer's contribution
 - ↳ 5% for Horticulture
 - ↳ 2% for Rabi crops.
 - ↳ 1.5% for Kharif crops
- ② Centrally sponsored scheme to support and provide financial insurance to farmers.
- ③ Covered wide range of services such as crop failure, monsoonal disruption etc.

Concerns in its implementation

- (i) One size fits all approach : by insurance companies → affects customization of financial requirements
 - (ii) Pending cases and failure to provide insurance on time → ~~dissatisfied~~ discourage farmer's participation. [Dalwai committee]
 - (iii) Financial burden on exchequer : as ~~the~~ large part of the premium is given by the government.
 - (iv) Low Insurance penetration : as only 23% of farmers have availed it [NABARD study paper, 2021]
 - (v) Regional imbalance : as farmers from Punjab & Haryana have availed it largely.
 - (vi) Small farm size lands
- Thus, these concerns needs to be solved to prevent agrarian distress.

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 गवर्नेंस में एक आदर्श बदलाव लाया और उसने बहु-आयामी पर्यावरणीय व्यवस्था के लिए एक दिशा प्रदान की। विवेचना कीजिए।

In 1972, the first environment conference took place at Stockholm, thus entering an environmental era.

Paradigm shift in environmental governance:

- (i) Environment was incorporated in the legislative Acts of the countries.
[ex] Wild life Protection Act, 1972.
- (ii) Policy formulation : by keeping environmental impact at forefront.
- (iii) Environmental Impact Assessment : carried out by various industries before starting a factory.
- (iv) Policy to reduce GHG emissions : such as Paris Summit, Net-zero emission, Glasgow Summit etc.

Multi-lateral Environmental Regime :-

(i) Multiple summit for environment.

[ex] Earth Summit, 1992, WSDG,
Rio+20 etc.

(ii) Countries collaboration :- for cooperation
in environment & renewable energy
consolidation [ex] ISA summit. (2015).

(iii) Several Conventions :- to contain
environmental pollution [ex] Basel
Convention against transboundary
Hazard, Rotterdam Convention etc.

(iv) Sustainable Development regime to
mitigate damage & adopt best
practices [ex] SDGs, 2030 etc.

Thus, Norman Myers set the tone
for 'environmental era' which includes
sustainable development and safe
environment.

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.

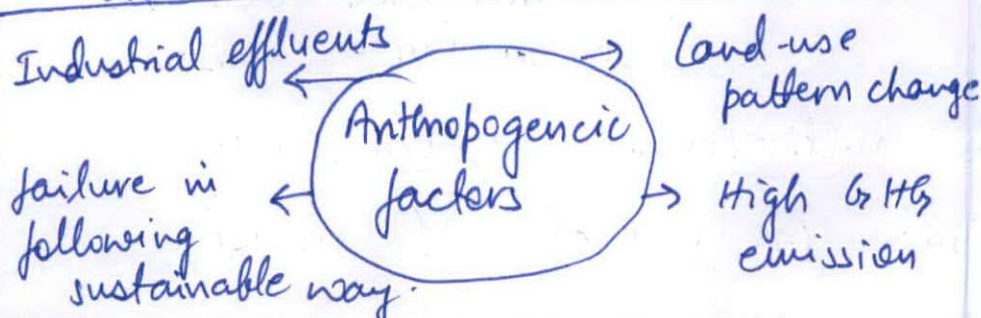
(150 words) 10

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

IPCC in its Sixth Assessment Report has warned about the sixth mass extinction due to climatic disasters.

Climate induced disasters

- ① Heat waves : both Marine & land [ex] Heat waves in American & EU countries
- ② Twin cyclone problems : ~~which~~ due to Rossby waves & MJO → causing havoc. ; → Also flash floods etc.
- ③ UV radiation : from the ozone hole ; Glacial outburst etc.



Role of Early Warning System &

- ① Predicting the climatic changes
[ex] Cloud burst at Chamoli → EWS saved many lives (2021).
- ② Displacing people to safe space &
[ex] During cyclone Fani, Odisha. (2021)
- ③ Formulating policies beforehand by the government [ex] during Chennai Flood (2021).
- ④ Developing infrastructure [resilient] to counter these disasters [ex] IRIS & CDRI collaboration.

Way forward → Reduce GHG emission
→ Policies like NDMA
→ Collaboration with NGOs ch. during crisis.

Thus, multi-pronged approach can mitigate the impact of disasters.

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।

Use of Information, Communication and Technology [ICT] can revolutionize the policing in India.

Uses of ICT in policing

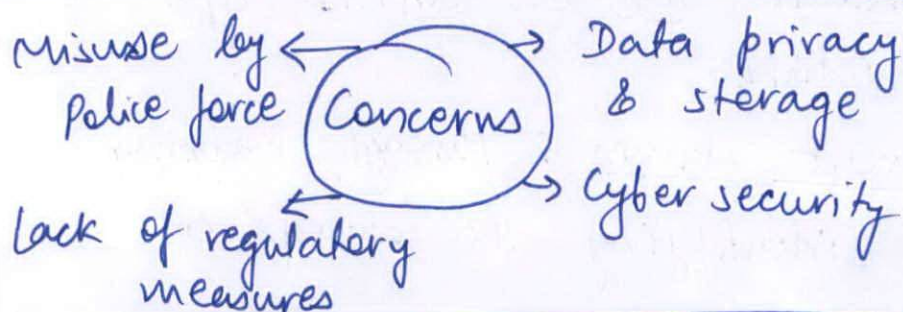
- (i) Tracking down criminal activities through ICT.
- (ii) Facial identifier smart camera : to nab criminals & terrorists.
- (iii) Safety to women : against any miscreants [ex] MO SATHI App of Odisha.
- (iv) Prevent crimes : through napping and identifying the wrongdoers.

Implications of leveraging Technology

- (i) SMART Policing : in improving

the efficiency of police service.

- (ii) Improves Transparency & Accountability in the Police department
- (iii) Safety to everyone against changing nature of cyber crimes.
[ex] Cyber-safe women.
- (iv) Preventive mechanism and ease of nabbing criminals [ex] Criminal Identification Bill, 2022
- (v) Faster dissemination of information
[ex] FASTER app of Supreme Court



Hence, ICT should be utilized for effective policing to increase vigilance

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?

Experts predicts that climate change and its subsequent fallout can become a cause for third-world-war.

Climate changes : threat to International peace & security &

(i) Loss of natural resources : leading to tussle among countries. [ex] Japan & China over fishing zone.

(ii) Imposition of climate-induced restrictions on developing countries.

(iii) Water scarcity & water security : in many countries jeopardizes the flow of river [ex] Dam on Nile river

(iv) Claim over lands due to climatic importance.

(v) Refugee crisis : as it will increase international migrants.

[ex] Bangladeshi refugees due to submergence of its coast.

(vi) Tussle over mitigating steps by countries [ex] Net zero goals → China - 2060, India 2070, EU - 2050.

Way forward

(i) Common but differentiated responsibility as propagated by India.

(ii) Use of multilateral forums to solve disputes [ex] China / Japan over Senkaku Islands.

(iii) Climate mitigation steps : Glasgow summit, Paris Summit, Technology transfer, \$100 bn packages etc.

Thus, environmental concern should be solved ^{at the} earliest for survival of humanity.

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 इससे उत्पन्न चिंताओं पर चर्चा कीजिए।

National Technical Research Organization [NTR0] defines VPN as the uses of world wide web [www] in private network against state's vigil.

Advantages of VPN

- ① Accessibility \because to large number of app \rightarrow increases internet utility.
- ② Protects Individual data \because as privacy is a concern [under Article 21, highlighted in Puttaswamy Judgment]
- ③ Cyber security \because as issues of virus, pegasus, ransomware etc. gets limited.

(iv) Individual Autonomy : regarding the uses of internet.

Concerns posed by VPN

- (i) Uses for Organized crimes : such as drug trafficking, human trafficking, money laundering etc.
- (ii) Uses for non-state actors : such as terror funding, spread of terrorist ideology etc.
- (iii) for cyber security threat [ex] Black-out in Mumbai [2021] → alleged VPN involvement.
- (iv) Against State vigil : promotes child pornography etc. [ex] Bulli Bai App etc.

Thus, VPN is a double-edged sword whose utility can be utilized for internet penetration.

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

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

Higgs boson, also known as, God Particle has given some ground-breaking revelations regarding origin of universe.

Role played by CERN

- (i) God particle & insight on the evolution of universe.
- (ii) Identification of sun-spots and the fusion capability to enhance energy security, if successful.
- (iii) Climatic change effects such as Ozone hole, etc.
- (iv) Evolutionary revelations & such

as origin of stars, planetary motion, Galaxy formation etc.

(v) Understanding the formation of stars through nebula and further solidification.

(vi) Identifying Asteroid belts and its mineral utility for the Common Heritage of mankind.

Thus, CERN has helped immensely towards scientific development.

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 पद्धति 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 way crops are grown and changed as per suitable agro-climatic conditions [FAO].

Factors affecting cropping pattern

- (i) Climate & climate induced phenomena changes the cropping pattern.
- (ii) Monsoon :- as rainfed ~~so~~ regions grow water efficient crops such as Barley, Bajra etc.
- (iii) Availability of infrastructural facilities such as cold-chain, warehouse etc.
- (iv) Water Availability & as water induces growing crops such as

rice, wheat etc.

- (v) Connectivity & transportation ∴ as horticulture & perishable goods are grown accordingly.
- (vi) Soil ∴ as alluvial soil etc. attracts water intensive crops.

Need for modification

- (i) Water scarcity & groundwater depletion ∴ as Punjab & Haryana has witnessed lowering down of their water table.
- (ii) Rainfed crops ∴ needs to be promoted [ex] millets, International Year of Millets, 2023 to encourage millets farming.
- (iii) Prevent Agrarian distress ∴ due to disruption in monsoonal rainfall.

- (iv) Crop Diversification : as Indian agricultural system is skewed towards 'Rice-wheat' system.
- (v) Prevent Salinity & soil infertility : as excessive usage of NPK has been observed. $8 : 3 : 1$
- (vi) Better & effective utilization of limited land resources [eg] National Palm Oil Mission of NE areas.

Way ahead

- (i) Encourage crop diversification : through ISO POM, TOP scheme etc.
 - (ii) FPO - FCI - NABARD linkages to develop cold storage facilities.
 - (iii) Behavioural changes and crop insurance facilities [eg] PM Jeevan Bima.
- Thus, better utilisation can ensure effective uses of 60% of human resources engaged in agricultural activities.

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।

Despite the Covid-19 pandemic and subsequent economic slowdown, India's current Account deficit is 6.8% as per budget 2022-23.

Budgetary Reforms undertaken

- (i) FRBM Act and the limitations imposed by it are tried to be inculcated. [ex] 3.5% ^{Fiscal Deficit} ~~CA~~.
- (ii) Fiscal consolidation and fiscal prudence : undertaken by the government.
- (iii) Reduced allocation towards MPLADS funds : to save money for Covid-19 pandemic.
- (iv) Austerity measures : by the government officials.

- (v) Zero budgeting idea :- to ~~star~~ give proper reason for financial allocation for projects etc.
- (vi) CAG Reports :- to encourage transparency & zero tolerance towards any corruption.
- (vii) Rationalization of subsidies and weed out ghost beneficiaries.

Issues which needs redressal

- (i) failure to achieve FRBM target? as pointed by N. K. Singh Committee
- (ii) DISCOMs bleeding out exchequer's money of states etc.
- (iii) Recapitalization of loss-making PSU's affects financial resources
 [ex] ₹1.64 lakh crore package to BSNL.

- (iv) Non-lapsable funds of several ministries creates lethargicity → affects economies of scale.
- (v) Rationalization of budgetary allocation : towards better fiscal consolidation.

Way forward

- (i) Strategic Disinvestment of loss-making PSUs [NITI Aayog].
- (ii) Increased investment in capital expenditure to encourage returns on assets. [Budget 2022-23].
- (iii) National Monetization Plan : to increase revenue of the government.
- Thus, proper utilisation of budget can help India become \$5 trillion economy by 2025.

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

Indian Railways is fourth largest railways in the world having 21,000 trains carrying ~~13~~ 13 million passengers daily [Annual Report, Railway Ministry]

National Rail Plan, 2030

- ① to convert narrow gauge railway track to broad-track by 2030.
- ② Electrification of railways → shift from diesel engine to promote efficiency.
- ③ Smart Platforms : to increase service delivery to customers.

- (iv) Involvement of Private sector to improve innovation and enhance customer experience.
- (v) Provide High speed rail connectivity.
- (vi) Safe passage and avoid railways accident to zero by 2030.

Steps already taken towards future ready railway system :-

- (i) KAVACH to prevent any accidents of railways → developed by DRDO.
- (ii) National Railway Plan to build bridges and safety routes to rail. Electrification fencing

to avoid any animal encroachment

(ii) Satellite imagery uses to increase mass surveillance of railway system.

(iv) Uses of GIP/GPS and remote sensing to prevent any accidents and provide real time tracker of railways.

Way ahead

(i) Piecemeal approach towards privatization → Innovation
→ Resource utilization
Efficiency.

(ii) Modernize Railways by adopting best practices.

Thus, the modernization & innovation Plan of Vivek Debroy Committee can be adopted.

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 क्षेत्रक 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।

Ashok Dalwai Committee highlighted the importance of technology in agriculture to double the income of farmers.

Significance of Technology

- ① Providing market to agricultural produce :-
 - ①-1. e-NAM portal for connecting farmers & businessmen
 - ①-2. One nation, one market portal :- for realising price of farmer's produce.
- ② Pre-sowing period :-
 - 2-1. Soil Health card - to assess the soil condition and advising

an subsequently.

2-2. Kisan TV to disseminate information.

2-3. Use of satellite imagery and remote sensory to predict rainfall and suggest crops accordingly.

③ During cropping period :-

3-1. Uses of Drones for spraying of seeds, water, fertilizers etc.

3-2. Security of crops by using technology.

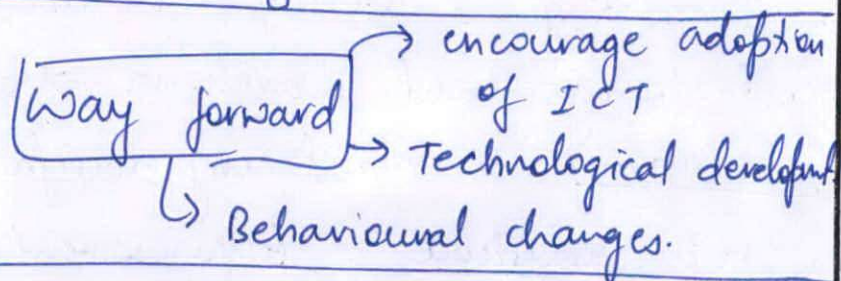
④ After harvesting :-

4-1. Connecting & storing in the cold-storage and warehouse → Geo-tagging to avoid any discrepancies

4-2. Crop Insurance :- assessment carried by companies and help in providing insurance money.

Challenges towards agricultural efficiency and farmer's income :-

- (i) Infrastructural gap :- as there is low ~~inf~~ tele-density and lower connectivity.
- (ii) Technological gap :- towards e-NAM portal or other portals.
- (iii) Failure in collecting correct data :- technological glitch in soil health cards. etc.
- (iv) Cyber fraud and issues of data security.



Thus, these measures can ensure doubling farmer's income.

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। सविस्तार वर्णन कीजिए। साथ ही, इनके समाधान हेतु उपायों का सुझाव दीजिए।

Digital transformation in PDS has ~~transformed~~ ~~the~~ revolutionised the distribution of welfare ~~food~~ measures in India.

Advantages

- ① to weed out the ghost beneficiaries. [ex] PM Awas Yojana.
- ② Identification of BPL families → targetted delivery of ration etc.
- ③ Uses of JAM trinity for Direct Benefit Transfer [ex] during Covid.
 - ↳ Avoid leakages of resources.

Challenges in PDS

- ① Low digital & internet penetration in rural areas → affects the

overall functioning.

(ii) Issue of Corruption : as licence holders takes ~~no~~ bribe before allocating name in BPL.

(iii) Fake BPL card-holders : which takes benefits unnecessary.

(iv) Technological glitch and gap → sometimes leave out the beneficiary name.

(v) PDS distribution of migrants worker : is still limited in few pocket region.

(vi) Financial lack of financial inclusion : through Jan-Dhan account.

(vii) leakages in PDS : as audit functioning is limited.

Measures to address them

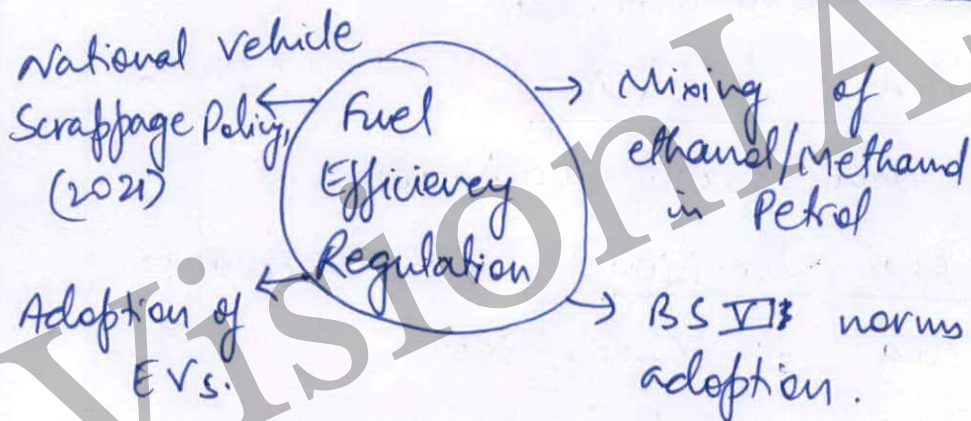
- (i) One nation, one Ration card to solve the problems of migrants workers.
- (ii) Increased financial inclusion → Bank accounts. etc.
- (iii) Audit functioning of PDS to avoid any leakages.
- (iv) Penal provision for miscreants and corruption.
- (v) Digital Penetration through Bharat net, PM WAANI etc.

Thus, multidimensional approach can realize NFSA, 2013 and envision inclusive India.

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।

Recently, India adopted BS VI norms to mitigate climate change and improve fuel efficiency.



Concerns regarding fuel efficiency

- ① Fuel inefficient vehicles → promotes ~~the~~ wastage of money.
- ② Companies not following the fuel efficiency regulations.

- (iv) Lack of oversight to increase fuel efficiency in vehicles.
- (v) Environmental concern : as it increases GHG emission.

Measures that can be taken

- (i) NIT I Aayog Ethanol & Methanol economy : to increase efficiency by adding catalyst and other materials.
- (ii) Adoption of EVs : to increase efficiency of vehicles.
- (iii) Discard old vehicles : to improve fuel efficiency.
eg) vehicle scrappage policy.
- (iv) Promote innovation : through Atal Incubation centre regarding

Fuel efficiency improvement

Way ahead

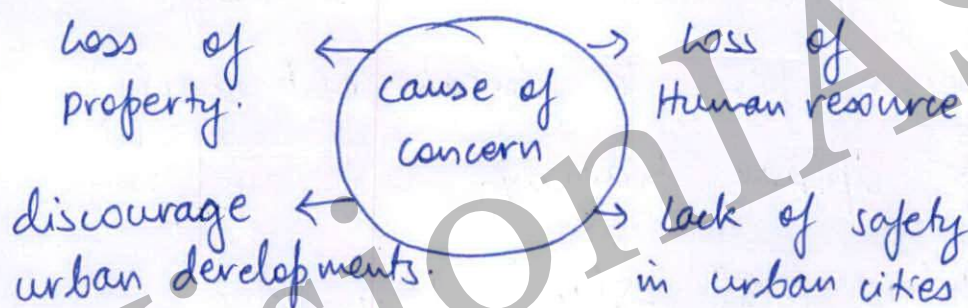
- ① Adopt Best practices of other countries [ex] EU's regulation on fuel efficiency.
- ② Infrastructural development & technology transfer of developed countries.

Thus, this can ~~enhance~~ enhance fuel efficiency for vehicles in 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 (अवर्न 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 रोधी क्षमता के निर्माण हेतु क्या कदम उठाए जा सकते हैं?

As many as 7,368 fire incidents took place in one year [NCRB 2020].



[Major causes behind urban fires]

- ① Compacted & unplanned development of urban cities → increased vulnerabilities to fire.
- ② Low implementation of Building Code while constructing any buildings, industry, etc.

iii) Lack of safety measures : and equipments in the building → goes against the mandate of building code, 2016.

iv) Unregulated industrial developments and poor ventilation → may cause fire to break-out easily.

[ex] Uphaar tragedy.

v) Urban Heat Island effect due to heat waves & climate change.

Steps to build Robust fire resilient cities :

i) National Building Code, 2016 should be followed strictly while construction.

- (ii) Expert Assessment : regular checks by experts on following of the fire-safety measures.
- (iii) Planned development of cities to avoid fire incidents. ex
Delhi Master Plan, 2041.
- (iv) Fire safety regulation and equipments should be updated.
- (v) Fire brigade : robust fire safety department can reduce spread of urban fire.
- (vi) Penal Provision for wrongdoers of not following such regulations.

Thus, planned cities can realise SDG 11 regarding sustainable cities and avoid ~~of~~ urban fire.

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 समक्ष 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।

Recently, drone carrying bombs were deciphered and neutralized by the Indian armed forces in Uri sector.

Drone : threat for border management

(i) Surveillance : regarding key army base → makes them vulnerable towards attack.

(ii) Planting of bombs : through drones become easier → as lack of human involvement directly.

Ex) Incidents at J & K borders.

(iii) Smuggling of drugs : and other narcotic substances through

borders → affects the working of border management forces.

- (iv) Supplying arms to militants : as drones can carry rifles etc. and deliver them to desired locations.

Measures taken for their regulation

- (i) Draft Drone Rules, 2021 : has been brought to regulate the working of drones
- ↳ provides for licences
 - ↳ Red zone → against flying drones over such area.
 - ↳ DGCA permission
- (ii) Hyderabad dome drone system :- to decipher unmanned vehicle and neutralize them effectively.
- (iii) Surveillance of drones by the

Indian defence system through radar system.

Way ahead

- (i) Technology transfer from countries like Israel for better regulation over drones.
- (ii) Finalize draft drone rules at the earliest.
- (iii) Collaboration of ISRO-DRDO for surveillance through satellite imagery etc.
- (iv) Anti-drone system to neutralize any drone effect.

Thus, drones can be used positively while mitigating the threats posed by them.

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 weaponization can affect the uses of space as 'common heritage of mankind'.

Global framework

- ① Outer space Treaty, 1963 ÷ it prevents uses of space for any weapons of mass destruction, nuclear arsenal etc.
- ② Space Regulation ÷ through convention to not utilize space for any country's disadvantage and prevent weaponization.

Increases of weaponization of space

- ① North Korea testing its missiles

over space → ~~aff~~ threat to other countries.

(ii) Chinese uses of space for nuclear arsenal and weaponization.

(iii) Recent threat by Russia is given during Ukrainian-Russian crisis → use of space to disrupt Ukrain.

Implications of Space Weaponization

(i) Arms-race and weaponization-race by countries in their air-space.

[ex] witnessed during growing of nuclear weapon during nuclear race.

(ii) Security of States is gets affected [ex] China's weaponization may affect India's security.

(iii) Safe passage of space area :-
for satellite launch etc.

(iv) Technological glitch :- may affect
the loss of human lives by
weapon failures at space.

Way forward

(i) Consensus-based formulation of
rules to contain weaponization
of space.

(ii) Rule-based world order :- to
provide sanctions against unruly
states.

(iii) Better utilization of space
area.

Thus, ~~is~~ prevention of weaponization
can enhance safety to 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।

As per FAO, bio-economy refers to the uses of biological resources for the sustainable economy.

National Biotechnology Development Strategy 2021-25

- ① leverage biotechnology in the economy to improve innovation.
- ② Encourage adoption of biotechnology in various department
- ③ Sustainable development of economy.

(iv) to improve circular bio technology
and uses of nano-technology:

Implications

- (i) Better resource utilization.
- (ii) Improving efficient resource distribution.
- (iii) Robust & resilient economy.

Thus, it will enable India
to reach \$5 trillion economy.

VisionIAS