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GENERAL STUDIES (TEST CODE : 2091)

Name of Candidate	Aniket Dnyaneshwar Mirde		
Medium Eng./Hindi	English	Registration Number	1045939
Center	Online	Date	29/08/23

INDEX TABLE			INSTRUCTIONS	
Q. No.	Maximum Marks	Marks Obtained		
1	10		1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code). उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।	
2	10		2. There are TWENTY questions printed in HINDI & ENGLISH . इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी में छपे हैं।	
3	10		3. All questions are compulsory. सभी प्रश्न अनिवार्य हैं।	
4	10		4. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।	
5	10		5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorized one. प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।	
6	10		6. Word limit in questions, if specified, should be adhered to. प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।	
7	10		7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off. उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।	
8	10			
9	10			
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16	15			
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18	15			
19	15			
20	15			
Total Marks Obtained:				
Remarks:				
			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

Time : 9:30 to 12:20 .

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. भारतीय कृषि में जल के अकुशल उपयोग के लिए उत्तरदायी कारण क्या हैं? जल उपयोग दक्षता में सुधार के उपाय सुझाएं। (150 शब्दों में उत्तर दीजिए) 10
- What are the reasons behind the inefficient use of water in Indian agriculture? Suggest measures to improve water use efficiency. (Answer in 150 words) 10

Efficiency refers to output per unit input. In India, per kg of rice requires 3000 - 4000 L of water vs 600 - 1000 L in China, showing inefficient water usage.

Reasons for Inefficiency

- ① Old methods :- Flooding of rice vs Direct Seeding.
- ② Subsidies :- Water is free for farmers.
- ③ Cropping pattern :- Heavy focus on wheat, rice which require huge water.
- ④ Lack of irrigation :- Only 48% NSA irrigated.

⑤ Awareness :- About water as a resource lacking.

Measures Needed

- ① Forming local Water User Association :-
To regulate water use. Eq.:- Warabandi System in Maharashtra.
- ② Increasing area under precision irrigation
via Agriculture Infra Fund.
- ③ Developing seed varieties, techniques
requiring less water.
- ④ Slab based pricing :- Large farmers can be charged for water.
- ⑤ Encouraging hardy crops :- Like millets via market linkages, food processing, etc.

Ensuring water efficiency
can solve two SDGs — SDG2 (Hunger)
& SDG-6 (Water) at once, for India.

2. भारत में सार्वजनिक वितरण प्रणाली (PDS) के तहत फूड बास्केट में विविधता लाने के सामाजिक, आर्थिक और पर्यावरणीय लाभ क्या हैं? (150 शब्दों में उत्तर दीजिए) 10
- What are the social, economic and environmental benefits of diversifying the food basket under the Public Distribution System (PDS) in India? (Answer in 150 words) 10

Public Distribution System

(PDS) is a system under National Food Security Act, 2013 under which subsidized grains are provided to ~ 67% (80 cr) population.

Social Benefits of a PDS ^{Diversifying}

- ① Alleviating hunger, ensuring all food nutrients. Eg:- Millets provide Zinc, proteins, Calcium, etc.
- ② Crops can be provided according to local taste. Eg:- Jowar in Vidarbha.
- ③ More choice to citizens.

Economic Benefits of Diversification

- ① Millets / other crops are cheaper to procure for government.
- ② More holistic nutrient → Better workforce productivity
- ③ Increase in demand for other crops → More income to farmers

Environmental Benefits of Diversification

- ① Lesser focus on rice, wheat — lesser groundwater extraction.
- ② Hardy crops have more carbon sequestration potential, nitrogen fixing.
- ③ Lesser use of pesticide & fertilizers.

Government has rightly included some millets as 'Nutri-Cereals' under NFSA, 2013. Next step should be to ensure supply via R&D, farmer support

3. क्या पशुधन क्षेत्र को पुनः सक्रिय करना भारत के किसानों की संधारणीय आजीविका और आय में वृद्धि सुनिश्चित करने करने की कुंजी हो सकता है? अपने उत्तर के समर्थन में कारण प्रस्तुत कीजिए। (150 शब्दों में उत्तर दीजिए) 10
- Can re-energising the livestock sector be the key to sustainable livelihood and increasing the income of Indian farmers? Give reasons in support of your answer. (Answer in 150 words) 10

Livestock sector refers to rearing of animals (cattles) for commercial purpose. In India, 13 Cr Farmers are involved in livestock sector contributing 29% to Agri. GVA.

Livestock For Better Livelihood

- ① Can provide auxiliary income :- via milk
- ② Leads to integrated farming :- cow dung acts as manure.
- ③ Will act as security when crops fail due to extreme weather.
- ④ Has food processing avenues :- Eg:- Local ghee, chaas is demanded.

- ⑤ Has export potential :- India is already well-known for milk.

Limitations of Sector

- ① Availability of fodder :- ~ 20-30% shortage across green, dry fodder.
- ② Prevalence of diseases :- US rejected Indian meat due to Foot Mouth Disease.
- ③ Decreasing Productivity :- Due to increasing temperatures.

What is Needed

- ① Developing hub & spoke model for fodder, research in it.
- ② Developing mobile veterinary clinic.
- ③ Insuring cattle-heads

Livestock sector can help in achieving the goal of doubling farmers income.

4. क्या आप इस बात से सहमत हैं कि आर्थिक सुधार के बाद की अवधि में उच्च आर्थिक संवृद्धि के परिणामस्वरूप संवृद्धि का लाभ हाशिए पर मौजूद वर्गों तक नहीं पहुंच पाया है, जिससे समावेशी विकास चिंता का एक प्रमुख विषय बन गया है? अपने उत्तर का औचित्य सिद्ध कीजिए। (150 शब्दों में उत्तर दीजिए) 10

Do you agree that high economic growth in the post-reform period has not resulted in growth trickling down to the marginalised sections, rendering inclusive growth a major concern? Justify your answer. (Answer in 150 words) 10

After Liberalisation in 1991,
India saw rapid economic growth
averaging at ~ 8% between 2000 - 2010.

Not Trickled Down To Marginalized

- ① GDP per capita has not increased proportionately
- ② while India is 5th largest economy, bottom 50% hold just 3% of wealth (Global Inequality Report 2023)

Lack of Inclusive Growth

- ① Regional discrepancy - Per capita income

of Karnataka 5.5x of Bihar.

- ② Occupation :- Agriculture low productivity
vs white collar job high paying.
- ③ Caste discrepancy :- Individual sanitation
~ 30-33%. less in SC, ST (NFHS-5)
- ④ Gender :- Female LFPR at 26%. while
Male at 57%.

Way Ahead

- ① Developing new labour intensive sectors
like Care economy.
- ② District Incubation Centres to encourage
startups in rural areas.

As India reaps its
demographic dividend by 2050, it
is important to get rich together
before we get old together.

5. राष्ट्रीय स्वच्छ वायु कार्यक्रम (NCAP) के परिणाम का मूल्यांकन कीजिए। मिशन LiFE वायु प्रदूषण के मुद्दे का समाधान करने में NCAP को कैसे पुनर्जीवित कर सकता है? (150 शब्दों में उत्तर दीजिए) 10
- Evaluate the outcome of the National Clean Air Programme (NCAP). How can Mission LiFE reinvigorate the NCAP in addressing the issue of air pollution? (Answer in 150 words) 10

National Clean Air Programme (NCAP) aimed to reduce the PM 2.5 & PM 10 pollution by ~ 25% by 2022 over 2017 levels. The deadline has been shifted to 2026 with target increased to 40% reduction.

Evaluation of NCAP

<u>Success</u>	<u>Failures</u>
① <u>Monitoring</u> stations established in <u>60/100</u> cities.	① <u>22/30</u> most polluted cities in India (<u>10 Air</u>)
② <u>Awareness</u> generation campaign under-taken	② <u>Target</u> missed, ③ <u>More Focus</u> on PM 10 while PM 2.5 more harmful.

Impact of Mission LIFE

> Lifestyle for Environment seeks to involve all stakeholder in environmental conservation with micro steps :-

- ① Switching off lights :- low electricity use → low coal burning.
- ② Reduce, reuse :- Low burning in landfills.
- ③ Mindful Consumption :- Reduced e-waste, etc. — lower processing.
- ④ Steps like walking, cycling short distance → reduced vehicular pollution.
- ⑤ Involving private sector : Green tech like Wet Scrubber in industries.

Hence, LIFE can act as a catalyst in NCAP's target by 2026.

6. पारिस्थितिक तंत्र पर वनाग्नि के प्रभाव की विवेचना कीजिए। वनाग्नि के खतरे से निपटने में UNEP के फायर रेडी फॉर्मूला के महत्त्व का वर्णन कीजिए। (150 शब्दों में उत्तर दीजिए) 10
- Discuss the impact of wildfires on the ecosystem. Describe the significance of the UNEP's Fire Ready Formula in dealing with the menace of wildfires. (Answer in 150 words) 10

Wildfire is an uncontrollable fire which burns down large areas of ~~land~~ ~~forests~~. Eg:- Sariska Tiger Reserve Fire 2022.

Impact on Ecosystem

- ① Loss of forests:- ~ 50,000 Ha burned during Europe wildfire in 2022.
- ② Loss of animals:- 3 billion perished in Australia's Black Summer.
- ③ Increased pollution:- Release of CO₂, CH₄, SO₂, etc.
- ④ Auxiliary impact: Wildfires in Himalayas
→ Black Carbon deposited on glacier
→ Increased melting.

- ⑤ Loss of property :- Maui wildfire (Hawaii, Aug 23). has spread to town area burning down houses.

UNEP's Fire Ready Formula

- ① Easy to use formula which can be used in different circumstances
Eg:- Hills v/s plains
- ② Using at fire inception can nip the problem in bud avoiding spread.
- ③ Local capacity can be built-up to use the formula.

As global temperatures increase with climate change, wildfires will only increase. UNEP's formula can help in reducing the losses due to wildfires.

7. हाल ही में, भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने लघु उपग्रह प्रक्षेपण यान (SSLV) नामक अपना नया रॉकेट प्रक्षेपित किया। इसके क्या लाभ हैं? आने वाले वर्षों में SSLVs इसरो के लिए कैसे गेम चेंजर सिद्ध हो सकते हैं? (150 शब्दों में उत्तर दीजिए) 10
- Recently, the Indian Space Research Organization (ISRO) launched its new rocket called Small Satellite Launch Vehicle (SSLV). What are its advantages? How can SSLVs be a game changer for ISRO in the years to come? (Answer in 150 words) 10

ISRO launched its newest vehicle i.e. SSLV in August 2022 which is the smallest of its launch vehicle

Advantages of SSLV

- ① Uptime of just 72 hrs v/s 70 days for PSLV.
- ② Solid fuel which is more predictable for manoeuvres.
- ③ Minimal launch infrastructure needed

Game Changer for ISRO

- ① Useful to launch small satellites - 500 kg which will be demand in future due to increased privatization
- ② Can be easily manufactured by private companies.
- ③ Cheaper to launch:- ISRO can offer SSLV as a service to other nations.
- ④ Increase privatization in space sector in line with National Space Policy - 2023

ISRO demonstrated SSLV success by launching Janus-2 & Azadi Sat 2 - Next step is to focus on reusable SSLV for even increased efficiencies.

8. बायोपाइरेसी विकासशील विश्व के मौजूदा पारंपरिक ज्ञान के लिए प्रमुख चिंता का कारण क्यों है? भारत सरकार द्वारा मौजूदा पारंपरिक भारतीय ज्ञान की सुरक्षा के लिए क्या कदम उठाए गए हैं? (150 शब्दों में उत्तर दीजिए) 10
- Why is biopiracy a cause of great concern to the existing traditional knowledge of the developing world? What steps have been taken by the government of India for protecting the existing traditional Indian knowledge? (Answer in 150 words) 10

Biopiracy refers to stealing, copying, exploiting the biological know-hows without permission of the originator of knowledge.

Concern for Traditional knowledge

- ① Easy to fool :- Traditional knowledge mostly with tribals who lack awareness while big corporates can easily exploit them.
- ② Gaining traction :- Traditional knowledge has seen renewed interest in light of increased NCDs. Eg:- Global Centre for Traditional Medicine

in Jamnagar.

- ③ Lax regulations :- Benefits due to Biodiversity Act, 2002 hardly shared with tribals.

Steps by Govt

- ① Established Digital Library for Traditional knowledge
- ② AYUSH Ministry setup to streamline traditional knowledge & avoid biopiracy.
- ③ Biodiversity Act, 2002 :- Allows imposition of royalties, fines, etc.
- ④ Bio-PRIDE guidelines for centralized knowledge repository

Further, awareness needs to be increased via Panchayat Secretary to empower tribals in commercializing their knowledge.

9. असम राइफल्स को पूर्वोत्तर भारत में सीमा प्रबंधन और उग्रवाद से निपटने में किन चुनौतियों का सामना करना पड़ता है? चर्चा कीजिए कि कैसे इन चुनौतियों के समाधान हेतु इस बल के फोकस में बदलाव की आवश्यकता है। (150 शब्दों में उत्तर दीजिए) 10

What are the challenges faced by the Assam Rifles with regard to border management and tackling of insurgency in North-East India? Discuss how these challenges require a reorientation of the force. (Answer in 150 words) 10

Assam Rifles is a
specialized unit to tackle insurgency-
deployed in both - North East &
Jammu & Kashmir.

Challenges Faced in North East

- ① Multitude of forces :- ITBP, BSF, police, etc. all acting with overlapping jurisdiction.
- ② Porous borders :- inflow of smugglers, drugs, immigrants, etc.
- ③ Lack of local support :- Women stripping themselves, attacking personnel when Assam Rifles try to take action against insurgents.

④ China's fueling of insurgency :- By providing arms, funds to organisations.
Eg:- United Liberation Front of Assam.

⑤ Nexus :- between organized crime, terrorism, drugs, insurgency, etc — not all comes under jurisdiction.

Re-orientation Needed

① Reducing force from lesser threat area. Eg: Gov plan to withdraw in J&K.

② 24x7 liaising officers between different forces for seamless coordination.

③ Training ~~at~~ Assam Rifles to gain local support via SADBHAVANA like model of army

Insurgency is a grave national security which needs to be tackled via whole of Government approach.

10. अंतरिक्ष में शस्त्र स्थापित करने की होड़ अंतरिक्ष को शस्त्रों के संघर्ष का अगला युद्ध क्षेत्र बनाते हुए जल्द ही उस सीमा को पार कर सकती है जहां से वापस लौटना संभव नहीं होगा। अंतरिक्ष के शस्त्रीकरण के लिए उत्तरदायी संभावित कारण क्या हैं? इसके निहितार्थों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10

The race to put weapons in space may soon pass the point of no return making space the next theatre of arms struggle. What are the possible reasons behind the weaponization of space? Discuss its implications. (Answer in 150 words) 10

Weaponization of space

refers to placing weapons in space or developing capabilities to destroy space based assets. Eg:- Goi's Mission Shakti Anti-Satellite Test.

Reasons For Space Weaponization

- ① Much larger coverage: can attack further into enemy territory.
- ② Disrupt normal weapons: - Eg:- Destroying communication satellite can render flight carriers useless.
- ③ Concentrated: - only few countries have space weaponization capabilities.

Making them more powerful.

- ④ No well defined laws :- Like Hague convention for land based wars

Implications

- ① Constant threat :- Space based weapons can be easily launched at any time.
- ② Increased space debris :- Might lead to Kessler Syndrome.
- ③ Private participation :- via initiatives like Starlink can further lead to power concentration in few hands.
- ④ Multi-fold impact: Disrupt healthcare, economy, transportation, etc. of other countries possible.

The need is to make Outer Space Treaty binding to ensure only peaceful utilization of space.

11. हाल ही में, जवाहरलाल नेहरू पत्तन (JNP) भारत का पहला 100% लैंडलॉर्ड पोर्ट बन गया है। लैंडलॉर्ड पोर्ट मॉडल से आप क्या समझते हैं? पत्तनों के प्रबंधन में प्रयुक्त विभिन्न मॉडल कौन-से हैं? (250 शब्दों में उत्तर दीजिए) 15

Jawaharlal Nehru Port (JNP) recently became the first 100% Landlord Port of India. What do you understand by the Landlord Port model? What are the different models employed in the management of ports? (Answer in 250 words) 15

Major Ports Authority Act,
2001 led to revamping of operation
of major ports in India with
shift towards globally used
Landlord Port Model.

About Landlord Port Model

- ① Has a blend of public & private in operations of port.
- ② Land is owned by Ports board (which is landlord)
- ③ Mobile cranes, other port equipment are deployed by private sector.

- ④ Port Board fixes the tariff
- ⑤ Private operators operate the ports, maintain it, etc.

Analysis of Landlord Model

Positives

- ① Sharing of risks between government - private.
- ② Efficiencies of private sector

Issues

- ① Lesser government control on strategic asset like port.
- ② Contract awarding might involve crony capitalism.

Other Models

- ① Completely private port:- Port land owned, equipments, all by private company. Not usually

seen in India.

② Complete Govt. Ports :- Government manages operations via dedicated Port Trusts. Happened before 2021.

③ Mixed model :- Operations jointly by government - private but extent might vary.

Landlord port model has potential to revamp port efficiencies in India & make India a global hub for maritime trade in Indo-Pacific region.

12. भारत में कृषि मशीनीकरण को बढ़ावा देने के लिए शुरू की गई कृषि मशीनीकरण पर उप-मिशन (SMAM) योजना के प्रदर्शन का विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15
 Analyse the performance of the Sub-Mission on Agricultural Mechanization (SMAM) scheme launched to promote farm mechanization in India. (Answer in 250 words) 15

Agricultural Mechanization

refers to deploying machines in agriculture like tractor, harvester, post harvest storage, etc.

Sub-Mission on Agriculture Mechanization

- ① Setting up of Custom Hiring Centres from where farmers can rent machine.
- ② Deploying of Hi-tech machines
- ③ FARMS App to provide live information on rent charges, renting status, etc.

Success of SMAM

- ① Around 28,000 Custom Hiring Centres

(CHCs) established.

- ② Farmers are able to use equipment even for small farms.
- ③ Improved productivity - farmers can undertake auxiliary activities.
- ④ CHCs also act as farmer Extension services guiding them on new technologies, market scenario, etc.

Challenges in SMAM

- ① Number of CHCs way too less than needed - access in hinterlands limited.
- ② One-size fits all approach :- Most machines are same although requirement is different. Eg:- Hills v/s plains.

③ Mostly used by large farmers as small farmers (<1ha) land prefer to do it by hand.

④ Disguised unemployment :- Agriculture workforce increased from 45.6% to 46.5% in last 2 years inspite of mechanization trying to do opposite.

Need of Hour

① Farming FPOs in mechanization :- Farmers to own, operate machines.

② Re-orienting BSc in Agriculture to develop local, farm implementable solutions.

③ Encouraging startups via Agriculture Accelerator Fund to develop cost effective, scalable solutions.

Mechanization can improve productivity while giving farmers added time for auxiliary activities. Eg:- Live stock.

13. खाद्य प्रसंस्करण क्षेत्रक की अप्रयुक्त क्षमता का दोहन करने और इसके सामने आने वाली चुनौतियों का समाधान करने में डिजिटलीकरण की क्षमता पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15
Discuss the potential of digitization in harnessing the untapped potential of the food processing sector and resolving the challenges that it faces.
(Answer in 250 words) 15

Food Processing is a process of value-addition in food. Eg:-
Making cashew-added jam from Apples.
In India, it contributes ~ 9% of Agriculture GVA.

Untapped Potential & Challenges

- ① Skillsset :- lacking in farmers as to how to value-add.
- ② Informal economy :- 75% food processing units are informal.
- ③ Market-access :- Food processing units are in rural areas while demand mostly from urban areas.

④ Wastage:- Lack of cold storage leads to loss of Rs 1 Lcr of food every year (NITI Aayog).

⑤ Scattered:- Producers, food processing units are scattered in hinterlands.

How Digitisation Can Help

① Online courses:- To develop skill-sets in food handling. Can also be tailored for local needs. Eg:- Nagpur for oranges v/s Himachal for Apples.

② Registration:- Of all food processing units can bring them on common platform. — link stakeholders (Fig 1.)

③ Market Access:- Flipkart, Amazon like platform for processed food can be developed like tribalIndia.com.

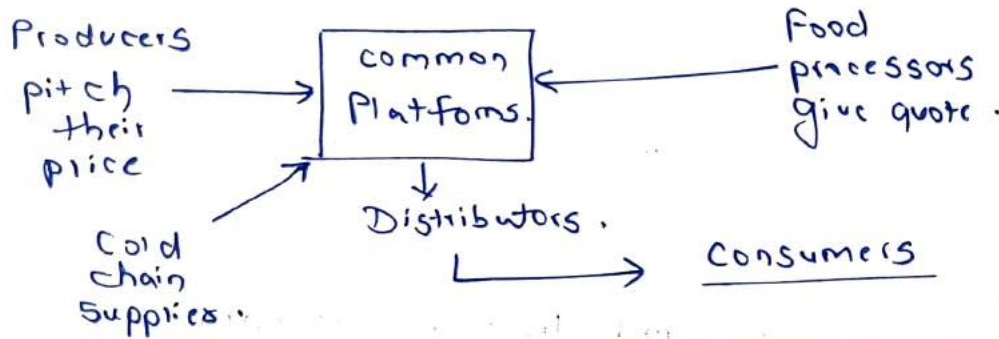


Fig. 1. Digitized Food Processing

- ④ Optimize supply chain :- Transportation routes, supply chain via AI.

key watchouts

- ① Digital penetration (smartphones) only 25% in rural areas.
- ② Powerful corporates should not exploit farmers.

To ensure equitable impact of digitized food processing Govt can formulate Model Digital Food Processing Act.

14. भारत में भू-अभिलेखों के आधुनिकीकरण का क्या महत्व है? इस आलोक में राष्ट्रीय जेनेरिक दस्तावेज पंजीकरण प्रणाली (NGDRS) की विशेषताओं का वर्णन कीजिए। (250 शब्दों में उत्तर दीजिए) 15

What is the significance of land record modernization in India? In this light, state the features of the National Generic Document Registration System (NGDRS). (Answer in 250 words) 15

Land Record Modernization

refers to updating the land records & giving the land parcels a unique identity, identifying their owner & moving to Conclusive Land Titling.

Significance of Modernization

- ① Giving ownership :- To the defaul person v/s presumed ownership now.
- ② Reducing litigation :- Land litigations for 2/3rd cases of judicial pendency
- ③ Increasing Property Tax :- By clearly identifying land parcels, evaluating revenue.

④ Faster Execution :- Of projects as issues in land acquisition would be reduced.

⑤ Financial Inclusion :- As ductful owners would receive claim & can pledge land as collateral.

In this regard, Govt has taken initiatives like Bhu-Aadhar, SVAMITVA scheme, etc.

National Generic Document Registration System

- ① Seeks to modernize registration of important documents.
- ② Involves use of digital registration & storing of information of digital servers.

- ③ Allows easy portability of documents as they would be accessible online
- ④ Reduces instance of fake documentation
→ Better beneficiary identification for schemes.

Key Watchouts

- ① Cyber attacks on data stored,
Eg.: AllMS attack in 2022.
- ② Digital divide:- Scheme delivery cannot be hindered due to technical glitches.

Digitisation & modernization will ease governance in future. It should be supplemented by ^{data} Security via Digital India Act.

15. 'प्रधान मंत्री फसल बीमा योजना' की शुरुआत से ही प्रौद्योगिकी के उपयोग ने इसकी सफलता में महत्वपूर्ण भूमिका निभाई है। चर्चा कीजिए। इस योजना को अधिक किसान-अनुकूल बनाने के लिए और क्या बदलाव किए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15
- The use of technology has played a key role in the success of the 'Pradhan Mantri Fasal Bima Yojana' since its inception. Discuss. What further changes can be incorporated to make the scheme more farmer-friendly? (Answer in 250 words) 15

Pradhan Mantri Fasal Bima
 Yojana is a crop insurance scheme
 which provides compensation to
 farmers in case of loss of crop
 due to events like floods, draughts, etc.

Technology in PM-FBY

- ① End-to-End - application for insurance can be done on app, online portal.
- ② Direct Benefit Transfer :- Directly into accounts of farmers in case of claims.

- ③ Removing false claims :- System is designed to check for false claims.
- ④ Faster claim settlement :- Due to complete online processing.
- ⑤ Geospatial technology :- integration has enabled live assessment of damage to crops.

Making Scheme Farmer Friendly

- ① Regional language integration :- ChatGPT can be integrated with WhatsApp where farmer can ask their doubts & get solutions.
- ② Extreme weather tips :- Beforhand with steps to take. Eg:- Harvesting onion if extreme rain expected in future.

- ③ Extending scheme :- To post harvest infrastructure, losses at that stage.
- ④ Incorporating cattle, pisciculture to ~~make~~ move towards integrated farming.
- ⑤ Widening farmer base by spreading awareness via Krishi Vigyan Kendras.
- ⑥ Differential compensation : More for millets, horticulture, etc. to nudge farmers towards crop diversification.
- With extreme weather events increasing, PMFBY can ensure remunerative farmer income & food security at a time.

16. चर्चा कीजिए कि कैसे नवीकरणीय ऊर्जा की ओर ट्रांजिशन भारत में महिलाओं के जीवन को बदलने और उनकी पूर्ण क्षमता को उजागर करने का सामर्थ्य रखता है। (250 शब्दों में उत्तर दीजिए) 15
Discuss how the transition towards renewable energy has the potential to transform the lives of women in India and unlock their potential. (Answer in 250 words) 15

Renewable energy refers to energy produced from non-conventional sources like solar, wind, etc. India is on renewable transition with aim of 50% Renewable by 2030. (Panchamrit Goals)

Impact on Women

- ① Possibility of providing localized electricity. Eg:- Palli Grampanchayat is self-sufficient in electricity via solar. This will lead to.
 - (i) Possibility of electric choolah :- Lesser PM 2.5 pollution from biofuel.

(ii) Increased productive time . Eg:-
water maybe supplied by pumps
rather than carrying by women .

② Higher electricity uptime in rural
areas \Rightarrow Higher educational
avenues via online modes .

③ Increased jobs in renewable sector -
potential for women to grab share .

④ Increasing productivity in feminized
agriculture (seen in India) :- via
Agro-voltaic farms, PM-KUSUM, etc .

⑤ Creation of local jobs : Windmills,
solar panels are usually in
villages, far away areas - women
can be trained for the maintenance
of assets .

- ⑦ Improved technological penetration in rural areas due to electricity supply - women empowerment.

What is Needed

- ① Deploying local solutions :- Solar, waste to energy, wind as per area
- ② Capacity building of women via schemes like Varuna Mitra.

Hence, 'Renewable transition along with' environmental benefits can act as catalyst in socio-economic upliftment of women.

17. जलवायु परिवर्तन भारत द्वारा भुखमरी और कुपोषण दूर करने में सामना की जाने वाली चुनौतियों में कैसे वृद्धि कर रहा है? 2030 तक शून्य भुखमरी प्राप्त करने की भारत की प्रतिबद्धता के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15
- How does climate change exacerbate the challenges that India faces in eliminating hunger and malnutrition? Discuss in the context of India's commitment to achieve zero hunger by 2030. (Answer in 250 words) 15

Climate change is changes in climate due to increasing global temperatures. Eg:- Long breaks - intense rain period in August '23.

Hunger Challenges in India

- ① 68% of Under 5 deaths due to malnutrition (NFHS-5).
- ② India loses 3% GDP due to malnourishment (Lancet).

Climate Change Exacerbating It

- ① Increased heat :- Grain Shrivelling
Eg:- Drop in wheat production in Mar. 22.

- ② Erratic rainfall :- Crop damages .
Eg:- Skyrocketing of onion prices
currently .
- ③ Increased inflation :- Reduced food
consumption by poor. Eg:- Food
inflation at 11.2% in July 23.
- ④ Increased pests attack :- On crops,
due to warmer climate .
- ⑤ More post harvest loss :- as cold
infrastructure already lacking .
- ⑥ Body metabolism increases in higher
heat → Need higher nourishment .

India has committed
to Zero Hunger Goal by 2030 .
In this light, following steps are

needed:-

- ① Shifting to millets via MSP
Support, improved seed quality.
- ② Encouraging private sector to
establish cold storage infra.
- ③ Converting Primary Agriculture
Credit Societies into Godowns.
- ④ Developing early warning system via
Quantum Computing to avoid crop loss.
- ⑤ Localized strategies to adopt to
malnutrition. Eg:- Mission Sampurna
(Assam)

World Food Programme states
200 million could become food secure
with 2°C rise - India needs to
act decisively to ensure its 2030 goal.

18. डिजिटल ट्विन प्रौद्योगिकी से आप क्या समझते हैं? इसे अपनाने के लाभ और चुनौतियां क्या हैं?
 (250 शब्दों में उत्तर दीजिए) 15
 What do you understand by digital twin technology? What are the benefits
 and challenges in its adoption? (Answer in 250 words) 15

Digital Twin technology
 refers to imitating any particular
 entity in the digital world. with
 coming up of AI, fast computing,
 it has become increasingly
 possible.

Benefits of Digital Twin Technology

- ① Provides digital identity which
 can be perpetually stored.
- ② Easy portability across devices,
 platforms, softwares, etc.
- ③ Reduces losses due to cyberattacks

- ④ Ensures continuity in information even if information on original entity is lost.
- ⑤ Leads to decentralisation to certain extent.

Challenges in adoption of Digital Twin Technology

- ① Expensive :- Requires twinning of a particular entity.
- ② More infrastructure :- Like data servers, data storage, etc. needed.
- ③ Digital divide :- Only 25% smartphone penetration in rural India makes using this

technology to fullest extent difficult

- ④ Complex cyber attacks by using ~~for~~ quantum computers can negate the effect of Digital Twinning.

Way Ahead

- ① Developing framework under Digital India Act.
- ② Building capabilities by introducing courses in Higher Educational Institutes.

Being in nascent stage, the technology would need adequate guardrails for its proper utilization.

19. आतंकवाद के वित्तपोषण पर अंकुश लगाने हेतु किए गए अनेक प्रयासों के बावजूद अंतर्राष्ट्रीय समुदाय के लिए यह एक मुख्य चुनौती बना हुआ है। चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15
- Terrorism financing continues to remain a major challenge for the international community despite several efforts to curb it. Discuss. (Answer in 250 words) 15

Terrorism financing refers to providing funds for terrorism which are used for radicalisation, buying weapons, carrying attacks, etc.

Several Efforts Taken

- ① Financial Action Task Force :- Monitors countries for terror financing. Eg:-
Placing Pakistan in Grey list.
- ② Interpol coordinates among different police organisations
- ③ Economic Sanctions :- Freezing of accounts of Al-Qaeda, ISIS, etc.
- ④ UN-Counter Terrorism Committee :-

Seeks to tackle new ways of terror financing.

- ⑤ No Money For Terrorism:- France led initiative to break terror financing.

Continues To Be Major Challenge

- ① New ways of financing:- Taliban using stablecoins to bypass UN Sanctions.
- ② Easier in online mode:- Money routed through various shell companies.
- ③ State sponsored terrorism:- 26/11 attacks had linkages to ISI.
- ④ Use of scattered channels:- NGOs, Real Estate, etc. makes it difficult to track.

- ⑤ Lack of Global Consensus:- China blocking designation of terrorist in UNSC 1267 list.

Way Ahead

- ① Developing common definition for terror financing, defining new avenues
- ② Coordination between UNSC & FATF to ensure effective sanctions
- ③ Developing legislative measures Eg:- Crime of terror financing under ICJ jurisdiction
- ④ Using AI to track forward-backward linkages with each crime.

To ensure peace for humanity, it is necessary to choke terror funding via concerted global action.

20. कृत्रिम बुद्धिमत्ता (AI) में होने वाली प्रगति से राष्ट्रीय सुरक्षा के दृष्टिकोण से अवसरों के साथ-साथ चुनौतियों में भी वृद्धि होगी। भारत के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15
Advances in artificial intelligence (AI) will progressively multiply the opportunities as well as challenges from the national security perspective. Discuss in the context of India. (Answer in 250 words) 15

Artificial Intelligence refers to mimicking human intelligence in information processing, taking decisions, etc.

AI Opportunities in National Security

- ① Mapping threats: AI based satellites can automatically alert border transgression.
- ② Use in Smart walls:- to check border movements, track patrols.
- ③ Monitoring social media of key personnel: to avoid honey trapping like DRDO scientist.

- ④ Training Soldiers :- Live battlefield simulation via Augmented Reality.
- ⑤ Better prediction :- of weather events, global supply shocks, etc. leading to more lead time to ensure food security, etc.

AI: Challenges To National Security

- ① AI based drones :- can carry out autonomous attacks
- ② Easier to carry cyber attack on critical infrastructure.
- ③ AI requires huge data - leakages in citizen data can threaten national security.
- ④ Possibility of developing mechanized

Soldiers like Iron Man.

- ⑤ Concentration of technologies :- like
Semi-conductor manufacturing can
create dependencies. Eg:- India's
dependency on China for chips.

What is Needed

- ① India needs to develop indigenous
capabilities in AI — via quantum
computing, courses in IITs, etc.
- ② Global AI Partnership :- to ensure use
of AI democratically based on
human principles.

“Technology by itself is
amoral. It is humans who make it
moral or immoral”