

VISION IAS

www.visionias.in

GENERAL STUDIES (TEST CODE : 2091)

Name of Candidate	NIRKHIL SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	1157317
Center	ONLINE	Date	04/09/2023

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

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.

VisionIAS

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 refers to the effectiveness of water that is applied to crops to increase yield of crop and productivity of land.

Efficiency of water remains less than the world's average.

Reasons behind low efficiency

- i- flood irrigation as the major way of irrigation
↳ leads to wastage of water and water logging. (increasing salinity)
- ii- Dependence on monsoon
↳ 52% rainfed Agriculture, 48% irrigated.
- iii- Water Intensive crops such as sugarcane and rice in water deficient regions such as punjab.
↳ 25% land area under rice cultivation in India.

- iv - high cost of modern irrigation systems
(70% cost related to irrigation)
- v - land fragmentation (1.08 hectare average
farm size)
↳ low mechanisation

Measures to increase water use efficiency

- i - micro irrigation practices
↳ such as drip irrigation, spinkular irrigation etc.
- ii - Incentives by government to reduce upfront costs of irrigation systems
- iii - Sustainable Agriculture practices
↳ such as zero row mulch to save farmland moisture.
- iv - Water efficient crops such as millets
in drought prone regions.

Schemes of government such as Water shed development programmes should be implemented for increased productivity of Agriculture.

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 in India refers to provision of food through fair price shops under the National food security Act and Antodaya anna yojana.

food basket
Diversification of Public distribution

It refers to increasing of choices ^{in food} under the scheme including pulses, millets, fruits and so on.

Why → From PDS have been focused on grain cereals like wheat and rice since inception
→ This has led to skewed Agricultural production in favour of grains, cereals.

Benefits of diversification

- i - Social

(a) Better nutrition uptake : to reduce hunger

and micronutrient deficiencies.

(b) Better nutrient uptake

-ii- Economic benefits.

(a) Removing the pressure on cereals, thus
reducing the food subsidy bill of India

(b) Better remuneration for farmers of
millets, fruits, and so on.

(c) Saving on electricity subsidy by
reducing of water usage by drought
resistance crops

-iii Environmental benefits

(a) Reduced fertilizers and pesticide use

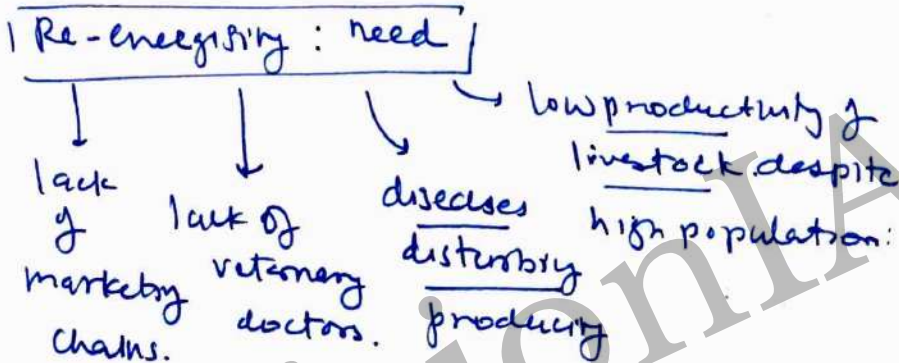
(b) Reduced groundwater uptake
and contamination

(c) Reduced instances of stubble burning
due to shift from rice cultivation

In the long term shifting to DBT (Direct Benefit
transfer) can enhance benefits for India.

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 contributes 30% to Agricultural
GVA and has a 7.9% Capital annual
growth rate (CAAR).



Role that livestock sector can play in sustainable
livelihood and increasing income of farmers

- i- off season income → to reduce the under-employment in farming sector and provide new avenues.
- ii- increasing demand due to growing urban population. opportunity for farmers for additional income.

- iii - Intervents to the family farmers and to the supply chain
↳ to reduce the issues of hunger.
- iv - ~~Do~~ Resistant varieties of India when crossed with ~~exog~~ exotic varieties can provide higher yield to farmers
- v - It can also provide avenues for empowerment of women (due to increased farm mechanization)
- vi - high co-operative farming potential of sector → Amul
- Step taken → NKUL mission
↳ National livestock mission
↳ schemes for addressing FMD and Brucellosis
- Strict implementation of schemes and promoting co-operative farming can go a long way in increasing the productivity of farm sector through livestock.

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

Trickle down theory refers to the idea that high economic growth will automatically result in reduced poverty and increased benefits to marginalised sections.

Positive role that economic growth ^{played} in Post Reform period for inclusive growth:

- i - Reduction in poverty: Indian poverty in recent times have reduced from 22.5% to 10.2% (12.3% decrease) (World Bank).
- ii - Increased opportunities for skilled personal: through development of service sector (34% employment).
- iii - Better services of Health and education
e.g. Telemedicine and applications such as e-dx through for education

- iv - Increased opportunities for farm sector
↳ through increasing mechanization and global supply chains
- v - Better Banking penetration (14.7 per 100,000)

Issues with this development

- i - Inequality: top 10% hold 77% of the income (Oxfam) report.
- ii - Shift from Agricultural dominant to service dominant economy
↳ (leading leaving the labour intensive manufacturing sector at 17% contribution to GDP)
- iii - Increasing hunger (107/121 in Global hunger index).
- iv - ~~Majority~~ majority of benefits of farm sector won't be covered by large farmers.

To ensure equal and inclusive growth agriculture sector has to be remunerative. Further growth that increases employment should be the way forward.

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 ~~prog~~ program was launched in 2018 to reduce pollution and increase the air quality of targeted cities.

Positive outcomes of the mission

- i- Establishment of monitoring centres for air quality in cities.
- ii- Reduction in Particulate matter concentration in cities.
- iii- Awareness among citizens regarding harmful effects of pollution.
- iv- Better governance measures to decrease pollution from industries and chimneys.

Issues

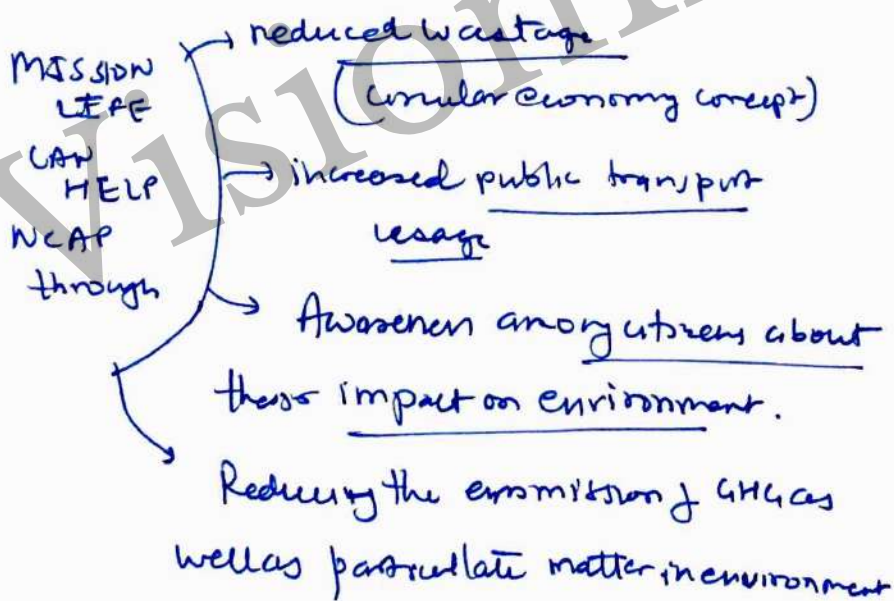
- i- India 8th highest polluted countries (IQ Air).

- ii - National capital region is the 2nd most polluted city (I & Air)
- iii - Pollution through transport and vehicles
Still a cause of concern

Mission LIFE

refers to Life style for Environment.

↳ Lifestyle changes that take into account the impact that it would have on nature.



Mission Life aims to integrate positive lifestyle for addressing the issues of pollution and climate change. Successful implementation can manage the issue of intergenerational equity.

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 in recent times such as Hawaii wild fires

have increased, impacting ecosystem, human life, as well environment.

According to Indian state of forest report, 2021, 38%

of India's total forest area prone to wildfires.

Impact of wild fires on ecosystem

- Positive impact

-i- Rejuvenation of the vegetation through removal of weeds and parasite organisms.

-ii- Increased soil fertility of soil through humus generated.

-iii- Creation of ecotones for increased diversity

Negative influence

-i- Destruction of flora as well as fauna from forests.

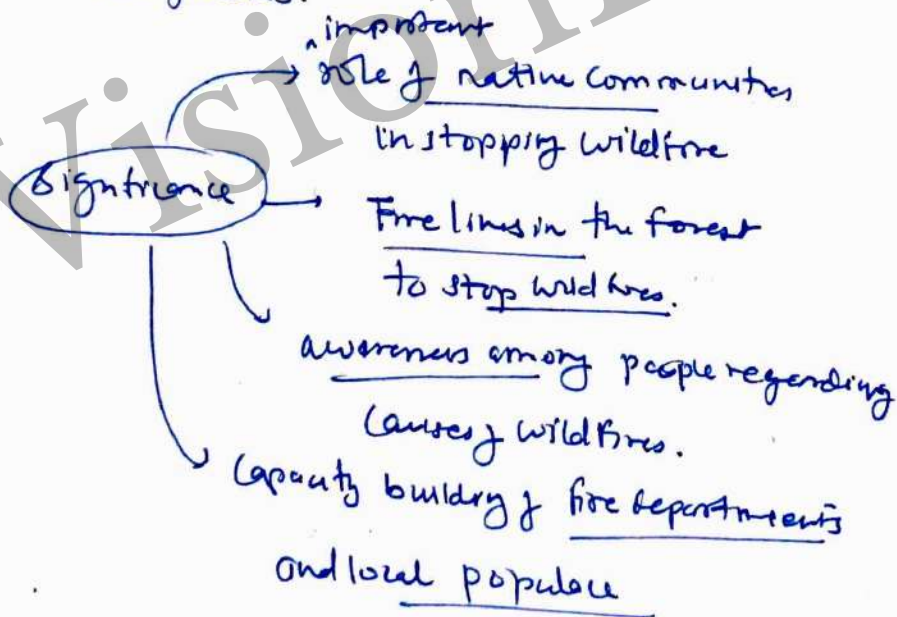
ex- Koala in Australia threatened with

Extinction after wild fires.

- ii- Pollution in environment through to smoke and particulate matter.
- iii- Increased GHG emissions, increasing global warming (Positive feedback).

Significance of UNEPs fire ready formula

It aims to reduce the impact of wild fires in the ~~communit~~ communities and to the ecosystems.



Wildfire in recent time have grown out of hand and require the cooperation of international domain to deal with the problem.

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

SSLV (Small Satellite Launch Vehicle) is the vehicle for launch of small payloads in the low earth orbit (LEO)

Ans → It is a three stage launch vehicle.
→ All 3rd stages are present in SSLV.

Advantages of SSLV

- i - Low assembly time to few hours (~~72-96~~) from days and months taken for larger launch vehicles.
- ii - Low cost; making it affordable for small satellite missions
- iii - Portable and can be assembled and transported according to need.

SSLV as game changer

- i- It can be attractive for private sector
to launch satellites
↳ owing to low costs and portability.
- ii- Co-operation with international
communities
↳ e.g. → Singapore has been collaborating
with India for launching satellites
- iii- Increasingly entrepreneurship possibilities
↳ increasingly employment of products
- iv- Can be used as a specialised vehicle for
small missions
↳ While the PSLV and ASLV can be
used for interplanetary missions

To increase its benefits implementation of
Indian space policy in spirit can be the ^{ideal} way
forward.

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 unlicensed use of traditional intellectual property for commercial usage.

~~Part:~~ Patent for usage of turmeric was one example of biopiracy for India.

Bio piracy as a concern

- i- Can deprive local communities of the benefits of the commercialization
- ii- Exploitation of traditional formula.
e.g. - Basmati patent.
- iii - unsustainable use affecting the ecosystem as well as communities
- iv - form of neo-colonialism
↳ as countries such as Africa are deficient in technology to force such violations.

Steps taken by India to protect traditional knowledge

- i - Traditional knowledge digital library
: to catalogue all the available formulations on internet.
- ii - Signing of ~~Convention~~ Convention on biodiversity.
↳ It emphasises the fair use and sustainable benefits of resources.
- iii - Protection of plant varieties and Act, 2001
↳ to protect exploitation of farmers and protection to them
- iv - Environment protection Act, 1986 → to protect exploitation of environment.

To further increase the protection, collaboration with international community and increasing awareness among local population is the ideal way forward.

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 are part of central Armed police
forces that guard the Indian border at
Indo-Myanmar junction.

Challenges faced by Assam rifles

- i- Difficult terrain of the region: makes it
difficult to work in face of N-E
insurgency.
- ii- guerrilla warfare by insurgents harm
the personnel.
As they are not often adapted to
such war warfare.
- iii- Cross border movements of people in the
border areas make it difficult to identify
the people insurgents, immigrants and local
population

-iv-

→ Cross border narcotics trade in the region

due to ~~prox~~ proximity to golden triangle

↳ makes it more difficult to stop financing

of insurgents.

Way forward: Reorientation of workforce

-i- Tech-savvy force can help deal with

difficult terrain and guerrilla

warfare

↳ e.g. → concept of smart border,

night vision etc.

-ii- Development part of the force should
be emphasised

↳ to increase the trust of

the people.

-iii- Co-ordination with local police as well

as central forces would help in tackling

of Narcotic and Immigration

Challenges.

ASSTAM rifles could be reoriented towards accountability
and proportionate use of force to address the
insurgency issue.

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

Space weaponization such as Shakti test by India display the manifestations of space capabilities of nations and can have de negative ~~impler~~ implication -s for world peace.

Reasons Behind weaponization of space

- i - Increasing Research and development in space domain has made it possible to send weapons to space.
↳ increasing defence expenditures
- ii - Arms race among world's major powers and demonstration of hard power by the Nations.
- iii - Concept of deterrence gaining new meaning as land, water and air capabilities are present with every country.

-iv - Increasing global tensions

eg - Russia Ukraine war, US - China brinkmen
- ship and soon.

Implications of space weaponization

-i- threat of Kessler's syndrome.

↳ destroying the navigation and ^{other} good
purpose satellites

-ii- further ~~is~~ increasing weaponisation as

countries will try to reduce the ~~dist~~ ^{other}
possible gap ~~+~~ in preparation against
adversaries.

-iii- Nuclear threat from space

↳ if nuclear weapons are
sent.

-iv- complete reversal of peace established after
cold war, due to arms race

-v- spending on defence would increase, affecting
social causes.

To reduce this phenomenon, international negotiations
~~to~~ and modification of outer space treaty is
the need of the hour.

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

Jawaharlal Nehru port (JNP) is located on the Arabian ~~city~~ sea coast and handles a large amount of cargos from Northern and Western Indian hinter land.

It has been managed under the Landlord port model.

[Landlord port model]

- Landlord port model refers to the ownership by government of the the port.
- However all the operations are carried out by the private sector
- It ~~is~~ enables flexibility, better governance and investment in the port model.

Other models for the development of ports.

- i - Private sector ports: These ports are owned as well as operated by private sector.

⇒ usually minor ports are regulated under this.

⇒ Better services such as low turnaround time to

⇒ However higher costs as deterrent.

- ii - Public sector ports: These are owned and operated by public sector.

⇒ Often major ports are involved.

⇒ recognised by bureaucratic hurdles and red tappings.

⇒ high turnaround times.

- iii - Public private partnership: Involves involvement of both public and private sector under different arrangements

Such as -

- (a) ↳ BOT → Build operate and transfer - private sector Builds and transfers the profits to public sector.
- (b) ↳ leasehold model: Public sector entities provides prolong lease to private sector.
↳ private sector pays defined ~~also~~ amount to ~~the~~ owner.
- (c) landlord is also ~~one~~ one of the types of involving public sector and private sector together.
- ↳ landlord post model is therefore one of the model of post management. It enhances efficiency and ensures accountability and has been in ~~use~~ use for in recent times.

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

Sub mission on farm mechanization aims to increase the adoption of mechanization in farming sector.

Mechanization in farming sector stands at 40-45% in India.

Achievement of SMAM

- i - Provision of new technologies such as tractors, seeders to farmers
- ii - Increased productivity of farms through the use of these technologies.
- iii - Involvement of private sector in providing the technologies to sector
- iv - focus on the co-operative farming

has increased mechanization of farm sector.

- v- Monitory of mission by government has led to better outcomes by plugging the issues and gaps

Challenges that are present

- i- farm mechanization still remains low:
40-45% is paltry when compared to
~~40~~ - 95% is US and 55% in China.
- ii- ^{goal of} Remunerative farm holdings have not been achieved despite implementation of mechanisation, owing to
(a) land fragmentation (1.02 hectare average farm size)
(b) Lack of penetration of cooperative farms (mostly concentrated in western India)
- iii- Awareness among farmers regarding the mission is has been low

↳ leading to low utilization of Benefits.

Way forward

-i- Awareness generation should be the major aim of scheme.

↳ through Panchayats and farmer producer organizations

-ii- Leasing based model of mechanization

Should be followed to reduce the cost prohibition

↳ Community centres for leasing in Madhya Pradesh for example.

-iii- Increasing the pooling of land through clear titling, and cooperative farming

Though the scheme promises mechanisation,

revamping the scheme with focus on

downfalling the farmer support through FPO

and civil society can help in achievement of goals of mechanization.

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 sector refers to the processing of raw food to add value and increase ~~the~~ shelf life.

It contributes 1.6% to the GVA of the country.

Potential of food processing sector

- i- Reducing the food wastage
↳ to the tune of 92000 ^{crore} ~~crore~~ in India
- ii- Large farm base in India
↳ number one producer of cereals, pulses and millets
- iii- Providing employment to the skilled as well as unskilled youth
- iii - Caters ^{to} the demand of nutritious and healthy food (107/121 in global hunger index)

Challenges that food processing sector faces.

- i- Informal sector dominates the sector

↳ about 70% of food processing enterprise are informal

- ii- Weak linkages to the farmers and to the market
- iii- Lack of skilled workforce in India
- iv- Excessive Bureaucratic hurdles in land allotment and getting the permissions required, i.e. red tapings.
- v- Lack of connection to the export markets.
↳ despite being present at a crucial junction to western and eastern market.
- vi- Lack of cold storage facilities
↳ 30-40 lakh tonnes shortage (Palwai Committee)

Role of Digitisation in solving challenges and tapping potential.

- i- transparent allotment of clearances and
↳ through single window portals

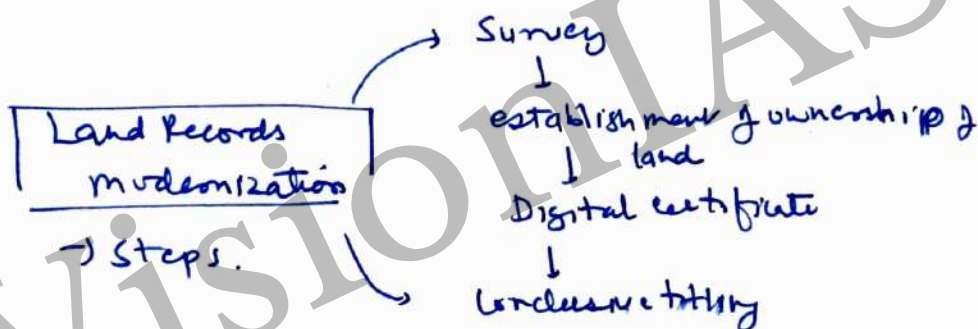
- ii - ~~connect~~ connecting to the farmers creating backward linkages
↳ Through programmes such as ~~and~~
 - e-NAM
- iii - Better estimation of demand in the market
through more digitized monitoring.
- iv - Reducing food wastage through e-negotiable warehousing receipt systems
↳ and monitoring of food storage godowns.
- v - Better estimation of demand of skilled workforce and connecting of industry with academia

To utilise this potential increased push for Research and development spending as well as increasing digital penetration among rural areas is the need of the hour.

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

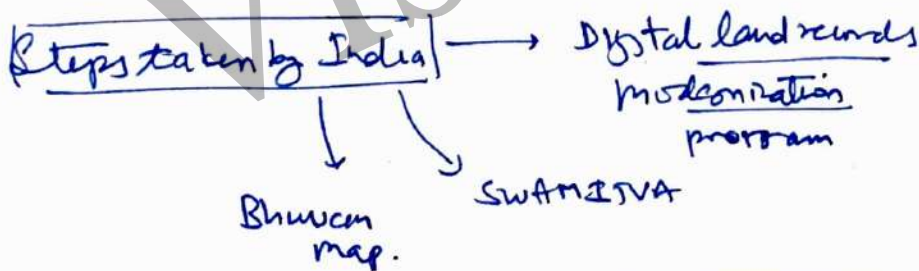
Land records modernization refers to re-interpretation and digitizing of land records to establish conclusive titling and mapping of lands in India.



Significance of land record modernization program

- i - To reduce the litigations in lower courts
 ↳ about 2/3 of the litigations in lower courts are about land records.

- ii- Better collateral ^{certificates} for farmers to provide for loans
↳ ~~to~~ so that formal sector lending can increase beyond 70%.
- iii- easing land leasing and increasing the concept of co-operative farming
- iv - Reduce property frauds
↳ Through conclusive titling of lands.
- v- Increase of farm mechanization in the long term from current 40-45%.



National generic Document Registration system

Features. →

- i- The system provides for registration of documents related to land

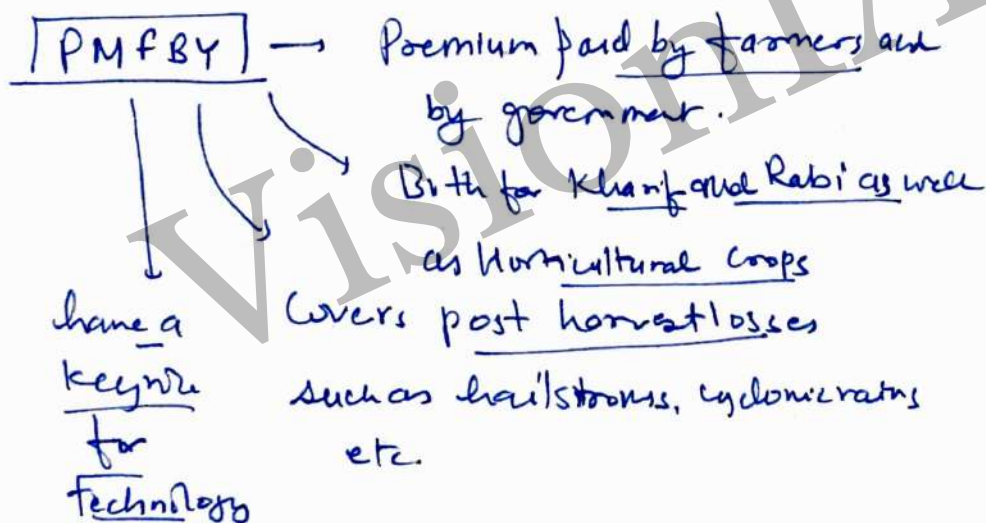
- ii- provides a certificate and identification number to the documents.
- iii- aims to ease the digitising of documents for ~~best~~ hassle free access to documents
- iv- works through gram panchayats and district blocks.
- v- improves governance related to land
 - ↳ through easier mapping of ~~the~~ village lands.

Land record modernization is a necessity for increasing investment in farming sector to increase the income of farmers and revolutionise the land governance in India.

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 the insurance oriented scheme of central government to protect farmers against crop losses and increase investment in farm sector.



The role that technology has played in its success :

- i- technology has enabled the farmers to know about premiums that they have to

pay.

- ii - Monitoring of the program by government on whether the insurance company has provided the insurance or reimbursement
- iii - Monitoring of the crops sown in the season, for better supply estimations
- iv - It has helped connect farmers to government as well as farmers insurance companies online
- v - has increased investment in farming sector, as risks have been reduced
- vi - Provided inputs on crops to sow by monitoring the soil quality.

Further changes can be made to make
Scheme farmer friendly.

- i - Grievance redressal portal for farmers

can go a long way in tackling the requirements
and issues that they face

-ii- Adding the weather related warning to
the schemes can help farmers manage
their produce

↳ to reduce wastage

-iii- faster processing of insurance claims

↳ by insurance ~~co~~ companies

↳ also faster ~~pro~~

-iv - faster provision of premiums by state
governments

↳ often premiums are delayed

by state governments.

Pradhan Mantri Fasal Bima Yojana. caters to

the needs of farmers. To reap benefits out of such
schemes detailing of food processing schemes with
PMFBY can increase remuneration of farmers.

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 मामर्थ्य 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 including the solar, hydro
- power and bio gas has been the prime target
of India to fulfill the 2030 decarbonization target.
In this regard, adoption of renewable energy
also alleviates the concerns of women in India.

Potential of renewable energy to transform
the lives of women in India

- i - Reducing the burden of collecting fuel
wood on women
↳ by provisions of solar cookers
and solar bio energy.
- ii - They also help in reducing the indoor
pollution caused by wood fuel

↳ women are mainly affected by such pollution

-iii- Increased energy in farm sector through
schemes such as PM-KUSUM

↳ This would increase water availability
and increased yield for farms managed by
women (Bv. of all economically active
women in ~~the~~ farm ~~sector~~ sector)

-iv- Increasing employment opportunities
can be a potential to generate
for women.

-v- Use of biogas for energy would
help in recognition of their contribution to
livestock sector.

Challenges.

-i- Cost of solar energy plants and
technologies are prohibitive
↳ major challenge in PM-KUSUM Adoption

- ii- lack of skills among women to
utilise the opportunities of employment.
- iii- lack of awareness in the rural areas
↳ about the benefits of renewable
technologies.

Way forward

- ↳ Increasing skill oriented
training for women
- ↳ Incentivising the utilization
of renewable energy
↳ to reduce cost factor.
- ↳ Increasing awareness among
rural areas about benefits.
- ↳ Monitoring & Adaptation of renewable
energy.

↳ To decarbonization target can act as a
great opportunity to reduce the women discrimination
and achieve the sustainable development
goals of climate action and gender equity.

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

Sustainable development goal ① aims to remove hunger and achieve hunger free society.

The progress towards this goal though positive have been marred by issues of climate change.

India's commitment to achieve zero hunger by 2030. Steps taken

- i - POSHAN Abhiyan → to reduce malnourishment
- ii - POSHAN Anjanwadis → for infants and children below 1-3 years.
- iii - NFSA (National food security Act)
↳ for poor
↳ coupled with Antodaya Anna yojana.
- iv - ONE NATION ONE RATION CARD

Despite these scheme India ranks 107/129 in Global hunger Index.

Role of Climate change in exacerbating the issues of hunger and malnutrition

- i - ~~Decrease~~ Decreased productivity of crops
↳ due to increased temperatures.
- ii - climate induced migrations; due to
disasters and extreme weather events
↳ about 80% of all climate induced
migrants are women.
- iii - extreme weather events also lead to
closure of schools and hospitals
eg - floods and droughts
↳ interrupting targeted programmes
such as ICDS.
- iv - Increasing chances of pandemics such
as COVID-19 → by increasing temperatures
and moisture
↳ Poor and hungry people bear
disproportionate impact of such pandemics

Way forward

- i- Focused intervention on implementation of schemes such as POSHAN Abhiyan and ICDS
- ii- growing of heat resistant and disease tolerant crops.
e.g. millet. (SHREE ANUSA yojana)
- iii- Addressing the climate related migration by formulation of guidelines.
- iv- Mapping and forecasting of extreme weather events
↳ to better prepare against such issues.

The measures to stop hunger are at our fingertips.
Concerted attempts by whole of society approach
can reduce this ~~un~~ ~~un~~ ~~un~~ unnecessary
suffering.

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 the creation of digital replicas of places, things and places, for better planning and implementation of schemes.

Digital twin technology

It involves → scanning of the places and cities through satellite applications ↓
→ creation of digital map. ↓
→ use of this map for better uses of planning.

Benefits of digital twin technology

- i- Plan Planning of schemes can be much better through digital implementation,

Checking the loopholes, re designing the schemes.

- ii- formation of disaster resilient infra structures
through \hookrightarrow by utilising the terrain information
- iii- Better traffic control
 \hookrightarrow By looking at black spots, reductions
in accidents ~~and~~ can be achieved.
- iv- Architectural designs that could include
Blue green spaces and earthquake resistant
structures.
- v- Monitoring scheme implementations,
with housing sector and slum
redevelopment.

Challenges

- i- Advanced technology
 \hookrightarrow only few of the corporates provide
this technology
 \hookrightarrow skills among personnel less developed
due to Advanced nature.

- ii- Privacy issues that can spread out of context
 - ↳ as every house can be digitally created.
- iii- Putting the plan to implementation requires more than just digital twin technology
 - ↳ better coordination among departments and so on.

Way forward

- ↳ Capacity building in government departments for digital twin technology
 - ↳ Skill development.
- ↳ Addressing privacy issues through adopting technologies such as Blockchain.

↳ Coordination among the departments for smooth planning.

↳ Finding out the loopholes that exist in implementation and creation of digital twins and addressing them in timebound manner can help in using this tech.

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 in 21st century refers to ways and means by which terrorist collect money for their operations. It includes fake currencies, narcotic trade, ransoms etc.

Steps/efforts to contain terrorism financing

- i- National laws → ex- Prevention of money laundering Act, 2001 (PMLA) is the major act by Indian government to stop terrorist financing.
- ii- International bodies for collaboration
ex- FATF (Financial Action task force) and Interpol. INTERPOL
- iii- Stricter guidelines on airports for narcotic trade.
- iv- Security Features in notes and currencies

to reduce the instances of fake currencies.

- v- efforts by UNSC (United Nations Security Council) to designate terrorists through sanctions committees.
 - ↳ to freeze their assets

Challenges that remain in addressing the issue

- i- emergence of cryptocurrencies → provide anonymity and privacy for illegal Act.
- ii- Weak implementation
 - ↳ FATF grey and black list have often been politically motivated rather than by genuine problems.
- iii- lack of bilateral collaborations
 - ↳ to exhacite the criminals involved in terrorist financing.
- iv- Increasing use of Internet has increased dark net users and online narcotics trade

-v - traditional measures such as HAWALA methods are also used.

Way forward

-i- Switching to digital currencies :
↳ to reduce country of currencies.

-ii- International collaboration for extraditing the terrorists.

-iii- better implementation and binding declarations through bodies such as FATF

-iv- Rising above the narrow political gains in UNSC like multilateral bodies.

-v - ~~See~~ Better implementation of KYC guidelines to reduce HAWALA routes.

↳ open borders and globalised world make it easier for terrorists to collect ~~from~~ finance. only collective will to eliminate the source can help in dealing with the issue

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. 15
Discuss in the context of India. (Answer in 250 words)

Artificial intelligence refers to thinking
like
capabilities in humans in machines. Manifestations
include GPT, BARD, DALL-E etc.

Artificial intelligence can have a security angle too, given the technology that it provides.

Opportunities for National Security

- i- Better training of military teams through
Artificial intelligence coupled virtual
reality systems
- ii- Analysing the security threats by
use of machine learning
e.g. → feeding in the data about cyber
attacks can give patterns and solution
invisible to human eye

- iii- Increased distance if betw AI powered system create place in cyber security
- iv- offensive capabilities through AI powered drones and machines
- v- AI powered ~~data~~ designing of terrains can help in better border monitoring

Challenges from AI to National security

- i- Sophisticated cyber attacks
↳ that can exploit the 'zero' day vulnerability.
- ii- terrorists can use the mapping of terrain by AI to target cities
- iii- AI powered drones and offensive technologies can be biased and will take the burden of crime
↳ as the machine would commit the crime.
- iv- International conventions lack the rules and

regulations for AI powered offensive capabilities.

Way forward

- i- Adoption of Budapest Convention can help in addressing the digital technology related issues to national security.
- ii- Better training of teams of CERT-IN to tackle AI related challenges.
- iii- guidelines for Data protection to protect from ransomware attacks driven by AI → on lines of GDPR.
- iv- Evolving ~~not~~ international laws and conventions to regulate the use of AI technology.

AI is often considered as double edged sword. Effective formulation and implementation of regulation can help in utilisation of opportunities.