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GENERAL STUDIES (TEST CODE : 2087)

Name of Candidate	PURURAJ SINGH SOLANKI		
Medium Eng./Hindi	ENGLISH	Registration Number	1362174
Center	JAIPUR	Date	13/08/23

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
2. There are **TWENTY** questions printed in **ENGLISH.**
3. **All questions are compulsory.**
4. The number of marks carried by a question/part is indicated against it.
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
6. Word limit in questions, if specified, should be adhered to.
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.

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. How do women contribute to livestock rearing in India? What are the issues currently faced by women in the livestock sector in India? (Answer in 150 words) 10

livestock rearing is the process of improving livestock breeds and nutrition for profitable animal products

Women contribution to livestock rearing

① Arrangement of dry and wet pasture

② Care work involves cleaning operation, medical checkups with veterinarians

③ Marketing of livestock products - 3Lakh women associated with Amul

④ Grazing and other operations are undertaken by women's help.

Women face various issues in livestock sector

① Management of animals - difficulty alongside household tasks

② Controlling Rogue animals like bulls

③ Poor bargaining power - esp. for milk products

④ Lack of self-help groups in livestock sector

Way forward

→ Emulating Denlang SHG of Manipur

→ Curated schemes for women support

Women contribution to livestock sector must be improved to safeguard farmer incomes and achieve success of integrated farming.

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

ONORC was implemented by Union Government to safeguard migrants during Covid by allowing ration support even in non-domicile state. Recently all States, UTs adopted ONORC

ONORC - Ways to support migrants, urban poor

① Provision of free entitlements under NFSA - PM-GKAY without prejudice to domicile

② Increased linking of Aadhaar with Digital Ration Cards to prevent bogus beneficiaries

③ Reduced food-budget squeeze

④ Helped migrants focus better on health expenditure

ONORC - Successful but can be further improved

① Instances of internet poor connectivity and 'Son of the soil' created problems for migrants

② SECC 2011 still misses more than 10 Mn genuine beneficiaries

③ Poor implementation in some states

Way - foward - ONORC must be complemented with massive digitisation by reducing leakages, identifying and updating benificiaries.

Niti Ayog recommends 60% rural, 40% urban coverage under NFSA. Thus government efforts in nutrition must be supplemented with CSO engagement.

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

Climate change refers to consistent gradual change in global climatic conditions for more than a decade (current one is called anthropogenic climate change).

Climate change devastating impact

(A) Agricultural production

→ Changes in weather feasible conditions and sowing windows

→ Increased heat waves (India 2023) and frost waves (Western disturbances)

→ Erratic monsoon (54% rainfed agriculture)

→ loss of local biodiversity - supports agriculture

(B) Agriculture productivity

→ Reduced soil capacity causes higher inputs per unit land

→ Crop failure causes farmer misery

→ Disasters becoming a calender event.

Climate smart Water technologies - need of hour

① Efficiency of water use (drip irrigation > 80%)

② low water wastage and high recycle potential

eg Hydroponics

③ Improvement of Water Table - Hiware Bazar from 80ft to 20ft from microwatershed management

④ Improved crop density and production even in heat waves - fogging

Government ought to work towards reducing price of newer technologies by improving agriculture R&D (Ashok Gulati) for successfully addressing climate change.

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

Nanofertilisers are a new class of fertilisers with nutrient delivery using nano-particles in water. India recently opened Nano-Urea for public use and even exported it to Sri Lanka

Nano-fertiliser - Benefits for sustainable production

(I) Economic

① High efficiency compared to powder urea (> 80%)

② Reduces actual fertiliser requirement per Ha

③ Saves Forex by reducing fertiliser imports
[Urea - 40% import dependence
MoP - 100%]

(II) Environment

① Reduced Soil Salinisation - seen in excess urea usage in Bhatinda

② Less harm to landraces and local biodiversity

③ Less ground water pollution

Concerns with Nano fertilizer adoption

ⓐ less studied impact on human health and soil bacteria, organisms (Earthworms)

ⓑ Comparatively costly than Urea - highly subsidised by government

ⓒ Farmer union and company protests against Nationwide adoption

Way forward

→ Nano Revolution in agriculture (research on Nano-DAP, Nano-MoP

→ Improve production plants

→ Increase farmer consensus.

Nano fertilizers can be a gamechanger in ensuring food security while simultaneously targeting Environment protection.

5. How can the availability of adequate and equitable distribution of natural gas in all parts of the country help in achieving uniform economic and social progress? What challenges India faces in this regard? (Answer in 150 words) 10

Natural Gas is largely composed of methane and is a high Calorific value fuel. India has 45% import dependence

Natural Gas - Key to socio-economic progress

(I) Adequacy and equitable distribution

→ Expansion of Natural Gas grid network

Eg N.E. Gas Grid, Urja Ganga Yojana

→ Environment friendly and clean fuel

- lesser CO_2, NO_x, SO_x emissions than Coal and Crude oil - can reduce air pollution diseases in women (lung cancer)

(II) Subsidy support to poor households helps translate expenditure to health and education

Eg PM Ujjwala Yojana

(III) Social progress → reducing energy poverty

and time poverty in women (search for firewood)

(IV) Economic progress - Efficient fuel with lower price per unit of heat produced.

Challenges faced by India

- Pipeline related issues
  - frozen capacity once laid
  - Blowout accidents
- Slow progress on pipeline coverage
  - only few developed clusters in West and N.E India
  - 22000/35000 km laid
- Priority to fertiliser industry over energy sector

India must prioritise expediated completion of pipelines and improve access to decentralised sources of energy as well. A gradual transition from coal to natural gas to renewables is needed.

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

Human wildlife conflict arise from an imminent fear of intrusion, attack by either of the two in others territories. More than 300 tigers and elephants each have died in a decade from this, with >1400 human lives lost.

Human-wildlife conflict - Reasons

① Habitat fragmentation due to development activities

② Reduction in natural prey-base → forces animals to reach human livestock

③ Poor solid waste management in forest villages - waste attracts animals

④ large scale deforestration in protected areas.

⑤ Mining projects - 30000 people displaced by 20 large scale projects → further encroach forest lands and cause conflict.

⑥ Poor infrastructure for animal movement - lacking

Government measures to mitigate

① Technological improvement - Drones, radio collars, data analysis of pugmarks to track and divert animals

② Tribal protection - awareness on co-habitation.

③ Non-fatal tactics - 'Bee-fencing' by Khadi and Village industry for animals.

④ Strict enforcement of FCA 1980

For achieving harmony between humans and nature, a collaborative approach with bottom up engagement of locals is needed.

7. Discuss the linkages between growing urbanisation and noise pollution in India. Describe the effects of noise pollution on human health. (Answer in 150 words) 10

Noise Pollution refers to prolonged exposure to sounds above certain decibels (depending on age groups) and subsequent loss of hearing power.

Growing urbanisation linked to noise pollution

① Unplanned cities - Development of closely spaced slums with high noise pollution

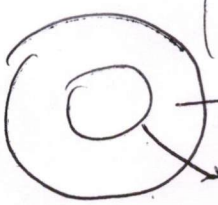
② Rise of Consumerism - Personal Vehicles considered status symbol

↓

Vehicular traffic → Jams and unnecessary honking → Noise Pollution

③ Flouting of sound limit norms - processions, religious sites have high ~~debell~~ decibel levels

④ Urbanisation around industrial locations → perpetual exposure to loud noises



→ Houses

→ Core industrial area

Noise Pollution - effects on Human health

1. Hearing loss and Damage to Eardrum
2. Hypertension and blood pressure
3. Problem especially grave for children and elderly
4. Headaches and Loss of concentration

Reduces workforce productivity → Economic losses

Noise Pollution can be controlled with strict enforcement of noise limits (night vigils, spot fines) and awareness generation.

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

Indian Space Policy (ISP) 2023 aims to revitalise the space potential of India (currently occupies only 2% of global market)

ISP 2023 - Key provisions for resp. stakeholders

(I) Government

↳ A favourable environment creation for participation of private sector alongside ISRO

eg Case of US - 56% global share due to robust private sector

(II) ISRO

↳ Focus on core-research fields

↳ Outsource secondary missions and objectives to private companies

↳ Handholding support and technology sharing via NSIL and INSpace.

(III) Private sectors playes

- Understand vital role to play in India's space dream
- Focus on end to end solutions
- Innovate, but take care about India's strategic interests

(IV) Better industry - academia match for young ~~scat~~ scientists inclusion at early stages

ISR 2023 focuses on setting policy aims for all stakeholders so that India may improve its space potential swiftly in future.

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

Special Frontier Force is a specialised force for handling damage to cyber assets and presenting counter strategies.

Mandate
- Investigate cyber war angles.
- Security of critical information infrastructure
- Intelligence Gathering

Special frontier force - achievements

①

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

Maritime security refers to safety of India's 7500 km coastline (9 states, 4 UTs) from both Conventional and non-conventional threats

Maritime security - Key to safeguard following

(I) Strategic well-being

- Piracy Menace - Gulf of Persia, Horn of Africa and Strait of Malacca
- Marine drug networks - ₹500 Cr Sea cucumbers, (2022)
  Cocaine bust in Surat 2023.
- Weapon imports by extremists - supplied to Naxals and N.E. insurgents

(II) Economic well-being

- Prevention of Tax evasion and for customs enforcement
- Prevent Soil erosion and island inundation
- Secure Sea lanes of Communication (95% Trade)

⇒ Maritime India Anti Piracy Act

→ Defines Piracy and provides punitive deterrance

→ SoP for maritime police, Coast Guard for Pirates handling

⇒ Significance

ⓐ Rightful effort by India to counter the growing influence of piracy

ⓑ Improve international collaboration with maritime neighbours eg IORA, IONS.

ⓒ Trial in Indian courts irresp. of nationality

ⓓ Important for security of both merchandise and citizens

Anti-Piracy Act must be complemented by respect for UNCLOS and better naval coordination with QUAD Members.

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

Budget 2023-24 brings a transformative vision for the coming 25 years (Amrit Kaal) by addressing the Key edifices of Indian economy.

Saptarishis of Budget 2023-24

(I) Women-led development - Improved focus on improving Female LFPR, start-up culture and gender-budgeting

(II) Youth - Concept of Unity Malls, PM-VIKAS for artisans

(III) MSME growth - 'Backbone of Indian economy' Credit improvement and innovation,

(IV) Green-energy - Green Hydrogen mission, Mission Life and ~~Sa~~ Panchamrit Commitments

(V) Long-term economic stability – Vibrant banking sector, controlling inflation and improving employment

(VI) Environment protection – Mangrove Mission, amendments to FCA 1980

(VII) Push for digital, physical and social infrastructure – Digital public infrastructure (DPI – UPI), Increased Capex to 14.5% GDP

Saptarishi – Key to inclusive development

① Creating opportunity for all sections of society –
Eg Women based budgeting to all time high of 4.9% GDP

② Special focus on vulnerable sections
→ Social security nets – Mahila Saving Certification,

③ Creation of robust infrastructure
↳ Highest allocation for PM Awas Yojana

④ Reducing disparity - PM Ujala, PM Ujjwala and PM-KISAN

⑤ Bringing dividends to future generations.

Parameshwaran Iyer (Niti Ayog) evaluates Budget as an excellent step in ensuring success on gender, energy and growth fronts.

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

Blockchain Technology refers to progressive storage of information in immutable blocks. This ensures transparency and secure data.

Land Records in India - present situation

① Legacy issues - carry forward of historical errors
② Poor digitisation and lack of professionals
③ Lack of conclusive land titles
④ Ad-hocism in land record maintainance
⑤ High scope of discretion and corruption in title award
⑥ Loss of productive land rights by poor farmers

Blockchain Technology - solution to above problems

① Storage of land rights as blocks in a chain.

② Characterised by immutability - once inserted change in land rights disallowed

③ Help acheive conclusive land titles for even the most vulnerable population.

Recent initiatives by government

① DILRMP - land records modernisation with Unique identification number

② PM-SVAMITVA - GIS based surveys to find, track and award land titles to true beneficiaries.

Global Case - Smart Dubai - blockchain used extensively for e-governance purposes

Blockchain is an evolving field with diverse application potential, Government must hire skilled data scientists for encorporation of

blockchain into land records management.

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

PPP refers to a long term engagement of public sectors with private entities for creation of quality infrastructure in timely and frugal manner. It is important to yield infrastructure dividend (multiplier of 4.8) and positive externalities

PPP - key to improve following aspects of agriculture

(I) Storage

- low warehousing stock per capita

India	0.02 m^2
US	4.4 m^2

- Concentration in select states (80% in Punjab, W.UP) and select crops (Potato heavy)

→ PPP can help create decentralised warehouses for fulfilling demands of farmers locally during harvest season. These can have cold storage and primary processing services

(II) Transportation

- Huge transport cost from farms to mandis

	Area covered per mandi
Punjab	119 km^2
Meghalaya	11000 km^2

MS Swaminathan recommends 80 km^2

- Lack of quality road infrastructure
- 2% roads burdened with 40% Transport

→ PPP can help create roads (most successful models are EPC, ToT). Can also help in multi-modal logistics coverage (large container trucks for bulk transport)

(III) Marketing

- Sale at below MSP prices
- Poor awareness and digital literacy of farmers

→ PPP can achieve universal coverage under e-NAM by installing digital service centres

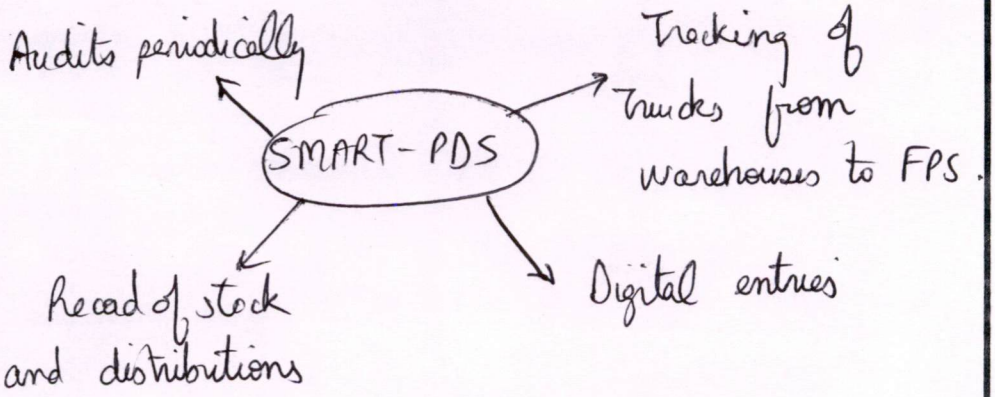
→ Can lead to success of Contract farming

→ Agriculture consultants for advising on sale of produce

PPP model can be institutionalised for agriculture, provided a strong appelate board (Kelkar Committee) is present for dispute resolution coupled with impact assessment by surveying farmers.

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

SMART- PDS refers to structural reforms in PDS by using technology for public good for improving transparency and accountability.



SMART- PDS - transformative potential

(I) Food security

→ Helps target beneficiaries under NFSA 2013 to exercise nutrition rights

→ Plugs subsidised cereal leakages

→ Ensure correct quantities are received.

→ Provision for fortified food and oils for fighting hidden hunger.

(II) Income security

→ Families receiving fair share of subsidised food have to worry less about food expenditure

→ Potential to spend income on social ~~and~~ goals - health, education

→ Improved nutrition ⟶ Increase productivity

↑ VIRTUOUS ↓

Increased income ⟵ Working efficiency

(III) Social Justice

→ Modern PDS have lesser bogus beneficiaries and ensure better targeting

→ Inclusion of single mothers, widows and antodaya households.

(IV) Environmental Justice

→ SMART-PDS leads to lesser food wastage

→ lowers emissions

SMART-PDS is truly an appreciable step by Government of India in line with economic and social justice (Article 38). It can further be improved by updation of data from Census and continuous system of audits.

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

Marine Heat Waves are large scale warming events of seasurface waters - cross 90% percentile barrier in 5 days. Recently East Indian Ocean saw marine heat waves.

Causes for Marine Heat Waves

(a) Anti-cyclonic condition - causes air to compress adiabatically down over oceans and causes heating eg Madden Julian Oscillation

(b) Ocean Currents - Warm Ocean currents suffer fluctuations in temperature owing to climate change.

(c) Global Warming - localised heating effects from excess absorption of CO_2

(d) Marine Pollution - Heating of polluted ocean patches

Marine Heat Waves - effects

(I) Marine ecosystems

1. Large scale deaths of juvenile fishes and sea grasses
2. Misery of Coral Reefs (eg) Barrier reef of Australia
3. Reduced activity of phytoplanktons → produce less DMS → lesser precipitation nuclei → Lower Rainfall → less cooling effect → Warming → phytoplanktons (vicious cycle)

(II) Economic losses

1. Destruction of fishery industry esp. in Andhra Pradesh
2. Fuel destructive cyclones - infrastructure damage
3. Sea Breeze causes coastal heat waves - increased hospitalisation and health expenditure
4. Rainfall reduction causes agriculture losses

NDMA guidelines → SOP for health officials
→ Presence of bathing facilities in public offices
→ Resilient aquaculture to support loss of aquaculture income

Marine Heat Waves' destructive potential can be countered by proactive government planning with multiple stakeholders.

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

GLOF are flooding events in himalayas caused from collapse of weak moraine lakes. India experienced worst GLOFs in Uttarakhand 2015.

GLOF - Key Causes

① Localised nature of Cloudburst → water pressure increases in weak dam - moraine lakes

② Reservoir induced seismicity - caused from pressure imbalance of hydel project reservoirs → butterfly effect on nearby glacial lakes

③ Landslides - global 30% in Himalayas.

GLOF - impact

(I) Environment

ⓐ Change in regolith of surrounding area

ⓑ Loss of endangered species and plant wealth

(II) Economy

① Damage to public infrastructure - roads, houses

② Increased health system pressure due to injured and deceased

③ Loss of hydel power potential

④ Water scarcity in near future - further economic burden.

(III) Locals - Loss of lives and livelihood
- Loss of cultural places of significance

Government steps ~~to~~ in this context

① Hazard Risk Vulnerability assessment (HRVA) - GLOF mapping exercise using drones, GIS and water footprint from satellites

② SOP, Mock drills for rescue and rehabilitation

③ Boundary construction on critical glacial lakes.

(4) Sikkim - water sensors to check water level in glacial lakes

(5) Fast response units for early evacuation

India has learned its lessons from GLOF incidents. By following NDMA guidelines and improving citizen preparedness, India can prevent such disasters in future

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

Radiometric dating refers to estimation of strength of Radio signals from a given sample sample to estimate its age.

Working

① irradiation with IR radiation

Sample

presence of certain isotope

② received radiation analysed for concentration of isotope

⇓

③ Using half-life of isotope, time period for sample is measured.

⇒ Limitations

→ Not efficient for small concentrations

→ Error margin is high

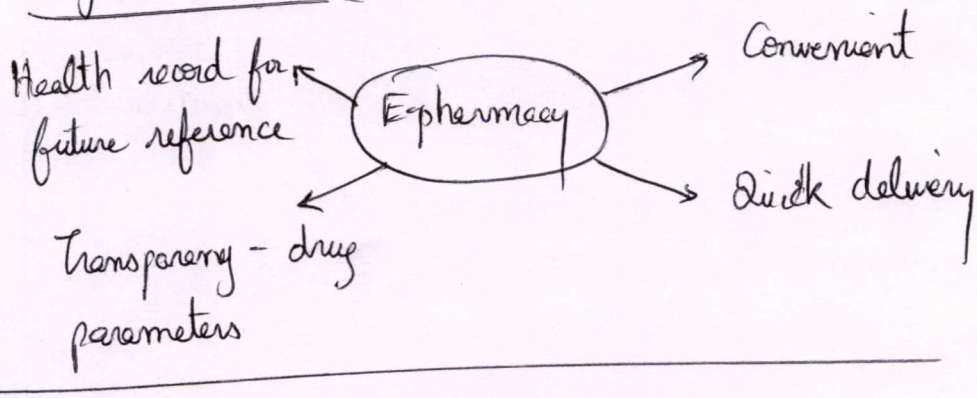
⇒ Calcium-41 advantages

① Gives precise and visible peak signals

② Unaffected by environmental factors.

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

E-pharmacy refers to purchase of medicines from medical shops without physical presence by using applications for online delivery. They received push from government in Ayushman Bharat Digital Mission (ABDM)



e-Pharmacy - growing concerns

① 'Over the counter sale' without valid prescription

② Sale of drugs with potential psychodelic effects to youth.

③ Non-transparent pricing mechanisms - drip pricing to attract consumers

(4) Sellers only concerned with sale without concern for patient health - suggest auxillary drugs actually not necessary.

(5) High drugs sale leads to Anti-Microbial resistance and environmental pollution

(6) Digital divide - e-Pharmacy limited to urban India

(7) Poor return policy - in case wrong medicine delivered → further health complications

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Measures to resolve dichotomy

→ Aim is to promote both e-Pharmacy and also safeguard patient health.

→ Government measures to tighten product endorsement by celebrities - check high sales

→ Registration system for certified pharmacists with online presence.

→ Google ratings for trusted e-Pharmacy apps

→ NPPA check over fair pricing mechanisms and fixing criteria

e-Pharmacy is a key step for democratisation of health in India. Government should take steps for expansion in rural areas and strict punitive actions against rule breakers.

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

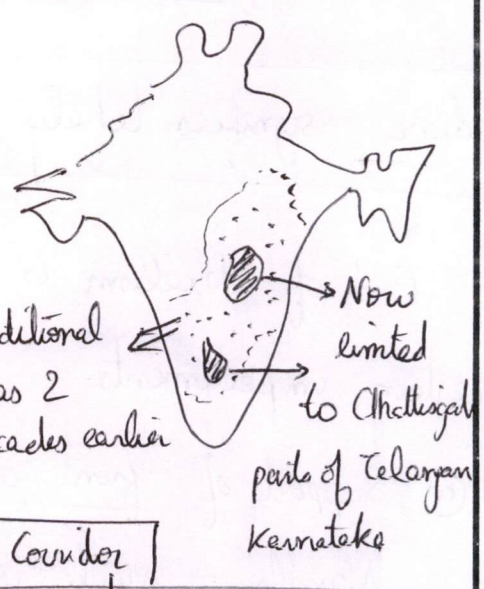
Left Wing Extremism refers to extremists following ideals of Mao - violent takeover of State, with no belief in Indian Constitution and system of government.

LWE - declining trend in India

① Decline in number of incidents - >75%

② Decline in deaths >90%.

③ Decline in left wing districts from 180 (2008) to 75 (2021)



Factors contributing to above trend

ⓐ Better penetration of development schemes
- → Education - Eklavya residential schools
- → Skilling - PM DAKSH, TRIFED initiatives
- → Health - Bang Commission recommendations enacted.

(b) Securitisation of forest areas

→ States – Operation Anaconda and C-60 Commond Force (Maharashtra)

→ Central government – Security related expenditure scheme, SAMADHAN strategy

(c) Technology adoption by security forces

(d) Check on financial streams to Naxal groups

Decline – signifies likely end of LWE in near future

→ End of Naxalism is possible but it faces certain impediments

(a) Support of front organisations and Urban Naxals – create counter-state narrative

(b) Illegal mining proceeds still pocketed by LWE groups

(c) Access to weaponry and innovative attack tactics – first mover advantage, mines, snipers, booby traps etc.

→ Following measures are further needed

① Development narrative coupling with a trust based governance

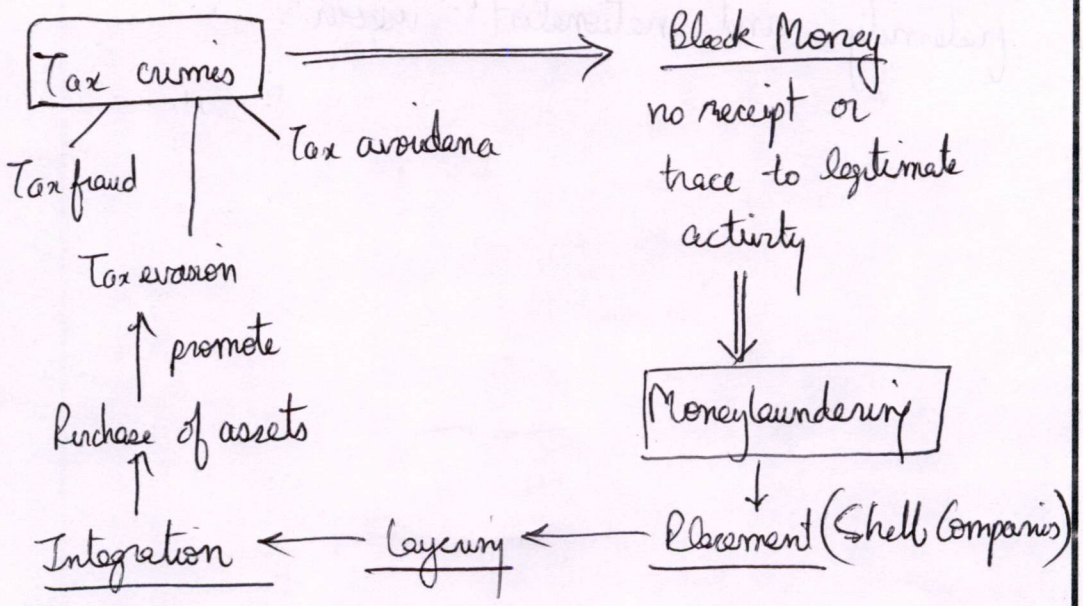
② Common people ought to exercise pro-national opinion and oppose LWE.

LWE has carried on for more than 6 decades and has to be won over to ensure inclusive development where every Indian is driven by fraternity and nationalist vigour.

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

Money laundering refers to change in the appearance of money usually obtained from illegal activities into white money acceptable readily into the economy.

Money laundering and Tax crime - Synergy



→ Tax crime proceeds are laundered which can return to host country as foreign investment

→ Assets purchased from this investment are used in increase economic might and further explore newer ways of tax evasion

Key anti-money laundering Measures

① Limitation of Benefit Clause
② PMLA - executed by ED
③ Benami Transactions Act, Black Money Act.

Challenges to AML measures in tackling Tax crimes

(I) Political

ⓐ Nexus between Tax avoiding business and Political leaders (party funding) → prevent action by political and administrative log pulling
ⓑ loss of political support

(II) Legal

ⓐ Fugitive economic offenders escape legal system of country
ⓑ Challenges in extradition process
ⓒ lack of proof due to secretive channels using dark web for laundering

(III) Operational Challenges

ⓐ Investigation delays
ⓑ Lack of staff - vacancies
ⓒ Judicial backlog of cases

Money laundering for proceeds of tax crimes is a serious economic problem for India. International Cooperation esp. with governments of Tax Havens like Switzerland is the need of the hour.