

VISION IAS

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GENERAL STUDIES (TEST CODE : 2091)

Name of Candidate	Shoham Teberwal		
Medium Eng./Hindi	English	Registration Number	995991
Center	Online	Date	07-09-23

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
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Total Marks Obtained:

Remarks:

INSTRUCTIONS

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

Is student recommended for One-to-One mentoring?

Recommended

Strongly Recommended

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

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp. Punjab & Sind Bank), Dr. Mukherjee Nagar, Delhi-110009

EVALUATION INDICATORS

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

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

1. 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

Agriculture accounts for 87% for groundwater usage. The water use efficiency for both canal and tubewell irrigation ~~are~~ is less than 40%. Share of micro-irrigation is very little.

Reasons

1. Use of inefficient irrigation methods like flooding of agricultural land
2. Higher share of inefficient methods like tank and tubewell irrigation (>66%) without irrigation scheduling
 - irrigation & power subsidies
 - distortion due to MSP, state policies
3. Lack of adoption of micro-irrigation (sprinkler, drip irrigation)
 - high cost
 - small land holdings
 - lack of extension services
 - lack of education & awareness

Registrar

Date

INSTR

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Registration Number
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आदि)।

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Measures

1. Implement PM-Krishi Sinchai Yojana
'Harkhet ko Fasal', 'Per Drop, More Crop'
→ address challenges like lack of adoption
due to pervasive subsidies
→ more fiscal incentive
→ promote micro irrigation
2. Increase extension services & awareness
on improper irrigation like salinisation
3. More adoption of practices like
irrigation scheduling & smart farming
(agri-tech startups)
4. Promote practices like participatory irrigation,
watershed development (Kalejwan Siddhi)
5. Leverage command area model

This will help in not only
water-use efficiency but also fertilizer use
efficiency and help transition to climate smart
agriculture (Deccan High Level Principles)

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

India has a robust PDS supplying food grains to 80 crore individuals. Current government measures of adding millet to basket (beyond rice, wheat) and fertilized food grains will have many benefits.

Social Benefits

1. Address challenges of hidden hunger and malnutrition (eg. success in odisha millet initiative)
2. Help support tribal and indigenous communities who are traditionally millet producers (eg: G20 representation by tribal women from odisha)
3. Promote ancient cultural practices lost due to Green revolution
4. Have positive health benefits (eg: low GI index)

Economic benefits

1. Promote farmers income, as they have higher MSP, but less cost of production (low fertilizer requirement)
2. Help diversify procurement from traditional Northwest region to Karnataka, Rajasthan, Maharashtra (major millet producers)
3. Fortified food is cheapest method to address malnutrition (Copenhagen Consensus)

Environmental benefits

1. Reduce adverse impact of high fertilizers & irrigation use by rice & wheat
 2. Millets can be grown in hardy soil with low water needs
 3. They help to recycle soil nutrients (therefore reverse land degradation)
 4. Reduced methane emissions
- Beyond PDS, they should be part of food-processing sector as well. Recent private sector initiatives (Eg: Millet Bread) are welcome

3. क्या पशुधन क्षेत्र को पुनः सक्रिय करना भारत के किसानों की संघारणीय ज़रूरतों 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

Government plans to double farmers income
Livestock sector which contributes $\frac{30\%}{\text{of}}$ of
Agri GVA, employs $\frac{88\%}{\text{population}}$, $\frac{96\%}{\text{of}}$
work done by women is hailed as
important for increasing farm income under
Integrated Farming System.

This was also recommended by
Ashok Dalwai Committee. However, sector
faces some challenge & need to reenergise
it is important →

Need for re-energising

1. Lack of veterinary support and extension services (in light of rising diseases like umpy skin disease)
2. Indigenous variety declining
3. Small, unorganized livestock farmers

4. Lack of cooperative culture (beyond Amul, Nandini success in south & west India, north India lacks it)

5. Need for more credit support
If these are rectified then →

Promote sustainable livelihood

- ↳ Address food security, fuel security
- ↳ Generate newer avenues like bio-fuel
- ↳ Livestock be used as draught animals
- ↳ Contribute as local building material (Gobar cakes)

Promote income

- ↳ Added income source even in vagaries of monsoon
- ↳ Even cow urine can be sold (Eg: Chathigaah Nyay model)

Government measures like Gokul Mission, Animal Pandemic Preparedness Initiative, eGobal, Infrastructure fund are step in right direction

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

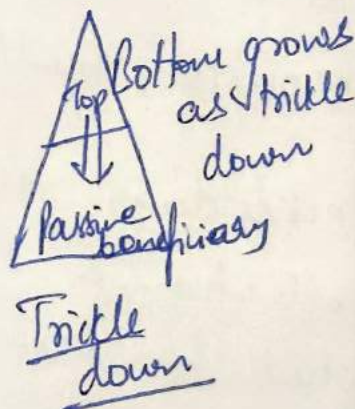
Do you agree that high economic growth in the post-reform period has not resulted in growth trickling down to the marginalised sections, rendering inclusive growth a major concern? Justify your answer. (Answer in 150 words)

10

Post LPG reforms, Indian economy, trade grew tremendously. we recorded very high GDP growth.

Positives

↳ Overall poverty has reduced (recent MPI report says 415mn people exited poverty during 2004-05 to 2019-21)



↳ More opportunities sprang up example in agricultural trade, food processing trade

↳ As per Economic Survey, growth and socio-economic development are in convergence

Negatives

- 1) Bottom as mere passive beneficiaries in trickle down & not active stakeholders
- 2) Poverty not reduced commensurately as per low-middle income threshold (thus higher vulnerability for falling back - economic shock, poor monsoon, healthcare expenditure)
- 3) Trickle down depends on resource collection & redistribution efficiency which has been poor due to leakages & corruption
- 4) Higher inequality (Inequality report of 5% income by 10% top percentile)
- 5) low ^{human} capital index (0.49 as per world bank)

Thus, an inclusive growth which promotes skill development (Kaushal Vikas), financial inclusion (FI), healthcare access (PM-JAY) with more jobs in manufacturing (PLI) is needed.

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 a marquee initiative aimed to control air ~~population~~ pollution. It provided a data driven tracking of major pollutants (CO, NO₂, O₃, PM 2.5, PM 10 particles) through established stations in major cities.

Positives

- ↳ Increased monitoring
- ↳ Data driven model with transparency

Negatives

- ↳ on ground air pollution is not reduced
- ↳ Indian cities like Delhi, Noida, Lucknow, Kanpur remain most polluted cities of world

Role of LIFE

It calls for a lifestyle change which a) bring demand changes, b) bring supply reforms, and c) effect policy decisions.

- ↳ People can replace old polluting vehicles (scrapping policy)
- ↳ Public transport be promoted
- ↳ Promote energy efficiency (Green houses)
- ↳ Reduced energy consumption (putting fan, light off when not in use)
- ↳ shift to cleaner fuels

This Jan Bhagidari will then nudge the industry/farmers to shift to cleaner methods (eg: use of incineration, biodecomposers of residue treatment).

Hence will reinvigorate fight against air pollution.

क. पर्यावरणीय संकट पर वनाग्नि के प्रभाव की विवेचना कीजिए। वनाग्नि के खतरे से निपटने में UNEP के कार्य में ऐसी कार्यवाही 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

As per Indian State of Forest Report there were more than more than 3 lakh forest fire incidents between ~~June~~^{November} 2020 to June 2021. More than 14% of forest land is extremely vulnerable in India.

Recent wildfires in Hawaii, Canada, Greece, Italy bring raised concern on wildfires -

1) Environment impact

- ↳ loss of biodiversity
- ↳ more carbon emission (destructive feedback loop)
- ↳ loss of ecosystem services

2) Economic impact

- ↳ loss of life & livelihood in nearby region (eg: deaths in Hawaii)
- ↳ tourism potential reduced (eg: Greece)
- ↳ bio-resources lost
- ↳ high cost of response

3) Social impact

- ↳ lead to loss of indigenous cultures & value system
- ↳ displacement of people

4) Healthcare impact

- ↳ rise in pollution
- ↳ more soot, PM_{2.5} particles in air

UNEP fire ready formulae

It calls for a sist-reduction approach and capacity building approach which is a shift from traditional response, relief and recovery mechanism

- ↳ Creation of fire lines
- ↳ Use of early warning system
- ↳ Active surveillance & monitoring (eg: use of drones, satellites)
- ↳ Use of traditional & local solutions (eg: method of ancient Red Indians)
- ↳ Advanced technology & helicopters use

Thus, countries should incorporate it in their fire-fighting mechanism.

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)
- 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

10

ISRO has emerged as leading space research organization competing with international programs with likes of NASA, ESA etc

It has always been innovating in satellite & launch vehicles from GSLV to PSLV to now SSLV, it has added a new feather in its wings.

Advantages

- 1) Can launch smaller satellites instantaneously without waiting for bulk orders (eg: GSLV launches combined satellites)
- 2) The material (launch vehicle) can be reused & re used
- 3) Smaller launch vehicles can be built faster with economies of scale

- 4) With tech transfer (role of ISPAIe mandated by space policy) even private sector can build it as it requires relatively less upfront cost.

Game changer

- ↳ Emerge as satellite launch hub for the region (especially Global South and South Asia) by reducing cost & wait time
- ↳ Promote wastage reduction and circular economy
- ↳ Foray into new areas like LEO communications (eg: Starlink)
- ↳ Ultimately flourish with cooperation & development of private sector

Thus, Government should continue her support & address any concerns proactively

6. बायोप्राइवेटि विकासील विच 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

UN Convention on Biodiversity not only calls for sustainable use of resources but also mandates equal access and benefit sharing.

In contrast, biopiracy refers to using traditional & indigenous knowledge system and patenting it for commercial uses (Eg: antibiotic properties of turmeric)

Cause of concern

- ↳ Deprive indigenous communities their ~~from~~ share of resources
- ↳ Companies claim that they have patented technology (without equal access)
- ↳ Western countries develop their pharma industry at expense of traditional medicine

↳ Hinder development of AYUSH

Steps by Government

- 1) Implemented Biodiversity Act 2002 and signed CBD conventions with Nagoya & Cartagena Protocol
- 2) Participated in Kunming-Montreal Declaration which calls for digital sequencing initiative
- 3) Created new AYUSH ministry
- 4) Traditional system knowledge Repository
- 5) Global coordination and leading developing countries with international center at Tamunagar, Gujarat
- 6) GI tags
Further, Government should ensure that biopiracy is protect and leverage farm like HealthAD for raising more awareness.

2. असम राइफल्स को पूर्वोत्तर भारत में सीमा प्रबंधन और उग्रवाद से निपटने में किल 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

Recent border infiltration (from Myanmar) and ethnic conflict in Manipur has put the light on Assam Rifles. They are paramilitary force guarding Indo-Myanmar border, reporting to Ministry of Defence.

Challenges

(A) Border Management

↳ Porous border without proper border infrastructure

↳ Instability due to Tanta Rule has added challenges (with many states like Mizoram promoting refugee inflow)

↳ Lack of adequate, border technology like CIBMS for BSF)

③ Insurgency challenges

- ↳ Perceived as biased by certain indigenous community (as noted during Kuki-Meiti infighting)
- ↳ civil society organization have raised concern over human rights violation (AAKSPA, Mon killings)
- ↳ safe havens across border have reduced effectiveness
- ↳ Guerrilla warfare by insurgents

Reorientation

1. More effective collaboration with local police and army offices
2. Training with modern equipments (like night says laser technology, night goggles, anti-drone system)
3. Sensitivity training about community rights

In this context, we should look at recommendations of Murli Manohar Jethi committee

10. अंतरिक्ष में शस्त्र स्थापित करने की होड़ अंतरिक्ष को शस्त्रों के संपर्क का अमला सुन्न शेष 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

Tim Marshall in Future of Geography talk about emerging astropolitics as not science fiction but fast emerging reality.

Recent developments like Fractional Orbital Bombardment system (FOBS by China), Space force by US, DefSpace by India warn of space weaponization.

Reasons

1. Warfare is changing and technology is playing a leading role (eg: Starlink in Russia-Ukraine conflict)

2. First movers advantage will help determine hegemony in current G2 geopolitical conflict

3. Earlier militarization of space (example use for defence communication)

satellite) has naturally evolved to Anti-satellite tests to now weaponization

4. As space exploration advances and we push for man on moon, mars & beyond, space will emerge as new frontier, hence weaponization

5. Threat of resource misuse (eg: critical minerals) make country like US, China to develop space force

Implications

1. Heightened geopolitical tensions and potential sputnik moment
2. Rise of space debris & impact on civilian programs
3. Race to the bottom for global hegemony
4. Rising inequity in warfare capability

India through Mission DSpace, Defence Space Research organization, Shakti test ensure that it produces deterrent capability.

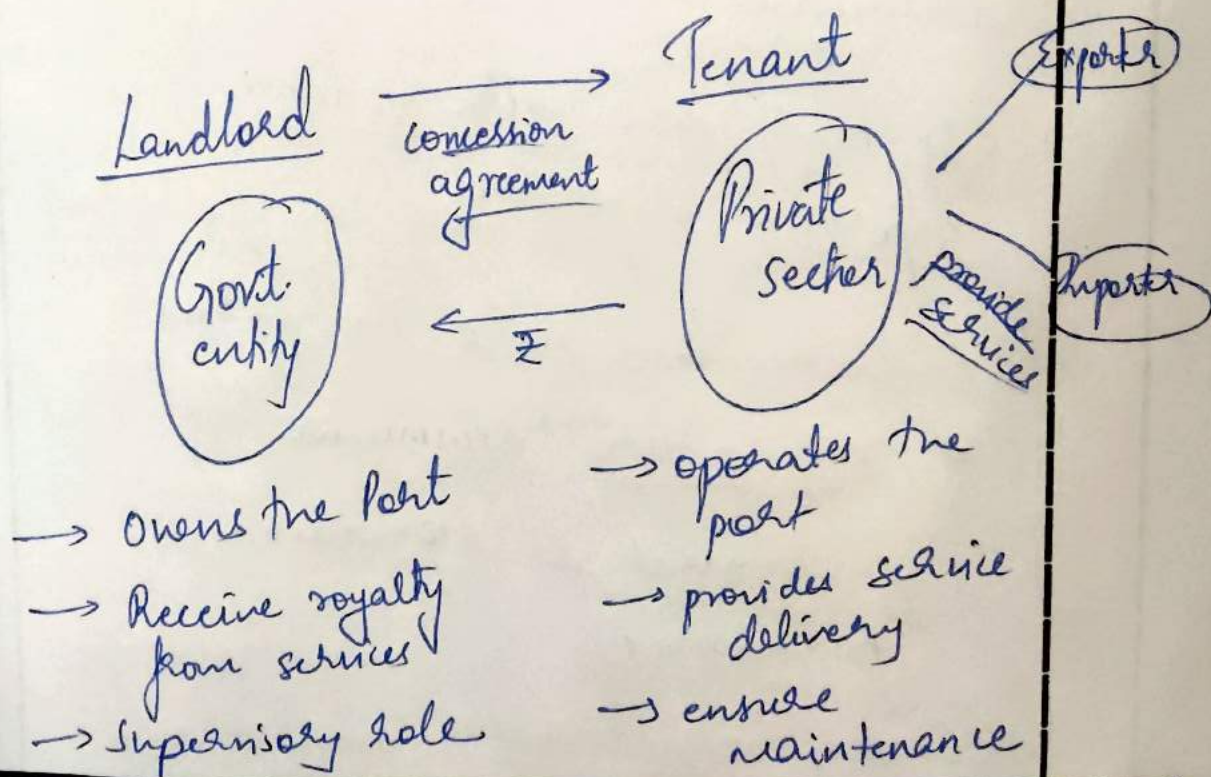
11. हाल ही में, जवाहरलाल नेहरू पत्तन (JNP) भारत का पहला 100% लैंडलॉर्ड पोर्ट बन गया है। लैंडलॉर्ड पोर्ट मॉडल से आप क्या समझते हैं? पत्तनों के प्रबंधन में प्रयुक्त विभिन्न मॉडल कौन से हैं? (250 शब्दों में उत्तर दीजिए) 15

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

Recently launched/charted Major Ports (Trust) Act amends the provisions for governance of our ports to include better models like landlord

Port model

About Landlord Port Model



Benefits

- ↳ Reduced government interference
- ↳ Increased port-handling efficiency,
reduced turnaround time
- ↳ Promote private sector initiatives
(eg: Logistics service port by NSDL
Appreciated by world bank)
- ↳ Bring in best-in-class management
techniques
- ↳ Effectively deal with private
exports & importers
- ↳ Government role in form
of regulator (minimum
government & maximum
governance)
- ↳ Case of doing business

Other models

1. Joint ownership of ports
2. Complete state ownership
3. Private ownership of port

Given Maritime Vision 2030, and our aim for \$2 Trn exports (95% trade by volume through seas), Government should further expand the model for remaining 11 major ports, after studying the positive effects & challenges, if any.

It would further push India as a major manufacturing hub as world shifts to friendshoring in globalized world.

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

Mechanization refers to use to modern machines in agriculture life cycle. Government initiative of a sub-mission is dedicated effort

Positives

- ↳ Pushed machine adoption (currently at 40-50%)
- ↳ Provide financial incentives for farmers
- ↳ Large farmers have benefited and helped increased agricultural productivity
- ↳ Reduced labour cost and time delays

Challenges

- ↳ Mechanization is synonymous to tractorization and other

modern machines for sowing, harvesting have not been adopted

- ↳ Regional variations, with more success in Punjab & Madhya belt
- ↳ Not benefitted small & Marginal farmers with small land holdings (average land holding at 1.08 ha - 2016 data)
- ↳ lack of commensurate extension services
- ↳ overall inferior credit is high at 36% affecting adoption of machines since high capital cost is needed

Way Ahead

1. Promote land pooling, FPOs (farmer producer organisations), cooperatives for economies of scale
2. Create more awareness

about use of machines and probable shift to food-processing (allied sector)

3. Address high capital cost concerns and ensure holistic reforms in subsidy mechanisms (direct income transfer can help farmers make customized right choices - Ashok Gulati)

4. Expand extension services.

5. Promote specific technologies within mission like drones which bring immediate benefits for farmers.

As India aims for "developed" aspirations, our salvation will not come only through manufacturing sector promotion or services, agriculture too needs to be modernized.

13. खाद्य प्रसंस्करण क्षेत्र की अमसुक्त 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 is hailed as sunrise sector by government, recording double-digit growth, employing 7.5 mn people and huge contribution to Agri & manufacturing GVA & exports.

Untapped Potential

- 1) CIIR report says that it can generate additional 9 mn jobs by 2030 and attract FDI in billions of dollars (consider I202 food park deal of \$2 bn)
- 2) It can help to boost export products significantly if quality concerns are handled and wastages reduced
- 3) It will help absorb workforce from agriculture

- It will lead to modernization of both agriculture & rural sector (Eg: consider development in Food Parks region Eg: Haridwar Patanjali)
- Promote newer food varieties (Eg: Millets Bread)

Challenges

- Unorganized nature — 51 lakh people in unorganized units
- Lack of backward and forward linkages (Eg: cold chain infrastructure)
- Small agricultural land holding reduce economies of scale
- Lack of market information
- Lack modern facilities & equipment
- Lack of testing, grading, Quality Check (QC) facilities
- Lack of Credit support
- Lack skilled workforce

Role of technology

- Make sector more formalized for active government intervention with data driven policy
- More agri-tech startups will be crowded-in (Eg: SAMNATI scheme of Karnataka and FRUIT portal)
- Reduced wastage in supply chain with effective monitoring
- Provide financial inclusion and credit inclusion (fintech)
- Provide market information and shift from supply driven marketing to demand based production
- Effectively ensure quality check mechanism

PLI scheme, formalization scheme and even states efforts like UP HPI policy are step in right direction

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

Government has been promoting land records modernization through schemes like Digital Land Records Modernization Programme, ULPIN (Shoo-Aadhar), Swamitra scheme, Model Conclusive Land Titling.

Significance

1) For Government

- Effect data monitoring & targeted policy intervention (GIS tracking)
- Increased tax collection
- Reduced court cases (> 5 crore currently)
- Formalised registration & reduced benami transaction

2) For Individual landowner

- Better credit access and affordability
- Reduced land disputes with clarity of documents
- More voice for vulnerable who are exploited by middlemen (inclusive growth & equity)
- Promote land pooling

3) For Economy

- Promote new initiatives like land banks
- Capture right potential of real estate
- Reduce inefficiency & ease of doing business (reduced land acquisition delay)

National Generic Document Registration System

↳ Digitization of land revenue department

↳ Standardized process for land registration

↳ facilitate easy access to land documents

Thus, it will catapult Indian society and economy from traditional feudal issues and shift towards modern, Amanisbharat Bharat

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

PM-Fasal Bima Yojana is a unique ~~credit~~ crop insurance scheme aimed to protecting farmers from crop loss and damage creating a safety unit in rural economy.

Use of technology

1. Digital platform can be used for registration (providing fast access)
2. online portal has added transparency & accountability
3. Technology be used for claim settlement
4. Remote sensing, drone facilities used for calculating crop losses & damage

Further changes needed

Recently Government had constituted a committee to study declining registrations (less than 2 crore).

Some challenges are -

- ↳ State governments have opted out
- ↳ Many times insurance schemes are announced later after someing
- ↳ Delay in settlement by companies
- ↳ Insurance companies office are not present in remote village
- ↳ Tussle over claims calculation

Further changes

- ① Nudge state governments for nation-wide scheme adoption for more access to farmers

- ② Adopt Blood formulae for increased effectiveness of scheme
 - ③ Promotion of drones, satellite data for claims settlement
 - ④ Strict monitoring of private insurance schemes operating in rural areas
 - ⑤ Nudge pvt companies for CSR fund to be used in place of income generation
 - ⑥ Crop insurance should be announced well in advance
 - ⑦ More awareness among farmers
 - ⑧ Can be linked with other programs like NRLM (SHG), Gram Swaraj for convergence with other rural initiatives. (Eg: women SHG can promote scheme awareness)
- These steps in addition to committed recommendations should be adopted.

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

India under Panchamitra Commitments aims for 50% share of non-fossil fuel in energy mix. According to UNESCO report, women are disproportionately impacted by climate change (Eg: food for sex in Africa).

Thus, renewable transition will not only mitigate climate change impact but also help to better adapt and transform their lives.

- 1) Shift from polluting energy sources like wood, cow dung cakes, coal which will reduce health cost,
- 2) Save time from collecting wood in forest, if renewable energy is readily available (Eg: solar in farm)

- 1) Innovative methods like solar cooker, solar heater will provide affordable solutions
- 2) It will thus, open newer avenues like solar crop (PM-KUSUM, Component-A); agriculture already undergoing feminization
- 3) It will boost circular economy & effective waste utilization (Eg: Garbhadhan (bio fuel) which will address fuel shortage concerns

However, there are some challenges like high cost of adoption, lack of awareness, land-use change constraints (in agriculture) which needs to be addressed.

Further, Government can

leverage the G20 Energy Transition
working group document on 'compendium
of best practices' followed in Argentina,
Bolivia, Brazil etc.

New methods like "energy as a
service", "concession agreements",
micro-entrepreneur model ensuring
repair & maintenance can act as
model methods for faster adoption.

Thus, green energy will not
only promote new jobs, reduce
disaster risks but at whole
adapt to a ^{more} modern, cleaner,
future fueled by renewables.

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

IPCC has given glred warning on climate change. It affects our food & nutrition security.

Already India has high incidents of stunting (~32%), wasting (~19%), underweight (~36%) children below age of 5. More than 50% women are anaemic. Food inflation is causing affordability Challenge.

Exacerbated by climate change

- 1) As per ICAR study, productivity of rice, wheat will decline
- 2) As per IPCC, 1°C rise in temperature declines production by 5MMT
- 3) Pest infestation will increase (due to rising heats)

- zoonotic diseases and farm diseases (like mosaic virus) will increase & effect crop
- land degradation & desertification will reduce arable land (UNCCD)
- rising temperature will cause heat wave affecting harvesting (Eg: rabi crop destruction due to March heat wave)
- Varieties of monsoon will increase (Eg: paddy destruction in Haryana)
- More disasters like floods & droughts will impact food security
- Reservoir level reduction will affect irrigation facilities
- Livestock sector impacted (fed stock) Further with displacement and hazards of disasters induced by climate, challenges will increase.

Thus, it affects agriculture, livestock, fisheries (deadly too in oceans) directly.

Further vulnerability of poor to cope from disaster will exacerbate climate challenge

India is committed to SDG-1, therefore

we must —

- (i) implement National Plan on Sustainable Agriculture
 - (ii) Research for climate resilient seeds
 - (iii) Promote millets
 - (iv) localise disaster risk reduction
 - (v) Innovative methods be used —
 - Integrated farming
 - Integrated Land Use Management
 - Integrated Pest Management
 - (vi) Use food fortification as low hanging fruit (Copenhagen Consensus)
- we must act now !!

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 is an advanced technology that allows to replicate on-ground, physical model into its digital avatar.

It is an Industry-4.0 application that allows factory managers, operating executives to develop a bird's eye view and ensure constant monitoring.

Further with IIoT and massive machine-to-machine communication coupled with AI, ML, cloud computing the digital twin provides real-time visibility of ground conditions.

Benefits

- 1) For effective monitoring & control of shop floor of industry
- 2) for data analytics and predictive analytics
- 3) Help to transition to advanced manufacturing techniques like just-in-time
- 4) Help to run simulations for new innovations & disruptions

Beyond industry, it can also be used in government. Example, Digital water model for catchment monitoring.

GATI-SHAKTI using GIS technology mapping physical & social infrastructure.

Challenges

1. Expensive and highly capital intensive
2. Need simultaneous investment in linked technologies like IoT, AI, ML for continued monitoring
3. Lead to job losses
4. Susceptible to cyber attacks
5. Need tech education and digital literacy for workers

Overall benefits trumps challenges which can be overcome. Further, it's now fast becoming reality in US and China India should adopt while ensuring skill development of workforce

19. आतंकवाद के वित्तपोषण पर संकुश 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

In recently held, No Money for Terror conference and UN meeting at Mumbai & Delhi, several challenges, traditional & new were discussed

Current methods not enough

FATF guidelines, UN sanctions committee, national security agencies (AFI, R&AW), raising awareness (since 9/11, 26/11) terror financing continues →

(i) piecemeal efforts (eg: UN convention on Terrorism not adopted)

(ii) ideological differences and lack of action against state sponsorship (eg: US providing F-16 to Pakistan)

- (iii) politicization of UN sanctions committee (by china)
 - (iv) continuation of safe havens
 - (v) organized criminal networks linkages not broken
- Newer challenges are emerging

- ↳ Rise of social media platforms used for radicalization, raising funds, recruitment
- ↳ Dark web browsers like Tor
- ↳ Proliferation of cryptocurrencies (Crypto Report 2023 notes ISIL use of facebook to share crypto)
- ↳ Globalization leading to complex money laundering networks
- ↳ Difficulty to prevent idol smuggling

↳ rising extremism in Afghanistan
leading to narco-terrorism (Taliban)
(noted by World Drugs Report of UNODC)

Way Ahead

- (i) Stop double-talk on curbing terrorism
- (ii) make states promoting terrorism more accountable (NORMS — UNSC reforms)
- (iii) reforms in CAATF (more transparency & inclusivity needed)
- (iv) global coordination on new technology challenges (Es: NFT)

We should adopt the Delhi Declaration in letter & spirit.

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

Turing test provided that machine gains intelligence (AI) if it can mimic human decision making and it would be difficult to distinguish its analysis from that of a person.

Current advancements include generative platforms, use in hybrid warfare, cybersecurity developments

Opportunities

↳ Defence forces can simulate their war strategies eg: possible Taiwan invasion & impact on India at CAC

↳ Enhance monitoring & surveillance at borders

- ↳ Track border movement
(combine AI with satellite
data)
- ↳ Provide more advanced defence
equipments (eg: cruise missiles)
- ↳ Effect logistics sharing with
like minded countries in
Indo Pacific (eg: BECA with
USA)

Challenges

- ↳ Misuse for radicalization (eg:
echo chamber, untransparent
algorithms on facebook)
- ↳ China has immensely invested in
AI and has more PHDs &
even own Chat-GPT model
like Wudao, Ernie (by Baidu)

↳ In economy, job loss could lead to internal conflicts with a demographic dividend converting to disaster

↳ Cybersecurity can be effected if AI is trained for ^{finding} loopholes in security architecture.

Way Ahead

DRDO should invest in AI capabilities. Business 20 and forum like GPAI (Global Partnership for AI) should be leveraged by India for rules setting & creating "risk based framework".