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GENERAL STUDIES (TEST CODE : 2087)

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Medium Eng./Hindi	ENGLISH	Registration Number	154025
Center	ONLINE/ Delhi	Date	26/8/23

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
- There are **TWENTY** questions printed in **HINDI & ENGLISH**.
इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी 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।

Is student recommended for One-to-One mentoring?

Recommended

Strongly Recommended

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp. Punjab & Sind Bank), Dr. Mukherjee Nagar, 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.

All the Best

1. भारत में पशुपालन में महिलाएं किस प्रकार योगदान देती हैं? भारत में पशुधन क्षेत्रक में महिलाओं को वर्तमान में किन समस्याओं का सामना करना पड़ रहा है?

How do women contribute to livestock rearing in India? What are the issues currently faced by women in the livestock sector in India? (Answer in 150 words)

10

Livestock rearing is a supporting activity to agriculture in rural areas wherein cows, buffaloes, sheep, goats are reared for economic benefits.

Livestock rearing has been practised almost since men started to lead a settled life.

Contribution of women to livestock rearing: —

- ① Collection of fodder, grasses and eating/feeding items for animals.
- ② Collection of milk (milking)
- ③ Maintenance, cleaning and care of animals.
- ④ Utilisation of dung for fuel, biogas, and other domestic purposes.
- ⑤ Grazing of small ruminants when small members are involved in prime occupation of agriculture.

Issues currently faced :-

- ① Lack of High quality breed of animals.
- ② Unpaid work not counted.
- ③ Women not involved in managerial decision making with regard to rearing.
- ④ Prevailing Patriarchal norms prevent women from expecting caste to get involved in rearing.

Way forward :-

- ① Investments in research & development to get new breeds.
- ② Promoting women led cooperatives for milk on model of AMUL.
- ③ Recognizing the economic potential of women.

Women Participation in livestock sector is crucial for rural empowerment and enhancing farm incomes hence efforts to be made for more involvement of women in critical sector of livestock.

2. वन नेशन वन राशन कार्ड (ONORC) योजना कैसे और किस सीमा तक प्रवासी मजदूरों, शहरी गरीबों और दिहाड़ी मजदूरों के लिए उल्लेखनीय संभावित लाभ प्रदान कर सकती है?

How and to what extent can the One Nation One Ration Card (ONORC) scheme provide significant potential benefits for migrant labourers, urban poor, and daily wagers? (Answer in 150 words) 10

One Nation one Ration card is the ambitious scheme wherein one Ration card would be enough to avail subsidised food grains from any part of the country irrespective of nativity/domicile.

Salient features.

- Linking with Aadhar.
- Split coverage. e.g. one member can receive in one state, while rest family members can receive at their home/village.
- Pan India portability.

Potential benefits

- ① Availment of entitlement based food at the place of Migration. Generally migrant labourers and poor daily wage earners earlier were not able to use the PDS ration, which now they would be able.

- ② ensuring food security to all.
- ③ promote health and well being of large chunk of our labour population.
- ④ With increased rural distress and fragmentation of land holdings people are migrating to urban areas; now they can migrate without fear of being lost-out on government scheme and benefit.
- ⑤ Promote Social Justice and goal of SDG of Zero Hunger.

Challenges — All States have not implemented.

- Lack of Address or proper legal documents with migrants.
- Bureaucratic hurdles, Corruption in system.

DNORC is a revolutionising step in ensuring goal of Zero hunger and promotion of well being of migrant labourers. It should be implemented strictly in right earnest.

3. जलवायु परिवर्तन ने भारत में कृषि उत्पादन और उत्पादकता को कैसे प्रभावित किया है? क्या आपको लगता है कि जलवायु स्मार्ट जल बचत कृषि-प्रौद्योगिकियां समय की मांग बन गई हैं?

How has climate change affected agricultural production and productivity in India? Do you think climate smart water saving agri-technologies have become the need of the hour? (Answer in 150 words) 10

Climate change is the long term Phenomenon of change of weather Pattern of an area.

Climate change affected agricultural Production & Productivity: -

- ① Shift in crops and cropping Pattern
- ② Frequent droughts and flash floods
- ③ Delay in onset of monsoon and early withdrawal leads to large scale losses in agricultural production.
- ④ The recent incidence of locust invasion attributed to climate change.
- ⑤ Many water sensitive crops like Rice and temperature sensitive crop like wheat would undergo a considerable change in area.

Climate smart-water technologies
is need of the hour.

Some of the examples are :-

- ① Drip irrigation
- ② sprinkler irrigation
- ③ Rain water harvesting
- ④ construction of Farm ponds,
checkdams, Percolation pits
are needed on priority.

⑤ Smart Farming - sensor based
How does these methods help :- ^{irrigation}

- Drip and sprinkler irrigation
coupled with smart sensors helps
in identifying critical stress period
and can schedule irrigation accordingly.
- The water harvesting structures
like Rain water harvesting -
Farm ponds help in conserving
water for stressful period as well
as checks erosion due to flooding.

Climate change is a reality and
agriculture is our priority hence
sufficient investments and
popularisation of smart-water
technologies is need of the
hour.

4. संधारणीय फसल उत्पादन के लिए नैनो-उर्वरकों के आर्थिक और पर्यावरणीय लाभ क्या हैं? भारतीय किसानों द्वारा नैनो-उर्वरकों को अपनाने में आने वाली समस्याओं का उल्लेख कीजिए।

What are the economic and environmental benefits of nanofertilizers for sustainable crop production? State the concerns in the adoption of nanofertilizers by Indian farmers. (Answer in 150 words) 10

Nano Fertilisers are the new generation fertilisers which have been produced using nano-Technology and modification of molecules at nano-scale.

IFFCO a leading fertiliser company has developed Nano-Urea and Nano-DAP.

Economic benefits.

Saves Foreign exchange as we are dependent on imports for phosphatic & potassic fertilisers.

Reduction in cost of cultivation as input prices would fall down. Leading to more returns and increasing of farmer's income.

Earn through Patenting technology and supplying to other countries.

Environmental benefits

1. Less application of Nitrogenous Fertilisers and phosphate Fertilisers would lead to less leaching and less pollution of soil & water.
2. Minimum quantity is applied, hence toxicity would be less for crops.
3. Promotes Sustainable Agriculture and non-interference in natural agro ecology.

Concerns in adoption by Farmers

- ① Lack of technical knowhow.
- ② Pricing is also a concern.
- ③ Traditional mindset - (Not able to switch to new product).
- ④ Lack of credible data on effect of productivity.

Nano fertilisers have dual benefit of saving environment and saving money as it is indigenously developed; proper extension and outreach must be done to enhance its popularity in farming community.

5. देश के सभी हिस्सों में प्राकृतिक गैस के पर्याप्त और समान वितरण की उपलब्धता एक समान आर्थिक एवं सामाजिक प्रगति हासिल करने में कैसे मदद कर सकती है? इस संदर्भ में भारत को किन चुनौतियों का सामना करना पड़ रहा है?

How can the availability of adequate and equitable distribution of natural gas in all parts of the country help in achieving uniform economic and social progress? What challenges India faces in this regard? (Answer in 150 words)

10

Natural gas is the fuel which can be used for powering vehicles, factories as well as for domestic consumption (cooking gas - CNG/PNG).
Uniform economic & social progress

- ① Many parts (especially eastern and north eastern parts) have less supply of CNG & PNG.
- ② Gas is cost effective than petrol & diesel. It is also less polluting as it burns without residue.
- ③ Gas can be used to power vehicles and generate electricity which has been a challenge in underdeveloped hinterlands.
- ④ It will promote clean cooking fuel replacing firewood which is economic as well as environmental friendly.

Currently gas based economy is more
in Western and Northern parts
So development is skewed.

Challenges

- ① Dependent on imports.
- ② Lack of pipelines to transport gas.
- ③ Non-gas producing countries are in West coast and laying pipelines to North east and east ends cost which might make it unfeasible and costly.
- ④ International issues like US sanctions and Ukraine Russia war.

Way forward :-

- ① implementing PM Ujjala Ganga yojana. at fast speed.
- ② exploring internal resources like Kishan
- ③ exploring option of coal bed methane.

Gas based economy can fuel holistic and sustainable development - balancing growth throughout geography hence it must be promoted.

6. भारत में बढ़ते मानव-वन्यजीव संघर्ष के कारणों की व्याख्या कीजिए। मानव-वन्यजीव संघर्ष को कम करने के लिए सरकार द्वारा किए गए उपायों पर चर्चा कीजिए।

Explain the reasons behind increasing human-wildlife conflict in India. Discuss the measures taken by the Government to mitigate the human-wildlife conflict. (Answer in 150 words) 10

Human-wildlife conflict - refers to the entry of wild animals (Tiger, elephants) into the human habitations and ensuing conflict - out of this.

Reasons for Human-wildlife Conflict-

- ① Increased urbanisation and development - leading to Forest-depletion.
- ② Expanding agriculture into the adjoining forest-areas.
- ③ Construction of new road projects and Railway lines which encroach forest-lands.
- ④ Increased Rural distress leading people to venture into forest - in search of Timber and other Forest-resources.
e.g. Sunderbans, Arunachal Pradesh.
- ⑤ Increased economic activities as of mining and exploring for natural resources.

Measures taken :-

- ① Sensitizing rural communities.
- ② Increased patrolling by Forest Guards and officials.
- ③ Implementing innovative ideas like solar fencing of Forest villages and Pled-Bee where in Honey Bees used to distract away elephants.
- ④ Construction of safe underpasses and migration corridors.

Way forward :-

- ① Proper implementation of Forest Rights Act -
- ② Environment Impact Assessment -
- ③ involving Gram Sabha in Wild life Management plan -
- ④ Demarcation of Eco sensitive zones and buffer zones.

Human wildlife conflict leads to loss of valuable ~~and~~ human and animal life and creates animosity towards animal conservation; steps like that of Singapore model and innovative steps must be taken to stop human wildlife conflict.

7. भारत में बढ़ते शहरीकरण और ध्वनि प्रदूषण के बीच संबंधों पर चर्चा कीजिए। मानव स्वास्थ्य पर ध्वनि प्रदूषण के प्रभावों का वर्णन कीजिए।

Discuss the linkages between growing urbanization and noise pollution in India. Describe the effects of noise pollution on human health. (Answer in 150 words)

10

Noise pollution refers to the pollution through noise when it crosses above 40 decibel and other threshold limit prescribed.

How Growing Urbanisation leads to noise pollution?

- ① construction activity and use of heavy machineries like earth moving equipments.
- ② Increased amount of vehicles traffic.
- ③ Increased amount of factories and industries which generate noise.
- ④ Urbanisation leads to demand for electricity which is met through diesel generators and other power producing equipments.
- ⑤ Use of modern machineries like cooling plants, mobile towers all contribute to noise pollution.

Effect of noise pollution on human health: -

- ① Increased Mental stress.
- ② Leading to increase of High Blood pressure and certain diseases.
- ③ Mental fatigue and diseases.
- ④ Many instances leading to person being deaf as well.
- ⑤ Breaks the serenity and impacts school children and elderly and disturbs peace.

Way forward: -

- ① Putting Green zones like planting trees.
- ② Implementing noise reducing devices.
- ③ Promoting NO Honking zones
- ④ Putting time limit (like non-operation during night hours for economic activities)

Noise pollution causes mental and shock disorders and also reduces liveability of cities. It should be tackled through multi pronged approach as mentioned above.

8. भारतीय अंतरिक्ष नीति, 2023 भारत में एक सशक्त, नवाचारी और विश्व स्तर पर प्रतिस्पर्धी अंतरिक्ष पारितंत्र के विकास के लिए एक उत्प्रेरक के रूप में कैसे कार्य कर सकती है?

How can the Indian Space Policy, 2023 act as a catalyst for the development of a robust, innovative and globally competitive space ecosystem in India?
(Answer in 150 words) 10

Indian Space Policy 2023 is a comprehensive policy released by government for development of innovative and competitive space ecosystem in the country.

Need of Policy :-

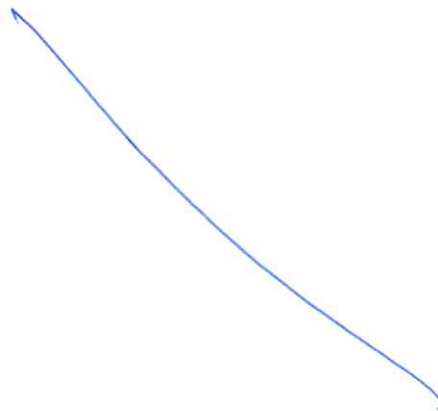
India's space programme is growing leaps and bounds and to expand and maximize potential benefits it was needed.

How will it act as catalyst for development of space ecosystem

- ① Involvement of private sector
- ② Producing spinoff technologies like fuel cell, energy efficiency and peaceful uses of space.
- ③ To earn Foreign exchange revenues by launching satellites for many countries.

- ④ promote and position India as a space superpower.
- ⑤ It would promote thorough research and development to improve the economy and life of Indian citizens.

The Indian space programme has come a long way since establishment of INCOSPAR in 1962 to establishment of ISRO, Antrix, New Space India Limited. As they say sky is the limit, India must utilise its capacity of providing cost-effective space solutions to the world and in this regard space policy was necessitated and is a welcome step.



9. स्पेशल फ्रंटियर फोर्स के अधिदेश पर चर्चा कीजिए। भारत की सुरक्षा सुनिश्चित करने में इसकी क्या उपलब्धियां रही हैं?

Discuss the mandate of the Special Frontier Force. What have been its achievements in ensuring the security of India? (Answer in 150 words) 10

Special Frontier Force (SFF) have been raised in the aftermath of Sino Indian war of 1962. It consists of Tibetan refugees and Gorkha soldiers.

Mandate : -

- To carryout operations along the LAC (Line of Actual Control) and prevent Chinese intrusion into our territories.
- They are deployed for quick and swift response in case of emergencies.
- On the recent Indo-China stand off along the LAC, SFF were deployed.

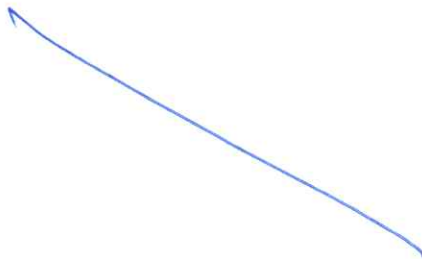
Achievements of SFF in ensuring security of India : -

- ① They were highly useful in operation Eagle

- (Indo-Pak, 1971 war in Chittagong Hill tracks)
- Useful in operation Meghdoot of capturing Siachen glacier.
 - They helped in flushing out militants during the operation Burewala (1984)
 - During operation Vijay (1999) Kargil war, they were used.

SFF are specially trained for high altitude mountain warfare and they have done well given the opportunities.

SFF needs better training and modernisation in order to deliver the best in critical LAC with China.



10. समुद्री सुरक्षा सुनिश्चित करना भारत के रणनीतिक और आर्थिक हितों की सुरक्षा का मूलभूत आधार क्यों माना जाता है? इस संदर्भ में समुद्री जलदस्युता रोधी अधिनियम (मेरीटाइम एंटी-पायरेसी एक्ट) का क्या महत्व है?

Why is ensuring maritime security considered the key to safeguarding India's strategic and economic well-being? What is the significance of the Maritime Anti-Piracy Act in this regard? (Answer in 150 words) 10

Maritime security refers to ensuring security along the vast 7500 km long coastline as well as defending and protecting the EEZ (Exclusive Economic zone of our country).

Need of Maritime security

Strategic reasons

- ① Possibility of infiltration as was in the case of 26/11 attacks.
- ② Crisis in Myanmar, Sri Lanka and Pakistan creates a potential of illegal migration.
- ③ Rising influence of ISIS in region like Sri Lanka, Bombing and Maldives.
- ④ Growing influence of China in Indian Ocean Region (IOR).
- ⑤ Aspiration of India to be a net security provider in IOR.
- ⑥ Drugs and Trafficking are rampant.

Economic reasons

- Protecting our fishermen
- Protecting and defending the critical sea lanes of communication.
- Majority of India's trade would flow through Indian Ocean Region.
- prevalence of piracy in the Horn of Africa region.

Maritime Anti-piracy Act - needed: -

- would ensure proper security to merchant vessels.
- in line with India's vision of SAGAR.
- Increasing Role of India in the Indian Ocean Region.
- Threat of piracy emanating from Horn of Africa region (Somalia region).

Securing the sea would ensure peace and economic prosperity of our country and establish India as a major regional power and Maritime piracy Act is a step in right direction.

11. 2023-24 के बजट में सूचीबद्ध सात प्राथमिकता वाले क्षेत्र (सप्तर्षि) कौन-से हैं? उनसे किस प्रकार भारत में समावेशी विकास को बढ़ावा देने की अपेक्षा की गई है?

What are the seven priority areas (the Saptarishis) listed in the Budget of 2023-24? How are they expected to promote inclusive development in India? (Answer in 250 words) 15

Saptarishi were the 7 ancient sages of Indian civilisation whose philosophies and ideas set the path for growth and development of our country. In the similar manner the Union Budget (2023-24) highlighted & listed the 7 principles called as Saptarishi for the economic development of our country. The 7 principles are:-

- ① Inclusive development-
- ② Infrastructure development and investment-
- ③ Promoting Green Growth
- ④ Ensuring last mile connectivity.
- ⑤ Unleashing the potential
- ⑥ Unleashing the powers of youth.
- ⑦ Financial sector reforms.

These 7 principles forms the core philosophy in guiding India towards path of sustainable and economic development.

How will they promote Inclusive development :—

- ① Inclusive development— means the development encompassing the benefit of economic growth for all the sections of population.
- ② Infrastructure & Inclusive development—
— Infrastructure creates spillovers in terms of Job generation and economic prosperity and balances out regional imbalances.
(e.g. Holistic development of hilly and NE states).
- ③ Green growth— Sustainable green growth itself is all encompassing and focus on green energy would ensure energy security and sustainable solution to all.
- ④ unleashing the potential by reducing regulatory hurdles in form of labour laws and compliances.
- ⑤ unleashing power of youth by skill development—

education and training to facilitate employment and capacity building.

- (6) Financial sector reforms to ensure that Financial inclusion in form of bank accounts and insurance products reaches to all sections of people.
- (7) Ensuring last mile connectivity in line with vision of Antyodaya and Sarodaya, so that the remotest of remote women are connected with the mainline of development.

The Saptarishi principles are a great initiative which is encompassing all the sectors of economy and would ensure equitable, fair, inclusive and sustainable development to the poorest of poor and remotest of remote population. It will help India achieve the goal of 5 trillion USD economy.

12. ब्लॉकचेन तकनीक भारत में भूमि रिकॉर्ड के डिजिटलीकरण की दिशा में कैसे महत्वपूर्ण भूमिका निभा सकती है?

How can blockchain technology play a pivotal role towards digitization of land records in India? (Answer in 250 words) 15

Blockchain is the technology which works on the principle of distributed ledger system; wherein no single user controls the data and the data are distributed across the Internet, where all users can access.

Blockchain technology has been thought of as a breakthrough technology which can have widespread application and digitization of land records is one of them.

How Blockchain can help in digitization of land records

- ① Prevents fraudulent transaction
- ② Duplicacy and redundancy of data would be minimised
- ③ Cost effective solution to the problem of digitization
- ④ Will solve the problem of long pending

Litigations in case of land disputes.

- ⑤ Can help in better targeting of Agriculture schemes like PM-KISAN and Direct Benefit transfers. Many inclusion and exclusion errors can be ruled out.

Challenges

- ① Lack of digital literacy in the rural areas.
- ② Problems of digital divide
- ③ Coordination amongst states and with centre as land is a state subject.
- ④ Threat of cybersecurity and chances of misuse.

Way forward

- Block chain technology training can be imparted to state government and Panchayat-functionaries.
- promotion of digital literacy

and increased penetration of the Fibre optics and Internet connection

③ establishing coordination and cooperation amongst Stake holders will improve the use of block chain technology.

Block chain is a revolutionary technology which can act as panacea to the longstanding problem of digitization of land records. It can accelerate the digitization and help in decentralisation and more democratic use of land records data, making it accessible to common public as well as government, however the challenges may be addressed before fully exploiting its potential.

13. सार्वजनिक-निजी भागीदारी (PPPs) भारत में कृषि उपज के भंडारण, परिवहन और विपणन को बेहतर बनाने में कितनी सहायक हो सकती है?

How far can public-private partnerships (PPPs) help in improving the storage, transportation, and marketing of agricultural produce in India?
(Answer in 250 words) 15

India is one of the leading producers in agricultural commodities like Milk, Pulses, Cereals, Fruits and Vegetables; But the losses both at Harvest and post-harvest stages hampers the prospect of utilising this vast potential.

Public private partnership refers to collaboration between public and private sectors to ensure the delivery of intended services.

Challenges in Agricultural Produce

Wide scale of challenge ranging from storage, transportation and marketing because of prevailing bottlenecks in form of coordination and archaic laws.

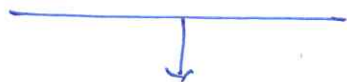
How can PPP ensure in improving Agriculture sector at various points : —

Storage → Large scale warehouses and cold storages can be constructed in rural areas.

It has advantages



How collaboration
can occur.



Govt can provide land at cheaper price and private sector can build infrastructure, which government alone could not have done. (Finance issues)

prevents
spoilage
Avoids distress
sale.
Keeps econ
remunerative
price.

Transportation :- Another sector
where maximum losses occur.

Transportation can involve

- Perishable items
reach on time.
- Avoid spoilage.
- Reduce cost of
transportation to
merch.

How the collaboration can work

- Govt to build Road infrastructure
through loan sector schemes

and private sector to intervene through innovative transport solution like

- Refrigerated vans for horticulture produce.
- Containers for milk transportation
- Innovative packaging solutions (Corrugated boxes, etc).

Marketing - Most challenging aspect as it is facing severe bottlenecks.

Marketing would ensure

- Better remuneration
- Avoids distress sale
- Higher income.

How can P-P-P work

Govt can facilitate Marketing through establishing Mandis and APMCs.

- Promoting e-NAM
- Contract Farming
- Removing stockholding limits.

P-P-P has ensured credible success in road infrastructure, it has got potential to transform agricultural sector if implemented and guided well; efforts to be sincerely made to leverage this.

14. सार्वजनिक वितरण प्रणाली में प्रौद्योगिकी के माध्यम से आधुनिकीकरण और सुधार योजना (SMART-PDS) में भारत हेतु खाद्य सुरक्षा से परे जाते हुए वृहद् परिवर्तनकारी क्षमता विद्यमान है। विवेचना कीजिए।

The Scheme for Modernization and Reforms through Technology in Public Distribution System (SMART-PDS) has transformative potential beyond food security for India. Discuss. (Answer in 250 words) 15

PDS (Public Distribution System) is the national system for ensuring distribution of Food and Ration to the needy people through a mechanism of Fair Price Shops.

There were lot of bottlenecks and challenges in PDS system hence there were call of reforms which is being implemented through SMART-PDS.

Modernization and Reforms through Technology has been targeted in the PDS.

In addition to ensuring the Food security to entitled beneficiaries there are huge benefits they are as follows:-

- ① Checks pilferage and diversions. Use of GPS to monitor diversion of Trucks.

- ② identifies and removes ghost-beneficiaries by linking through Aadhar number.
- ③ Proper dissemination of timely information regarding arrival of food grains to general public.
- ④ Transparency will be improved as online tracking of stocks and distribution can be tried.

The potential of SMART PDs goes beyond food security, here we can see :-

- ① Ensures Social Justice.
- ② Removes Exclusion and Inclusion error.
- ③ Actual position of stocks can be known, so that-excess can be sold in the market to avoid food spoilage and losses. This would lead to enhanced income.
- ④ promotes Corruption Free, Responsible governance.

- ⑤ Rural distress and issues of Malnutrition and hidden hunger can be addressed.
- ⑥ Diversion of stocks for non productive uses like alcohol making and smuggling to neighbouring countries can be avoided.
- ⑦ It will ensure that the benefits intended are reaching last mile and to the right-users.

The SMART PDS was a long pending ~~idea~~ for revamp of critical service like Food security provision the spinover effects of this would be in enhanced income, better earning through exports and fair and inclusive development hence SMART PDS has potential way beyond food security.

15. समुद्री हीटवेव की उत्पत्ति के लिए उत्तरदायी कारणों की व्याख्या कीजिए। उन तरीकों पर चर्चा कीजिए जिनसे वे समुद्री पारितंत्र को प्रभावित कर सकती हैं और आर्थिक नुकसान पहुंचा सकती हैं।

Explain the causes behind the occurrence of marine heat waves. Discuss the ways in which they can affect the marine ecosystems and cause economic losses. (Answer in 250 words) 15

Marine heat-waves refers to the condition of extreme warming of the marine ocean/sea surface.

Recent examples — Spain and parts of Europe have been experiencing May of Bengali region also witnessed marine heat-waves in recent years.

It is an unusual phenomenon generally linked with climate change and global warming.

Cause :-

- ① Global warming
- ② Deforestation
- ③ Increasing pollution due to anthropogenic activities.
- ④ Rapid infrastructural development in coastal areas.
- ⑤ Urban Heat Island effect and concretization are also responsible.
- ⑥ Altered ocean current-pattern

Ways in which Marine heat-waves (MHW) can affect marine ecosystem

- ① Loss of Biodiversity
- ② Death of beneficial Corals and other marine organisms.
- ③ Change in migration pattern of Fishes, Turtles and other marine animals.
- ④ Lead to oxygen depletion and formation of dead zones in Ocean
- ⑤ Reduction in productivity of marine ecosystem.

Economic losses : -

- ① Will severely impact the livelihood of sea dependent community. (Reduced Fish catch)
- ② Marine Heat-waves can have impact of Regional Weather pattern like Indian monsoon; thereby impacting Agricultural production

- ③ It can lead to increase in incidence of extreme weather events like cyclone.
 - ④ Existence of sea dependent people and coastal communities will be at threat.
 - ⑤ Loss of tourism potential.
- Way forward

- ① Minimising deforestation.
- ② Attending to coastal areas and development in coastal zones to be done with caution.
- ③ Promoting sustainable development.
- ④ Involving local communities in the planning and development.

The world is witnessing the surge of marine heat-waves associated with climate change; strong measures need to be addressed to the problem of climate change to prevent the problem of marine heat-waves as the existence of large number of community is at threat.

16. ग्लेशियल लेक आउटबर्स्ट फ्लड (GLOFs) के कारणों और प्रभाव की व्याख्या कीजिए। इस संदर्भ में सरकार द्वारा कौन-से उपाय किए गए हैं?

Explain the causes and impact of Glacial Lake Outburst Floods (GLOFs). What are the measures taken by the government in this context? (Answer in 250 words) 15

Glacial Lake Outburst - Floods refers to the outburst of glacial lake due to sudden rise in the volume and carrying capacity of lakes being breached.

ex - Kedarnath Tragedy of 2013 was due to GLOF of Chorabari Lake.

— Recent flash Flood in Chamoli district (2021) due to GLOF in Dhavliganga river.

Causes :-

- ① Global warming - Glaciers are melting fast.
- ② Pollution - Leading to accumulation of Black Carbon on glaciers.
- ③ Unplanned construction activities in sensitive areas weaken the lake boundaries
- ④ Increased and unregulated tourism leading to

additional pressure for change in
the land use pattern.

Impacts

Social

- Death and destruction
- Displacement of people from the hill.

Political

- creates refugee and displacement within the country.

Economic

- Damage to buildings
- Loss of life, livelihood and livestock.
- Development takes a back stage.
- All the economic projects are undone.
- Roads and bridges are damaged.
- Loss to infrastructure (Bridge, power plant, schools, Administration buildings)

Measures taken by government-

- ① Sustainable development-promotion.
- ② Environment Impact Assessment-
before carrying out development
work.
- ③ Stationing of NORF & SORF
to prevent-casualties.
- ④ construction of Dams and
embankments
- ⑤ Utilising Satellite (GPS, GIS
For Prediction)

Way forward

- ① Involving local community in
development-process.
- ② conducting ~~open~~ mock drills
and training.
- ③ Strengthening of infrastructure
- ④ Monitoring through leveraging
data from ISRO, IMD.
- ⑤ ensuring coordination
between different organs of
government machinery both
during and before occurrence.

GLOF has potential to cause
widespread losses as witnessed
in Uttarakhand; proper care
must be taken to prevent the
occurrence of such events in
future.

17. रेडियोमेट्रिक डेटिंग कैसे काम करती है? इससे जुड़ी सीमाएं क्या हैं? रेडियोमेट्रिक डेटिंग में कैल्शियम-41 का उपयोग करने के संभावित लाभ क्या हैं?

How does radiometric dating work? What are the limitations associated with it? What are the potential advantages of using Calcium-41 in radiometric dating? (Answer in 250 words) 15

Radiometric dating is the process of determining the age of old rocks, structures, artefacts, soil and other items.

- Principle of Radiometric dating ~~work~~ : —
- It works on the principle of radioactive decay.
 - A substance consists of radioactive isotopes of the elements.
 - We are aware of the half life of every element.
 - e.g. Carbon 14 it is 5700 years. It takes 5700 years for the initial quantity of Carbon to get halved. Based on the present amount of the element we can precisely calculate the age of given sample.

Limitations associated

- ① Sophisticated technology can't be done at places, it needs dedicated laboratory support.
- ② Handling of Radioactive material is a challenge.

Calcium-41 radiometric dating
potential advantages

- ① Mainly all the rocks as well as living organisms have the component of Calcium in them. (e.g. Teeth, Bones, Rocks etc)
- ② It has long half life of 99000 years which makes it useful.
- ③ C14 the most commonly used radiometric dating has half life of 5700 years hence not used for organisms/ samples older than 50000 years.
- ④ ~~Can~~ Calcium 41 can be

Used for wide range of dating
which was limited with C₁₄.

Way forward : -

Calcium 41 dating technique
can be used to estimate the
cosmic events (Sarpus from
Mons, Mars etc) and has
potential to unleash new
field in paleontological studies.

Calcium 41 is the modern advancement -
it needs to be exploited
in more scientific manner to
get the desired benefits.

18. सरकार द्वारा डिजिटल स्वास्थ्य पर बल दिए जाने के बावजूद भारत में ई-फार्मसी के संदर्भ में चिंता क्यों बढ़ रही है? इस द्वंद्व के समाधान के लिए क्या उपाय किए जाने चाहिए?

Why is there a growing concern over e-pharmacy in India despite the government's push for digital health? What measures are needed to resolve this dichotomy? (Answer in 250 words) 15

e-pharmacy is the process and system of getting the pharmaceuticals (medicine/drugs) through electronic web portals and mobile applications.

e.g. Tata 1mg; Pharmeasy, netmeds etc.

Growing concern over e-pharmacy

- ① problem of misuse of certain drugs.
- ② Over the counter sale of drugs would be increased
- ③ Problems associated with self medication.
- ④ Our country already suffering from quacks and e-pharmacy would further embolden the problem of wrong and fake products.

- ⑤ Quality of the drugs control-
be ensured.
- ⑥ Potential of misuse of many
drugs like Anti depressants,
or sleeping pills for suicide
and other wrong reasons.
- ⑦ Lack of digital literacy.

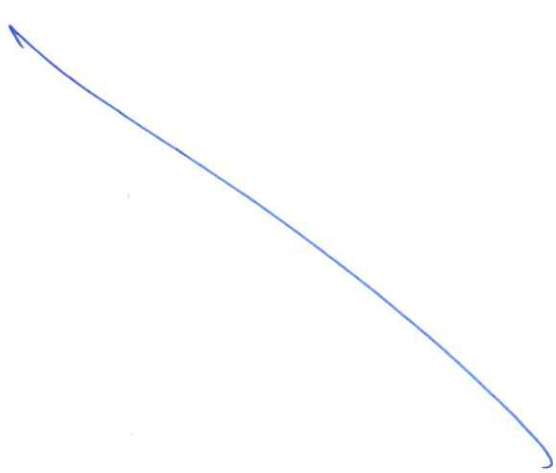
Even though government is promoting
e-health but the above mentioned
problems are creating a classical
case of dichotomy.

Some of the measures needed to
resolve the issue

- ① Regulation through
e-pharmacy bill as
proposed.
- ② Defining SOP for e-
pharmacy companies.
- ③ Strict implementation of
rules through monitoring
and checking and having
e-health regulatory authority.
- ④ Proper sensitization and
awareness through
information education
campaigns.

- ⑤ proper penal provisions for the defaulters of the e-pharmacy norms.
- ⑥ Mechanism for online grievance redressal.

on one hand we are promoting e-health, but the challenges associated with e-pharmaceuticals needs to be addressed as this issue is a pressing one which concerns health of all; hence e-pharmaceutical market need to be well guided, controlled and regulated to follow the best practices.



19. भारत में वामपंथी उग्रवाद (LWE) में हुई कमी में किन कारकों ने योगदान दिया है? क्या आपको लगता है कि यह कमी निकट भविष्य में LWE की समस्या के संभावित अंत का संकेत देती है?

What factors have contributed to the decline of Left Wing Extremism (LWE) in India? Do you think this decline signifies the likely end of the LWE problem in the near future? (Answer in 250 words) 15

(LWE)
Left wing Extremism refers to the extremist and violent activities being carried out by the Maoist insurgents to subvert the democracy and democratic institutions of the country.

— originated in 1967 in Naxalbari village of West Bengal and spread to almost 10 states of our country.

Factors contributed to decline of LWE in India

- ① The LWE has declined by 77.1% when compared to 2009 to (2021). The number of civilian casualties have reduced by almost 85% during the same period.

Some of the factors for decline

- ① proper implementation of AMRATHAN Doctrine.

- ② improved development- in the affected region (Roads, infrastructure, schools, connectivity)
- ③ proper implementation of welfare schemes like PDS, Food security
- ④ skills and livelihood based training for the youth & tribal youth. (ROSHNI scheme)
- ⑤ modernization of defence forces, police personnel and improved surveillance and intelligence gathering.
- ⑥ Switzale rehabilitation and surrender policy by state government (Odisha, AP) for the extremists cadres.
- ⑦ Dedicated operations like
 - Operation Greyhound
 - Operation Green hunt
 → (Through Special Forces)

The decline has been observed in almost all states, and the LWE related incidents are reported mainly

from the state of Chhattisgarh and
occasionally from Jharkhand.

The decline signifies the likely
end to the problem of LWE,
but it is time we should not
be complacent as it doesn't
take much time for the situation
to go out of control if the
underlying causes are not
addressed in full measure.

Way forward

- Proper implementation of
Forest Rights Act, 2006.
- Preventing alienation of
Land.
- The main issue of JAL,
Jingzi, Jameen needs
to be prioritized in develop-
ment discourse.
- More targeted approach &
coordination between central &
State forces are needed.

To completely eliminate the
surge of LWE, multi pronged
approach is the need of the
hour.

20. मनी लॉन्ड्रिंग और कर अपराधों के बीच समानताएं तथा तालमेल होने के बावजूद, कर अपराधों से निपटने के लिए एंटी-मनी लॉन्ड्रिंग (AML) उपायों का प्रयोग राजनीतिक, कानूनी एवं साथ ही परिचालन संबंधी चुनौतियां प्रस्तुत करता है। विवेचना कीजिए।

Despite commonalities and synergies between money laundering and tax crimes, leveraging anti-money laundering (AML) measures for tackling tax crimes presents political, legal as well as operational challenges. Discuss.
(Answer in 250 words) 15

Money laundering is the part of organised crime wherein the illegitimately earned money are made to look legitimate.

Tax evasion crimes refers to the process of evading the taxes by using legal loopholes or using the tax havens to avoid paying taxes from the money earned.

Money laundering leads to creation of black money which necessitates tax evasion to hide and protect the money; they both are synergistic and complementary.

But leveraging AML (Anti-Money Laundering measures) presents challenges: —

Political : —

- ① The definition of money laundering needs to be broadened to include tax crimes.
- ② more often Money Laundering (ML) and tax crimes cross the Country borders. Coordination amongst the countries and different agencies is a challenge).
e.g. money laundered through drugs in Afghanistan is stored in tax haven of Panama or Fiji.

Legal Challenges: -

- The Law of ML like Benami Transactions Act, or Fugitive Economic Offenders Act doesn't have specific provisions with regard to tax crimes.
- The legal loopholes needs to be plugged as these loopholes are used to evade taxes; e.g. - Base erosion & Profit shifting
 - Double Taxation Avoidance Agreements.

Operational challenges.

Synchrony between Enforcement Directorate, Directorate of Revenue Intelligence, CBI and other organisations are lacking. Often the jurisdiction overlaps or sometimes doesn't fall into the purview.

Way forward

- ① International collaboration like OECD, G20 (For Base erosion profit shifting, Global Minimum tax) needs to be implemented.
- ② DTAA Agreements needs to be strengthened.
- ③ Increased coordination between agencies like ED, CBI, DRI and Income tax.

Money laundering and tax crimes are huge threat to India's internal security, it needs to be tackled through strong political will backed by proper legal tightening of norms.