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GENERAL STUDIES (TEST CODE : 2091)

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Medium Eng./Hindi	ENGLISH	Registration Number	154025
Center	ONLINE/DELHI	Date	29/8/2023

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	

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

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

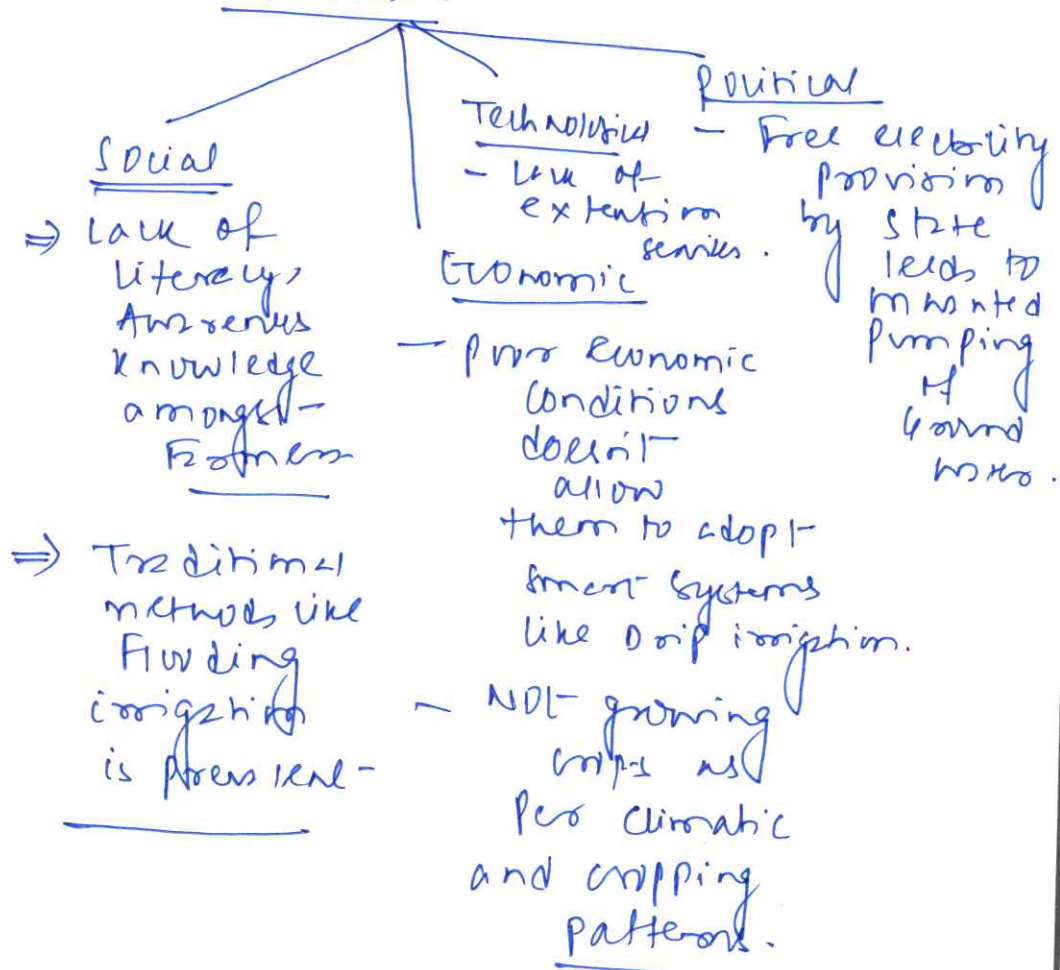
1. भारतीय कृषि में जल के अकुशल उपयोग के लिए उत्तरदायी कारण क्या हैं? जल उपयोग दक्षता में सुधार के उपाय सुझाइए। (150 शब्दों में उत्तर दीजिए) 10

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

Water use efficiency of crops refers to the amount of production (yield) obtained per unit of water applied.

India is primarily an agrarian economy and the inefficient use of water is one of the major reasons for low productivity of Agriculture.

Reasons: -



Impact of low water use efficiency

- Environmental degradation
- Losses through evaporation & Transpiration
- Bankruptcy of farmer as economic returns are lost
- Pollution & Groundwater depletion
- Loss of fresh reserves as petrol & diesel are used to pump water.
- Less per acre yield and poor economic returns.

Measures to improve water use efficiency

- ① Promoting crops as per geography and climate
- ② Change in cropping pattern from Rice - Sugarcane to Millets, pulses & oilseeds
- ③ Using precision irrigation equipment like Drip, sprinklers.
- ④ Promoting solar Farming (PV - KUSUM)
- ⑤ Irrigation scheduling as per scientific approach.

Water is a scarce and precious natural resource, improved focus to achieve per drop more crop needs to be institutionalised and focused to farmers.

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 the government-scheme and mechanism of providing subsidized foodgrains to the people of country.

- Major Food provided under the PDS are - Rice, wheat, pulses and sugar.

Majority under the PDS system the focus has been cereal and carbohydrate based food, but with the rising challenge of malnutrition and hidden hunger coupled with obesity issues, there is a need of diversification, to ensure balanced nutrition of people.

The potential benefits under different heads are : —

Social ✓ — improved health outcome

✓ Reduction in Protein Energy malnutrition

✓ Improvement in mental, physical and cognitive ability of people.

e.g. more pulses and millets will reduce

instances of kwashiorkor among children and anaemia among women.

Economic benefits

- ⇒ The food supplied under PDS will bring a change in cropping pattern - which will bring better returns to farmers.
- ⇒ promotion of healthy crops like millets, fruits, protein based pulses etc.
- improvement in farm income and ultimately help to double the income of farmers.

Environmental benefits

- shift from water guzzling crops like rice, wheat, sugarcane to millets; will help avert water crisis.
- Less of pesticides, fertilizers and chemicals for resistant crops like millets promotes ecological benefits.
- less disturbance to agro ecology of the region.

Diversifying the traditional PDS system with new crops can lead to better social outcome, increased returns and environmental sustainability.

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 is the rearing of cows, buffaloes, goat and sheep for economic benefits.

Since Green revolution the focus had been on crops and livestock was left behind; but this sector has immense potential to reenergize the income of Indian farmers.

How would it be possible.

- ① Livestock promotes multitude of economic activity like Milk, meat, Biogas and other industries like leather.
- ② Potential to supplement income in case of crop failures.
- ③ Less impacted by climate change hence can be used as shock absorber.
- ④ More than 50% of women not actively engaged; in the livestock sector they can be helpful.

⑤ Livestock promotes other industries like Food processing, Dairying, meat packaging etc; which has potential to generate huge employment.

⑥ Spillover impact on Food and Nutritional security.

AMUL model has successfully explained how women can be successful in livestock rearing.

⑦ Removes the problem of disguised unemployment in agriculture as surplus labour can be used.

Livestock sector - key features

- ① GOBARDHAN scheme for energy security.
- ② GOKUL Mission for promoting indigenous breeds.
- ③ Natural, organic & zero budget natural farming has critical inputs from livestock sector.

Livestock sector can contribute to promote livelihoods and generate guaranteed returns; the skewed focus for doubling farmer income should be on livestock sector.

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

Inclusive growth is that economic growth which helps in reaching the last mile and ensures growth with equity and equality.

High economic growth post-reform period has not been able to benefit to marginalised sections

— As per Oxfam report - 10% Indians hold more than 80% wealth.

— more than 15% population still under Below Poverty Line.

— There are incidences of hunger related death and all pervasive unemployment in countryside.

— High degree of Informalisation of labour and prevailing agrarian & rural distress further substantiates that growth has not been inclusive.

wide variations (Regional, and
Intra-regional) in terms of
income has been reported.

Western states like Gujarat-Maharashtra
compared with Bihar, Jharkhand.
Amongst state - Maharashtra we can
observe intra-regional variation
(Mumbai region vs Vidarbha region)

Way forward to remove inequalities
and promote inclusive
growth: —

- ① Sapta-rishi principle of Union
budget- 2022-23 (Inclusive
growth and last mile connectivity)
- ② 12th Fyp was focussed on
inclusive growth.
- ③ Missions like - Skill development,
literacy, Stand up India,
Startup India. to promote
inclusive growth.
- ④ Improvement and targeting
achieving of SDG Goals.

Inclusive growth promotes Peace and
harmony in Society as well as
leads to better human development—
hence all stakeholders must unite
to ensure inclusive growth.

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 was launched in year 2017 for 132 non attainment cities whose pollution load in air was high. It target reduction of PM 2.5 & PM 10.0 (Particulate Pollution).

— Goal was to reduce the pollution load of particulate matter by 30%; the progress has been not so satisfactory and the programme has been extended for another 2 years. (till 2024) with increased target of reduction of particulate matter by 40% of base year level.

Although the NCAP has been to an extent able to reduce the pollutant-load in air.

Mission LiFE — (Lifestyle for environment) was launched

by PM Modi at COP26 in Glasgow which aims primarily to bring in lifestyle changes to reduce environmental degradation and promote sustainable consumption.

Majority it focuses on: -

3 R - Reduce, Reuse, Recycle
Promotes circular economy.

Mission Life can lead to less use of fossil fuels and adapting ecofriendly lifestyle of living in harmony with nature. This can reduce the pollution load on the environment - thus contributing significantly to the success of NCAP.

Green and clean environment along with sustainable lifestyle would sustain the ecosystem and protect humans from wrath of climate change. All citizens should try to imbibe Mission Life in their life to bring a change in lifestyle.

6. पारिस्थितिक तंत्र पर वनाग्नि के प्रभाव की विवेचना कीजिए। वनाग्नि के खतरे से निपटने में UNEP के फायर रेडी फॉर्मूला के महत्व 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

Wildfires are the fires which occur in the natural forests because of natural (lightning, volcano, stone friction) and anthropogenic causes.

Impact - of wild fire.

1. Destroy the critical ecosystem
- ②. ~~increases~~ increases in pollution load
- ③. Loss of biodiversity and threat of death of wild animals.
- ④. Economic losses as trees are grown for commercial purposes in commercial plantation.
- ⑤. Further marginalisation of vulnerable tribal and forest-population due to huge economic losses and loss of livelihoods.
- ⑥. Forest become a net source of carbon rather than sink.

Mence of wild fire and UNEP's Fire ready formula :-

UNEP's formula talks about - 60% expenditure should be done to Planning and prevention of forest fires and 40% to mitigation and response to forest fire.

in India and throughout the globe forest fires are rising

- Hawaii forest fire
- Australian bush fire.
- Fire in Uttarakhand Hills.

Ways to prevent -

- ① proper planning, hazard mapping and vulnerability assessment through IIR or satellite mapping.
- ② Reducing the fire ready load of material (pine needles)
- ③ Avoiding monocultural practices.
- ④ stricter patrolling and surveillance through drones and satellite
- ⑤ community sensitization and involving local community

Forest fires are a menace if left uncontrolled and would further increase global warming and accelerate climate change. It needs to be prevented.

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

Small satellite launch vehicles (SSLV) are the latest addition to ever increasing technological armory of ISRO. These are small launch vehicles designed to launch smaller satellite upto 500 kg in low earth orbit.

Advantages:

- ① Low turnaround time.
- ② Increased number of launches
- ③ Separation of commercial interest from strategic interest as SSLV can be used for commercial launches of small sizes.
- ④ Increased foreign exchange earnings.
- ⑤ Promotion of science & Technology and involvement of private sector in space missions.
- ⑥ Helps to earn good will from poorer and small nations of Africa and S.A. etc countries.

How will it be a game changer

- ① competitive advantage - ISRO is known to be a low cost-reliable solution providers and with ISLV it can help boost Research & Education in India as well as abroad.
- ② Growing demand from foreign players and private sector for low earth satellites for GPS, Internet.
ex - Starlink constellation of satellite.
- Kalam - by university students.
- ③ Commercial earnings to fuel further deep space research.

With the ever increasing demand for technology ISLV can position ISRO as cost effective and reliable space service providers and position India as next hub of commercial space exploration.

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 the illegal usage of biological resources, traditional knowledge of the country without giving economic benefit.

e.g. Patenting of Neem, Itoldi & Balmatic rice by foreign countries.

Why it is a cause of concern.

- ① Lack of respect for indigenous traditional knowledge.
- ② Not giving economic benefits to the community involved in protection and preservation.
- ③ Violation of community and sovereign rights.
- ④ Potential misuse of the benefits derived from biological resources.

- ⑤ Increased exploration by Multinational companies and enhanced demand has further aggravated the situation.

Steps taken by Government of India to ^{Form} protect Biopiracy.

1. Biological diversity Act 2002 which aims to establish National, State and district level bodies for research and exploration of bio resources. (Regulates the use)
2. PPVFR Act; Protection of Plant varieties and Farmers Rights Act, 2001 which recognises the importance of Farmers and community as conservators of bio resources. Appropriate penalty provision for violation.
3. India signatory to convention on biological diversity and Cartagena and Nagoya protocol for bio resources (Benefit-sharing)

Biopiracy deprives the community of due respect and economic resources it must be checked to derive sustainable use of bio resources.

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 the oldest paramilitary force in the country with its origin during the British Raj. It has been entrusted with internal security in the North Eastern (NE) parts of our country.

Challenges faced by Assam Rifles

- ① Duality of control (both by Home ministry and Defence Ministry)
- ② officers drawn from Army and Jans are drawn from internal recruitment, locate problem of coordination and administration.
- ③ complex terrain and topography of North East Frontier aggravates the situation.
- ④ presence of large number of ethnic, tribal and group faultlines.

- ⑤ Lack of clear communication with local administration and police.
- ⑥ Porous borders and free movement regime. At times the functioning is dual and multiple. CBF in Bangladesh coast, ITBP and Indian Army in Arunachal borders.

Reorientation of Force is needed

- ① Better command and management by putting under one ministry and absolving from dual control.
- ② More localised recruitment of Jawan from the states of North East.
- ③ Enhanced training and provision of state of art technology like Drones, Satellite imagery, Night-vision devices.
- ④ Improved coordination with local administration.

Assam Rifles are the legendary force with good track record of its performance. It needs to get rid of bottlenecks to provide better security.

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 placement of weapons, weapons of mass destruction and other conventional weapons in space.

The phenomenon got highlighted ever since India launched its Anti satellite system (Mission Shakti) to destroy enemy satellites.

Reasons behind weaponization of space

- Military superiority achievement
- Hybrid warfare being the new norm.
- Increased demonstration of capacity to improved weapons sales.
- Rising tensions in the global world powers
[West vs Russia]
[India vs China]

— NO proper outspace treaty and
lexing in implementation.

Implications

- ① Increased space debris
- ② Threat- to the communication
and satellite architecture present
in space.
- ③ Competition for already
limited radio bands and
space availability.
- ④ Increased surveillance over
enemy countries.

Way out-

- ① Reiterating and negotiation
outer space treaty.
- ② Involvement- of UN
Security Council and
multilateral bodies.
- ③ Promoting peaceful use of
space and banning any
further weaponization.

Space is a common good which
must be used for human peaceful
endeavours not as a new theatre
of war, as it would threaten the
existence of humanity itself.

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

India is bestowed with a vast coastline of 7500 km which enables it to trade with world through network of major and minor ports along entire coast of India.

JNP (Jawaharlal Nehru Port) is one of the premier port of our country and container port on west coast.

To improve the efficiency and turnaround time government has come out with different model of operation called Landlord port model.

What does it mean. ?

The port authority (Government body) remains the landowner of the port and the operations and services are leased out and outsourced to the private parties in this model.

Benefits of this model :-

None of the Indian ports are in top 10 ports of the world as we have issues of efficiency and delayed operation, this model is set to improve governance and operation.

- ② Reduce turnaround time for cargo handling.
- ③ Cost of operation is expected to come down with increased efficiency and reduced turnaround time.
- ④ Bring in the best practices of the private sector.
- ⑤ With improved focus on development of port through Sagarmala and Bharatmala coupled with PM Gati Shakti it will lead to improved exports and increase of Ease of Doing business.

Other models of ~~on~~ management of ports : —

- ① Service model — In this case the owner as well as the operator of the operations is the government or

Port trust itself.

(Vizag port, Paradip port)

- ② Private sector model — Herein the private sector leases the land and entire operations of management and handling of ports is done by private entity.

e.g. Adani port in Mundra.
Dhamra port by Adani group (Odisha)

Ports are the most important pillar of international trade. As more than 80% of India's volume of trade is done through sea. Innovative and new models is the need of hour to improve efficiency and promote ease of doing business.

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

Farm mechanization refers to the process of using equipments and machineries to carry out the agricultural operations.
e.g. Tractors, power tillers, Rotavators, cultivators, seed drills.

Benefits of Farm mechanization

- ① Reduce drudgery
- ② Increased productivity and output
- ③ Improved farm incomes through better yield.
- ④ Promotion of rural employment

With the above benefits in mind, Government of India launched Submission on Agricultural Mechanization, (SMAM) in 2014-15.

The main aim was: -

- ① Promotion of agricultural mechanization

- ② Development of Farm equipment-
rooms / centres or Custom Hiring
Centre (CHC).
- ③ Development of specialised farm
equipments for operation in
Indian conditions.
- ④ Increased Research and develop-
ment in Farm machinery
sector.

How has the progress been?

- ① India still lags behind
other countries in Agricultural
mechanisation.

USA - 95%.

Australia is 90%.

China & Brazil is 85%.

Whereas in India it is
approximately at 30% and
majority mechanization in India
has been (tractORIZATION)

- ② Although, progress has been
made, but there are large
regional variations with
majority of mechanisation
occurring in states of

Haryana, Punjab, Karnataka, Tamil Nadu and low-level in North East and Eastern states.

Way forward : -

- ① Renewed focus on Eastern and North Eastern states should be there.
- ② Promotion of Small Farm equipments like power tillage, power sprayer etc.
- ③ vigorous promotion of custom hiring centres by roping in FPO, Cooperative Societies.
- ④ Increased subsidy on Farm equipment purchase.

Farm machinery can transform Indian agriculture from subsistence to commercial scale, which would help in export earnings and employment generation. Hence lacunae and bottlenecks in IMAM may be overcome to improve farm machinery penetration.

13. खाद्य प्रसंस्करण क्षेत्र 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 that sector of economy which utilizes agricultural produce to derive value added and enhanced products.

e.g. [Jam & Jelly from fruits.
Pickles & sauce from vegetables.

Digitization is the use of technology to improve the existing state of affairs in a given context.

Food processing sector is considered as the sunrise sector of our country; which has potential of 7 to 10 billion USD for exports and creation of millions jobs.

How digitization can help in Food Processing sector?

- ① Improved accessibility of capital for industries through schemes like Mega Food Parks etc.

- ② Better traceability to increase the demand in exports market
- ③ Digitization can help new entrepreneurs in food processing through training, capacity building and handholding.
online trainings being conducted by ICAR - Research Institutes for food processing).
- ④ Digitization brings in transparency, speed and efficiency. Many food processing plants are delayed due to bureaucratic hurdles, hence improved digitization may help in single window clearance and reduction of time.
- ⑤ Digitization can help to connect with potential markets in overseas and also help in making customized products.
(video conferencing facilities for market exploration)

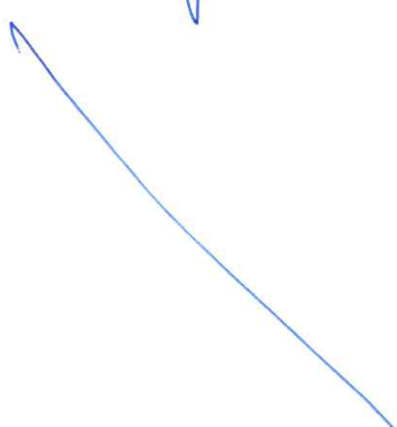
Challenges with digitization

- ① prevailing digital divide in the country.
- ② Lack of digital resources (Laptops, Smart equipments Penetration)
- ③ Connectivity and coverage issues in rural hinterland.

Way forward

- ① Schemes like SAMPAD A Yojan, PM FME needs to be implemented at ground level.

Food processing sector has immense potential; what is lacking the collective synergy and effort for development. Digitization can bridge this gap.



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 records are the details of ownership status of the land.
(Patta, ownership certificate, Registry details etc).

Importance of land record modernization (LRM)

- Improves the digital governance.
- Majority of pending cases in Indian courts are related to land issues; digitization would reduce litigation.
- Prevents fraudulent transaction and protects the citizen from fraud.
- Better targeting of government schemes like PM-Kisan, Socio-economic census.

- improves the ease of doing business and increases the prospects of industrial growth and development as land acquisition becomes easier.

Challenges in modernization

- ① Land is a state subject, effective coordination is lacking.
- ② Prevailing digital divide and digital illiteracy amongst people.
- ③ Lower penetration of Internet & computers in rural areas; whereas vast majority of land is there.

in order to bring in modernization of land records; various initiatives like

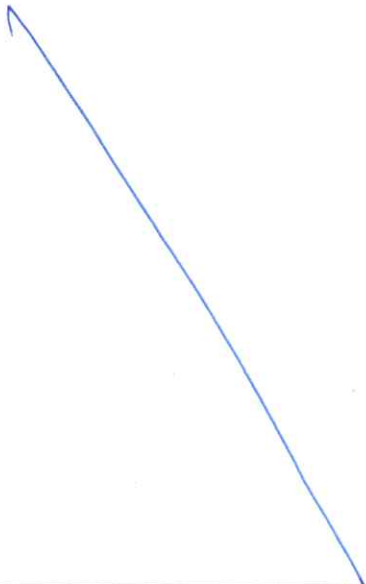
Bhulekh
Bhumiportal
(Namit scheme)] has been launched.

Nation Generic Document Registration System (NGDRS) is one such step;

Advantages & Features.

- ① Single window for all land related transactions.
(Registration, Payment of taxes, Title deeds and ownership)
- ② Person need not visit multiple offices multiple number of times for the Land records registry.

The poor quality of land records and digitization of land records is a major challenge which NDRS aims to address. In this regard NDRS must be popularised and implemented throughout the country.



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
(PM FBY) is the crop insurance
scheme of Government of India.

Some of its features: -

- ① Uniform Premiums for
different category of crops.

[	Kharif - 2% Rabi - 1.5% Horticulture & Annual crops - 5%
---	--
- ② Use of technology for imple-
mentation.

What all technologies have
been used :-

- ① Improved data gathering
through use of GIS, GPS
Remote sensing for
assessing damage &
losses.
- ② Use of Drones for evaluation
and monitoring.
- ③ Digital complaints and

redressal measures like use of
Image-phone based application
for claims.

(4) Digital land records are
being used.

(5) Digital payment for the
sum insured and the
premium payment through
IMPS, NEFT etc.

Earlier crop insurance models
relied exclusively on human
intervention whereas PMFBY
leverages usage of technology.

However, the operation has been
far from satisfactory, the
reasons are :-

- (1) Tussle between state
government and central
government regarding
premium payment.
- (2) Involvement of private
insurers who delay the
release of insurance
amount in case of
calamities. Long settlement
period meets the purpose
of insurance.

- ③ Relevant changes brought about central government with regard to premium payment.

Way out :-

- ① Premium payment must be ensured by state and central government at a timely manner.
- ② Prompt and timely release of claims by invoking technology like (GPS Drone) to assess damage and digital payments (to reimburse the claims).
- ③ Beed Model of crop insurance wherein in case of no claims the assured premium being returned to government and in case of large claims the burden is shared with the insurers; needs to be implemented.

Crop insurance insures farmers against highly vulnerable climate and ensures food and economic security to the country; hence all efforts to be made to make crop insurance penetrate more into agricultural system.

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 and the non-conventional sources of energy apart from the fossil fuels and conventional sources.

eg. solar energy, wind energy etc.

Renewable energy (RE) is the need of hour in light of climate change and India is making rapid strides towards transition to renewable energy.

How??

Per- of India's Nationaly Determined contribution to produce and meet 50-1. of energy requirement through RE. India intends to produce 500 GW by 2030; from Renewables.

Energy security is of prime concern in promoting and transforming of women.

How can RE transform life of
women and unlock their
Potential

- ① Women can be involved in
production of Renewable energy
Solar energy — PM-KUSUM
Scheme for solar pumps
SRISTI — for solar rooftop
installation to generate energy.

Women can be have decision
maker in implementing this
energy source.

e.g. Solar Mamas in Africa.

Skill development and training
can be harnessed to increase
role of women in producing
solar energy.

- ② Biomass gasification and
energy generation through
biomass and agricultural
wastes.

(Crop residues Cow dung)
Rural women can be leveraged
for Biogas generation and
gasification through
Self help groups and cooperatives.

Energy security and access to
Renewable and Clean
energy can lead to women
empowerment through:-

- ① Improved learning outcomes.
- ② Increased employment-
opportunities.
- ③ Reduced drudgery in collecting
Fire wood and Fuel wood.
- ④ Equitable and sustainable
growth through women
SHG involved in SHG
generation.

RE

Renewable energy is the sunrise
sector which has potential
for economic development
and social development along
with environmental sustainability
as women are more vulnerable
to climate change; RE can be
a game changer in this
regard.

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 refers to the large scale change in the existing atmospheric and weather patterns of a place.

India is already facing the challenge of hunger and malnutrition and climate change is going to worsen the food security situation and worsen the condition of life.

How climate change (CC) can impact - hunger and malnutrition

- Climate change increases the vulnerability of disasters like drought, floods which can cause widespread crop loss and damage.
- CC can also have a profound impact on the

existing cropping pattern.

(Yield of wheat is getting reduced due to higher temperatures).

⇒ An adverse impact on production of many fruits and vegetables.

(Temperate crops are likely to be more impacted because of the climate change)

⇒ Climate change has the potential to cause large scale displacement (climate refugees) who would be highly vulnerable to food security.

⇒ CC is promoting degradation and desertification which further reduces the arable land. India has 17% of world population and only approximately 3% of land resources, this would endanger the situation further.

CC is going to cause multitude of problems like shortage of arable land, reduction in yield non-production of many essential crops which are essential for food and nutrition security.

The goal of achievement of Zero hunger by 2030 would ~~be~~ remain a distant-dream as the very existence of agricultural and food production system is at threat.

Way out :-

- ① climate resilient-agriculture needs to be promoted.
(NIRA by ICRAR)
- ② using appropriate crop management and cropping pattern.
- ③ promotion of millets as they ensure nutrition and food security and can withstand climate change.

Proper technological, agricultural and scientific interventions are needed to thwart ill effect of climate change on food security.

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 are the latest technologies as part of Industrial Revolution 4.0. In this a digital twin of the actual production system is made to study the real production system.

Digital twin technology studies and analyses the technology from temperature, pressure, thermodynamics and other perspectives.

Benefits

- ① Helps to study a new nascent technology and machinery and improve
- ② increases efficiency of the machines.
- ③ Reduces the chances of failure of

mechanisms.

Challenges -

- ① very costly computer generated programmes are needed which entails huge cost.
- ② chances of misuse and manipulation of technology to weaponise are there.
- ③ Emerging economies and underdeveloped countries might face the risk of losing out in competition as they are at very nascent stage of industrialisation.

Digital twin technology has potential to revolutionize industrial revolution and promote industrial efficiency hence its use and development must be harnesses and promoted.

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 the financing of terrorist and extremist activities by states, non-state actors, NGOs, individual etc.

Why it has remained a Challenge.

- ① No clear cut concrete definition of terrorism exists, and in lack of concrete definition tackling funding issues remain a challenge.
- ② Many states are using it as a tool of achieving their ulterior motives.
 e.g. Pakistan terror financing is a state policy against India.
- ③ Existence of safe tax haven countries.

- ④ Proliferation of darknet, Cryptocurrency, illicit drugs trade which makes it even more difficult to track and hunt the financing.

What are Global efforts in
warring terror financing??

① Financial Action Task Force

— It comes out with Greylist and blacklist — to check on countries known as perpetrators of terror financing.

"Pakistan, Iran, Turkey" have been at different times placed in Greylist.

- ② UN's resolution on tackling organised crime and Check on drugs trade and Narcotics.

Way forward :-

Stricter implementation of FATF Greylist and blacklist and soliciting international

Collaboration to choke the funds
for terrorist organisation.

- Working the problem of
Drug trafficking, human
trafficking through multilateral
support and cooperation as they
are the major source of
terror financing at international
stage.
- coming out with a global
definition of terrorism
as that of India's proposal
at the United Nations.
(CCIT) —

Terror financing helps the thriving
of global terrorism nexus,
Proper sensitization along with
international collaboration
backed by national laws is the
need of the hour to check
this menace.

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 is the method of technical and cognitive skills like intelligence imported into the electronic systems (e.g. computers, smart watches, smart cars)

It relies on the usage of Internet, data and sensors.

AI can be a double edged sword with regards to National security perspective

— How AI can act as opportunities in National security.

- ① Tracking down radical content-online.
- ② Identification of criminals and Terrorists through facial recognition and behavioural pattern.

- (3) Can be used for surveillance in sensitive areas and on ^{online} (e.g. Tracking through ^{social media} and monitoring the activities of antisocial elements)
- (4) AI can help check the cyber security threats by easy identification and ~~wrong~~ discrimination.

How it can be a challenge.

- (1) Increases the scope of warfare from traditional to hybrid warfare with involvement of robots and AI powered equipments and weapons.
- (2) AI can be used for training and recruitment by terrorist organisations by integrating it on social media to identify lone wolf attackers and antisocial elements.

- ③ AI can lead to increased Bank frauds and Scams by invading into the mobile.
- ④ Non-local nature of warfare, AI can be operated from remote locations and different jurisdictions making it relatively difficult for law enforcement agencies to catch hold of.

AI is a progressive technology and has got immense potential in terms of destruction and opportunities. The opportunities need to be harnessed and the challenges need to be identified to remove any imminent threat and take course corrective measures.