



# VISION IAS

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## GENERAL STUDIES (TEST CODE : 1840)

Name of Candidate	Snehith		
Medium Eng./Hindi	English	Registration Number	1370255
Center	Online	Date	26-08-2022

INDEX TABLE		
Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	
<b>Total Marks Obtained:</b>		
<b>Remarks:</b>		

## 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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Delhi- 110009

## 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 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।

Fixed term employment is also  
(FTE)  
known as contract employment in which  
employee works for an employer for a fixed  
duration as per pre determined contract.

Addressing employers and employees

① Project cost and  
expenditure in advance

① Increase in number  
of job opportunities

② Tide over seasonal  
increase in demand  
for labour

② Skill development  
can be achieved

③ No additional costs  
like social security  
benefits

③ Fixed Salary and  
service conditions, so  
no chance of misuse.

### Concerns associated

- ① FTE replacing normal employment in many industries
  - (a) FTE grown at 8.3% in last year compared to 5% growth of normal employment
- ② FTE employees don't have statutory benefits
  - (a) Social security, provident fund
- ③ FTE being used in normal jobs and not limited to seasonal jobs
- ④ Even after working for long years FTE is not converted into regular jobs

There is a need of formalisation in India. But FTE should not be our long term goal. It must be limited only to seasonal work.

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।

logistics sectors <sup>is</sup> ~~will~~ be important  
in present context in order to make our  
goods cheaper comparatively and rise  
our exports.

### Bharatmala and logistics sector

- ① Bharatmala aims to build a wide  
network of roads across nation to ease  
connectivity and logistics.

In this aim logistics sector with  
focus on warehousing is beneficial in  
following ways

- a) Reduces costs from present 10-14%  
of GDP to 8% of GDP.

b) Reduces leakages in our transport

(e) Food grains

c) Connecting hinterlands to urban centres and ports

-logistics with warehouses can help in increasing exports of products from rural and remote locations.

Bharatmala and Sagarmala when coupled with efficient logistics sector with a focus on warehousing can make our infrastructure beneficial to all.

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 समझ आने वाली कठिनाइयों की विवेचना कीजिए।

Irrigation scheduling means that the irrigation or water supply that is being provided is as per pre determined schedule.

### Advantages

- ① Formers can prepare their field in advance to irrigate them on schedule
- ② Reduce water loss - as schedule is fixed, farmers will not over use water via flooding
- ③ Can help reach more fields because of scheduling and increasing efficiency.

### Difficulties faced

- ① Farmers at the end of schedule may protest to irrigate their fields first
- ② Excessive consumption at initial stages may lead to shortage at final fields
- ③ Lack of training and awareness among farmers to adopt to irrigation scheduling
- ④ Unpredictability of monsoon - low rain or drought can impact the scheduling.

But we can incorporate

Participatory Irrigation Management (PIM)  
as a precursor to irrigation scheduling  
so that farmers can become accustomed.

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 (PMFBY)  
is an insurance scheme in which farmer  
pay nominal amount of premium and  
remaining is paid by centre and state

### Concerns raised

- ① Delay in payment of premium on behalf of states.
- ② Insurance companies - are delaying in releasing funds during any crop losses
- ③ Some states are proposing new models
  - (a) Beed Model - Maharashtra
- ④ Limited technology adoption in assessment

⑤ All farmers are not participating in the programme.

### Measures needed

- ① Adopting technology - Drones to survey
- ② States should not delay in releasing their share - now states are being banned for late release of their share
- ③ Single insurance company for entire state
- ④ Government could help in case of any mass disaster to insurance companies
- ⑤ Bringing in all farmers and cash crops under single insurance scheme

Reforms in PMFBY can make the largest insurance scheme to better and brighter insurance scheme.

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

Stockholm conference gave the idea of sustainable development and called for growth that is in tune with carrying capacity of our nature.

This conference gave an impetus to global dialogue on environmental issues which ultimately led to 1992 Rio conference and UN Framework Convention on climate change (UNFCCC)

This UNFCCC is today a major convention in addressing climate change and negotiations among nations.

Also Stockholm conference brought all actors and stakeholders onto a single table to discuss the issues of climate change and global warming.

Thereafter number of scientific research and reports came out to aid our fight against climate change.

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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।

Sendai Framework and many UN reports had suggested that climate change induced disasters can be a major chunk of disasters in this decade.

(6) Heat waves

Increasing number of cyclones

Anthropogenic factors such as poor urban planning are increasing vulnerability to such disasters.

Role of early warning system

(1) Reducing the loss of lives

(4) Cyclone warning

- ② Minimise economic damage
  - eg) Predicting droughts early can help us look alternative food security options
- ③ Save critical infrastructure from disasters
- ④ Biodiversity and forests can be saved by early warning system
  - eg) Predicting heat waves
- ⑤ Help in planning and execution of government as by early warning system can identify vulnerable regions.

A robust early warning system can be a major tool to reduce impact of disasters in this 21<sup>st</sup> century.

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।

Having a tech savvy police is one of the component of SMART policing.

Leveraging technology in policing can help in better delivery of services and better investigation.

### Advantages of leveraging technology

- ① Criminal identification becomes easy
  - Ⓐ fingerprint or iris scan
- ② Faster investigation by using CCTNS - Crimes and Criminal tracking network system.
- ③ Better policing - using facial recognition
  - Ⓐ National automated facial recognition system.

- ④ Intelligence gathering - via internet surveillance

Concerns associated

- ① Privacy violations due to facial recognition and other softwares

- ② Profiling of people and mass surveillance

(eg) In China

- ③ Human rights violation - when Technology is used to harass people

(eg) Narco analysis

Policing need to be techsavy by using latest Technology like Bodycams, better weaponry. But it must be well balanced to save human rights.

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?

Climate change can impact all nations but some nations are more impacted than other. This may trigger a threat to peace and security.

Climate change as a threat

① Refugee crisis - Climate change may trigger huge refugee problem from severely impacted countries

- This can act as a threat to peace and security as incoming countries cannot handle them all

② River water disputes will increase among nations as rivers dryup due to global warming.

③ Stateless people - due to submergence of small island states (9) Maldives

④ Food insecurity - due to climate change induced reduction in productivity of land  
- People without basic necessities like food can turn against nations.

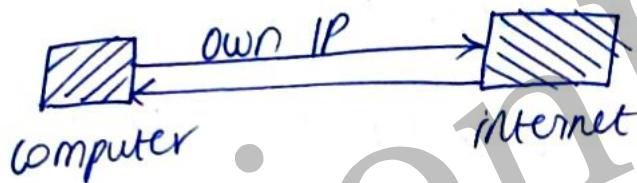
⑤ Coastal submergence - due to rising sea level and it will reduce land available for humans. This will also trigger massive border disputes.

Climate change can trigger many events which has a potential to become international peace & security concerns. The world need to prepare for such events to overcome security threats.

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 चर्चा कीजिए।

VPN is a masked encryption of IP address, that safeguards our original IP address and allow us to surf the internet privately.



Without  
VPN



With VPN

### Advantages

- ① Access to content blocked in the country (eg) Movies, TV shows
- ② Escape censorship of nation using a VPN. (eg) In China.

- ③ Helps us safeguard our privacy
- ④ Protect us from hackers and malware while using public internet or wifi

### Concerns posed

- ① Being used by radical groups to breach national security firewalls.
- ② Used by hackers to mask their own location
- ③ Anonymous users are causing concern to social media in profile verification.

VPN are to an extent beneficial to safeguard our privacy but they must not be allowed to misuse against interest of state.

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 हिग्स बोसॉन 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।

Higgs Boson is a prominent fundamental particle that is the cause of mass to any fundamental particle. Its discovery is seen as a watershed moment in particle physics.

CERN is a European organisation for nuclear research that is aimed at discovering fundamental particles and understand the finest forces.

- ① CERN has discovered numerous fundamental particles including Higgs Boson

- ② Internet was initially made by scientists at CERN to communicate among themselves.
- ③ CERN is home to one of the largest superconductors and their research had led to advancement in developing of superconductors.
- ④ CERN developed some of the most sensitive instruments to detect tiny interactions and fundamental particles that exist for very short time.

The colliders present at the Franco Swiss border are furthering our understanding of fundamental particles

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

India have a diverse crop pattern ranging from monoculture to crop rotation and including cereals to cash crops.

Factors affecting crop patterns

- ① Inter crop price parity - the relative change in prices of crops will affect the crops grown by farmers
  - (a) Growing cash crops for better price
- ② Government procurement - MSP and other PDS procurement will affect the cropping pattern
  - (a) Punjab & Haryana became dominant rice, wheat producers due to MSP

(3) Market demand - both national and international demand of a particular crop will influence cropping pattern

(eg) Growing dragon fruits due to growing demand

(4) Climatic condition of a region also have a say in cropping pattern

(eg) Dry lands - generally more inclined towards jowar, ragi, bajra.

(5) Irrigation and other inputs - better availability of irrigation will change cropping pattern

(eg) Growth of rice in Rajasthan due to Indira Gandhi Canal.

### Need for modifying

(1) Unsustainability in long run due to same pattern of crops (eg) Declining yields and productivity in Punjab

- (2) Water depletion - due to thirsty crops like rice and sugarcane
- (3) Soil salinisation and land degradation due to unsustainable cropping patterns
- (c) Excessive use of same fertilizers
- (4) Need to become resilient to climate change. Current cropping patterns cannot sustain long term disasters

In order to change cropping patterns government need to promote agro climatic based cropping pattern along with bringing awareness among farmers to change patterns

Haryana government is giving incentives to farmers who change cropping patterns. This example can be replicated in entire India.

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 वजटीय 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 a document that guides the nation in the next coming year. It is the most important function of any government

### Budgetary reforms

- ① FRBM act - fiscal responsibility and budgetary management to cut down fiscal deficit
- ② off budget borrowings now combined in the budget to better reflect borrowings
- ③ Better and accurate estimates of both revenue and expenditure
- ④ Rationalising borrowings and cutting down

on ways and means advance

### Issues still present

- ① Over estimation of revenue in many cases and especially in PSU disinvestment.
- ② Announcing new policies and programmes in mid-year - hampering budget proposals
- ③ No analysis on impact of budget on fiscal parameters like done in many countries  
(as USA)
- ④ Limited discussion on report submitted by public accounts committee
- ⑤ Lack of separate parliamentary budget office to oversee budget implementation on behalf of legislature

## Way forward

- ① Creating parliamentary budget office and give them power to produce independent analysis and reports.
- ② Pre-budget impact assessment and post budget analysis need to be conducted.
- ③ Clear discussion on Public accounts committee report and action taken report need to be placed.
- ④ No major deviation from budget should be allowed except in major cases like pandemic.

These steps can enhance the outcomes of budget rather than focusing only on output.

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 मज़न 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 railway system is the largest carrier of passengers in the world and one of the largest freight carriers.

There is a need for future ready railways because

- Railways need to go green to achieve aim of net zero.
- Augmenting latest safety to safeguard lives of passengers
- Adopting to advancements - like high speed rail system. (e) Bullet train Hyperloop

d) Resource efficiency is needed to enhance revenue and reduce costs and make railways a profitable venture.

### Measures in National Rail plan 2030

① Electrification - 100% - is needed for resource efficiency as coal and ~~oil~~ diesel engines are more inefficient and also reduce costs.

② Augmenting safety - Innovative technologies like Kavach are being used to improve safety condition.

③ High speed rail - introducing innovation and better delivery of services to railway passengers.

- ④ Target of net zero for Indian railways  
to become climate resilient and contribute  
to national targets -

National Rail Plan 2030 is  
a step in a correct direction to make  
our railways future ready and improve  
customer satisfaction.

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।

Technology can transform traditional agricultural systems into modern, more productive assets.

### Significance of Technology

#### ① IoT technology

- Using large number of sensors to monitor crops and take action
- Help get better yield and productivity increase.

#### ② Drone

- Applying harmful fertilizers and pesticides in a accurate manner

(ex) Drone Shakti initiative

### ③ Bio-technology

- Developing better quality seeds that can overcome droughts and floods
- Also helps improve nutritional content

(eg) GM Mustard, Bt Brinjal

### ④ Extension services

- Giving forecast to farmers early on
- Guiding farmers towards better solutions

(eg) Kisan TV

### ⑤ Market

- Technology like e-NAM had made a national wide market possible.

⑥ Technology also play an important role in food processing and transport

But there are numerous challenges present in adopting these new technologies.

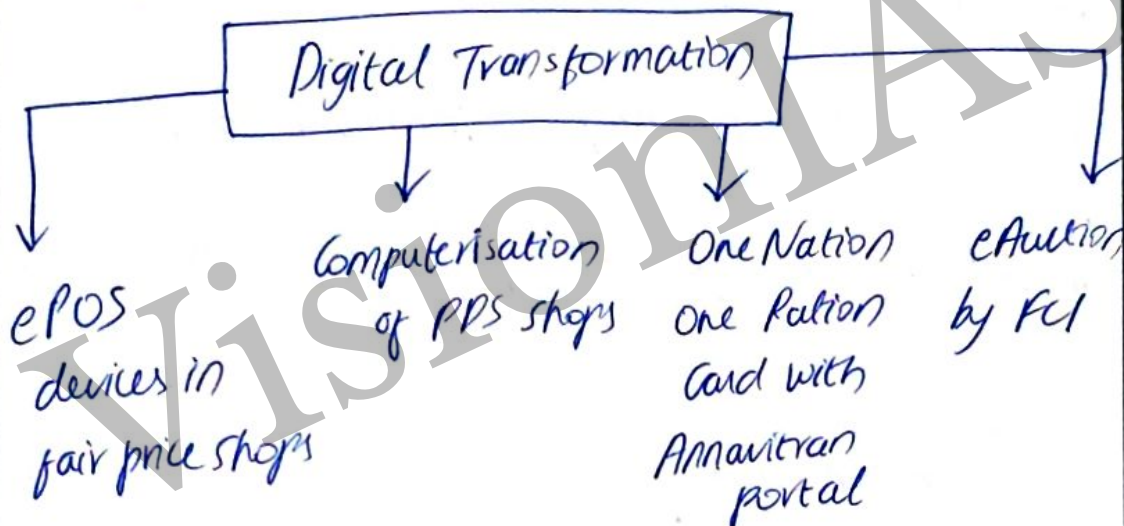
- ① High cost compared to traditional ones
- ② Uneconomical for small land holders  
(ex) Average land holding = 1.15 ha
- ③ Lack of awareness among farmers about new technologies
- ④ Dependence on subsidies - almost 20% of farmers income coming from subsidies. Due to this not much left to invest in upcoming Technology
- ⑤ Limited F&D to bring down the cost of these technologies.

Government can focus on investing in F&D and subsidizing essential technology in order to bring them close to common farmer.

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।

PDS is a lifeline to many underprivileged and vulnerable sections of society towards food security.



Despite these reforms many challenges are still present.

- ① leakages Shantu Kumar Committee reported around 40-50% leakages in PDS

- ② Wastage due to limited storage and procurement beyond buffer stock
- ③ Quality degradation of food grains during course of transport
- ④ Financial burden - 2.8 lakh crore ₹ food subsidy bill to government in FY 21-22.
- ⑤ Non-viability of PDS shops in many regions
- ⑥ Limited number of food options available

### Measures needed

- ① Reducing leakages
  - a) Tracking all transport vehicles in real time
  - b) Using technology like QR codes on bags to prevent their diversions

- ② Construction of new cold storages and FCI godowns with latest technologies
  - ① Steel silos
- ③ Quality check of food grains at frequent intervals of time
- ④ DBT can be opted for some people
  - ① Being done in UTs of Chandigarh
- ⑤ Operationalising one nation one ration card throughout the country without any glitches

PDS reforms not only be beneficial for common masses but also to government in saving crucial funds.

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।

India is currently on BS VI vehicles that are greater efficiency compared to BS IV vehicles generation.

Fuel efficiency is necessary to curb pollution also save precious fuel that we are importing.

Concerns with regard to fuel efficiency regulations

- ① Harmonisation with the world at a slower pace and not matching global standards.
- ② Automobile manufacturers unwilling to transition due to fears from increasing costs and decreasing revenue.

- ③ Limited enforcement of the regulations on ground
- ④ Poor technology adoption by many manufacturers.
- ⑤ Lack of awareness among consumers

In order to mitigate these concerns we can take following measures

- ① Government could subsidise the rise in cost to automobile manufacturers
- ② Proper testing facilities need to be established
- ③ Enforcement of regulations on the ground need to be ensured
- ④ Random checking

- (4) Investing in R&D of better engines can be promoted
- (5) Transitioning towards EVs and Hybrid vehicles (a) FAME scheme

An enhanced fuel efficiency will bring down our consumption of oil and mark towards our journey onto EVs.

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 रोधी क्षमता के निर्माण हेतु क्या कदम उठाए जा सकते हैं?

There is a rise in number  
of deadly fire accidents in urban areas.  
Recent incidents in Surat, Mumbai and Noida  
stand as an example.

This is a major concern because  
it is endangering many lives and causing  
huge economic damage.

### Causes

- ① Poor planning of the building
  - (a) Without ventilation
  - No proper fire exit
- ② Governance deficit - in overseeing the

implementation of Building code

- Due to prevalence of corruption in municipal bodies.

(3) Use of poor quality material To cut costs of building

⊙ Poor wires are leading to short circuit and causing fires

(4) Using of unsafe equipment indoors also a major cause of fire accidents.

Steps needed

(1) Enhancing the enforcement of latest building code

(2) Promoting use of fire resistant material in construction.

- ③ Guidelines given by Supreme Court in Uphaar Cinema tragedy
- Mandatory fire equipment in major buildings
  - Need for fire exit
- ④ Quick response fire fighting team is essential in order to save lives.
- ⑤ Inspecting all major buildings annually for their fire safety
- ⑥ Promoting R&D in fire safe technology.

For having smart cities we need to have smart buildings and neighbourhoods that are resilient to fire accidents.

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। सविस्तार वर्णन कीजिए। साथ ही, भारत में ड्रोन के उपयोग को विनियमित करने के लिए किए गए विभिन्न उपायों पर चर्चा कीजिए।

Drones have emerged as a major security concern across the world to border management.

### Drones as a threat

- ① Difficulty in detection due to their compact nature
- ② Being used for arms supply and drugs supply across the border
- ③ They are being used to attack military bases (eg) Attack on Jammu base by a drone

- ④ Drones are being used by terrorists to collect intelligence across the border
- ⑤ Some drones can be armed to attack our soldiers
- ⑥ Drones are being a medium to send message to terrorists residing in India

### Measures taken

- ① DRDO developed a method to negate any rogue drones
- ② Increasing vigilance over drone infiltration into Indian territory
- ③ Indigenous drones are being made to augment our surveillance.

#### ④ India learning from drone usage in Russia - Ukraine combat

In addition to these, we also  
can take following measures

- ① Developing attack drones to increase  
our offensive categories
- ② Preparing against drone swarms and  
their attacks
- ③ Indigenous radar system to identify  
drones

Drones can be a major weapon  
in 21<sup>st</sup> century warfare. India need to be  
prepared at all levels to ~~be~~ secure its  
border and interest.

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।

When humans began to explore outer space at a rapid pace in the 1950s, Outer space treaty was brought in to prevent mass weaponization of space.

Increasing weaponisation

- ① US launched a space force to protect its space assets
- ② Anti satellite weapons by many nations including us, Russia and India
- ③ Space assets became critical infrastructure so many nations are towards weaponisation to protect them.

(e) Communication satellites  
Military satellites

(4) To protect space assets from space junk  
and debris many nations are monitoring  
movements in space.

### Implications of space weaponisation

(1) Monopoly of orbits may be claimed by  
nations.

(2) Increase in space debris around the earth  
and cause threat to International space  
station.

(3) Weapons of mass destruction may be  
placed in the space on orbit around  
the earth.

④ New global arms race may start in  
space war zone.

⑤ Devastating impact on normal lives in  
case of a space war

(eg) Communication may be disrupted

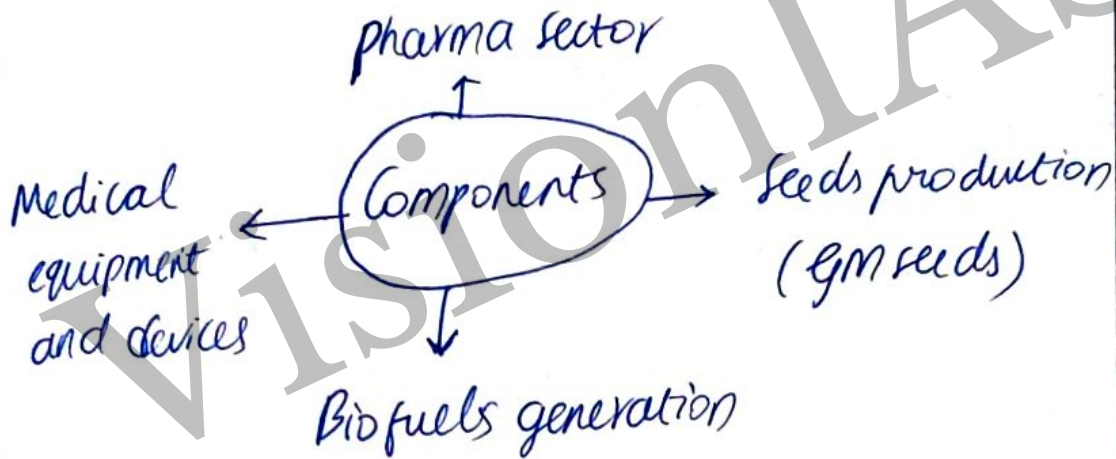
⑥ Space exploration may take back seat  
in space war scenario.

UN need to take charge now  
and bring a comprehensive new treaty to  
reduce weaponisation of our outer space.

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) में 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 is the economic opportunities that surround with the development of bio-technology.



India being a leader of Biotech revolution, have a large bio-economy in terms of a large pharma sector and research associated with bioeconomy.

## Role by biotechnology strategy

- ① Human resources - Skilling and training of valuable human resources in bio economy sector
- ② Investment in R&D via industry-academia collaboration  
- Government acting as a facilitator.
- ③ Grants to research institutes to that are focusing on innovative solutions
- ④ Nurturing startups in bio-economy and helping them contribute
- ⑤ States involved as an active partner in this strategy.

- ⑥ Export is being encouraged out of our products (e) New drugs
- ⑦ Promoting silio-drug design and other advanced computing methods to bring out new drugs.

Bio economy not only aguments our economic growth but also play a vital role in cementing India as a leader in bio economy.