



GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE : GSMAC2403

Test No. : 03

Name of Candidate: Madhav Agarwal Mobile No.

Roll No. : PTTP220590 Start Time 3:15 PM End Time 6:15 PM

Date of Examination: 26th August 2024 Medium : English ☒ Hindi ☐

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	
TOTAL MARKS - 100		

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	
TOTAL MARKS - 100		

GRAND TOTAL - / 250

EVAL CODE: EVAL DTE:

GENERAL INSTRUCTIONS

- Immediately on receipt of the QCA booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.
- Candidates must mention all relevant details like Name, Email, Roll No, Mobile, etc. in the space allocated.
- Candidate is expected to attempt all 10 questions within the given timeline.
- Answers must be written in the medium authorized at the time of admission.
- Candidates must write answers for the specific question under the respective question itself. Any answer written outside the space allotted may not be given credit.
- Please write neatly. Avoid illegible writing.
- Do not write/mark irrelevant matters in the QCAB.

सामान्य निर्देश

- QCA पुस्तिका प्राप्त होने पर कृपया तुरंत जांच लें कि इस QCA पुस्तिका में कोई पृष्ठ या सामग्री आदि गलत छपी हुई या फटी हुई या गायब तो नहीं है। यदि ऐसा है, तो इसे एक नई QCA पुस्तिका से बदल लें।
- अभ्यर्थियों को सभी प्रासंगिक विवरण जैसे नाम, ईमेल, रोल नंबर, मोबाइल नंबर आदि का आवंटित स्थान पर उल्लेख करना होगा।
- अभ्यर्थियों से अपेक्षा की जाती है कि वह आवंटित समय-सीमा के भीतर ही सभी 20 प्रश्नों के उत्तर-लेखन का प्रयास करें।
- प्रत्येक उत्तर, प्रवेश के समय चुनी गयी भाषा के माध्यम में ही लिखे जाने चाहिए।
- अभ्यर्थियों को विशिष्ट प्रश्न के उत्तर संबंधित प्रश्न के नीचे ही लिखने होंगे। आवंटित स्थान के बाहर लिखे गए किसी भी उत्तर को क्रेडिट नहीं दिया जाएगा।
- कृपया साफ-सुथरा लिखें। अपठनीय लेखन से बचें।
- QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS:

FOR OFFICE USE ONLY

<u>Student Concerns / Query</u>	<u>Evaluator's Feedback / Response</u>
1	1
.....	
.....	
.....	
2	2
.....	
.....	
.....	
3	3
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.....	

MARKING SCHEME *

Marks Per Ques	Below Average	Average	Above Average
10 Marks	Below 3.00	3.00 - 3.75	4.00 and above
15 Marks	Below 4.50	4.50 - 5.75	6.00 and above

* Subject to change without prior notice.

<u>IMPORTANT QR CODES</u>	
 Topper's Copy	 Common mistake and Correct Filled QCAB
 Copy Scanner App	 Next IAS Test Centre Location

MACRO COMMENTS

The Purpose of evaluation@nextias.com is to provide constructive suggestions on 'How to improve Answer Writing and thereby score better marks.'

STRENGTHS OF THE CANDIDATE

AREAS OF IMPROVEMENT



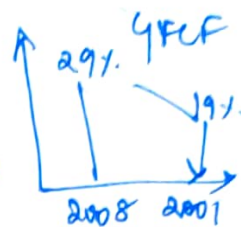
IMPROVEMENT SUGGESTIONS

Date:	UPSC	Topic
Question No.		Remarks
Q1:	Fiscal deficit is the <u>borrowings</u> undertaken to match difference of <u>excess expenditure over income</u>. It stands at <u>5.3%</u> approx (Budget 2025). <u>Target is 4.5% by FY26</u>. <u>Factors contributing:</u> ① <u>Low tax to GDP ratio</u>: <u>11.1%</u> (China 20%). ② <u>High rate of imports</u>: of crude oil, pulses, etc. eg. (\$ <u>96 bn</u>) oil imports FY24) ③ <u>Populist schemes</u>: like free electricity to all farmers. ④ <u>Failure to meet budget targets</u> & disinvestment <u>10,000 crore</u> met out of 5,000 crore FY24 ⑤ <u>Low income tax filing</u> and <u>income tax paid only</u> (4% of population) (1%) <u>Potential consequences</u> ① <u>Harms macro-economic stability</u> of <u>Sri Lanka Crisis</u>	

Date: Question No.	UPSC	Topic
		Remarks
	② Increase <u>cost of borrowing</u> for sovereign, fall in credit rating ③ Harms <u>inter-generational equity</u> ④ Boost <u>excessive inflation</u> due to money printing ⑤ <u>Political and social instability</u> due to revolts, riots.	
	<u>Measures to ensure fiscal consolidation</u>	
	① <u>NK Sinha Committee</u> - Instructs States to pursue disinvestment of state PSUs. ② <u>Independent Fiscal Council</u> for transparency. ③ Rationalisation of some expenditure - focus on capex (like in Budget 25 - 11.11 case) ④ Ensure generation by <u>finalisation and data triangulation</u> to check leakage.	
	The government must continue on the path of fiscal glide to achieve <u>4.5%</u> by FY26 and <u>reform FRBM Act Targets</u>.	

Date:	UPSC		Topic
Question No.			Remarks
Q2:	Recently <u>WEF</u>, praised India's capex focus and highlighted how it will contribute to developed India <u>Potential of capex</u> ① <u>Economic potential</u> <u>Infrastructure building</u> Serial & water (Jal Jeevan Mission) Transport (GATI Shakti) Telecom (Bharat Net) } <u>Inclusive growth</u> Capex (₹) Budget FY23 FY24 FY25 Capex graph ② <u>Ripple effect</u> for other sector - job creation in construction ③ <u>Crowding in</u> for private sector (ES 24) ④ <u>Control Inflation</u> by <u>post harvest infra</u> leading to reduced hunger, food loss ⑤ <u>Boost to manufacturing sector</u> by reducing <u>Logistics cost</u> to 8% to GDP.		

Date:	UPSC	Topic
Question No.		Remarks
	⑥ <u>Better quality of expenditure</u> by government can ensure <u>high rating</u> & low cost of borrowing. <u>Challenges:</u> ① Low <u>GFCF</u> by Private sector ② High <u>capital to output ratio</u> due to inefficiency. ③ <u>Regulatory chockhold</u> = delayed release of funds. ④ <u>Unsustainable policies</u>: demand for <u>OPS</u> ⑤ <u>Incomplete projects</u> = poor quality as highlighted by <u>CAG Report</u>. The need for now is to have <u>Elephant Bonds</u> (Sunita Bhalla Committee) and high <u>expenditure oversight</u> to steer India into <u>VIKSI BHARAT</u>.	



Date:	UPSC	Topic
Question No.		Remarks
Q3:	Urbanisation has reached <u>35%</u> and is expected to rise further (<u>World Bank</u>). For this <u>peri urban agriculture</u> holds great scope. <u>Opportunities</u> :- Periurban Agriculture - Enable <u>Tonke farming</u> - allow profitable goods. - Allow to <u>boost farmer income</u> to 2x (Salvati Committee). - Meet demands of <u>burgeoning population</u> <u>Affordable & healthy vegetable & fruits</u> (e.g.) <u>organic lettuce</u>, by <u>farm to fork</u>. - Development of <u>semi-urban areas</u> through cluster model <u>Skill farmers to value add</u> and <u>boost FPI sector</u> (e.g.) <u>Fruits</u> → <u>Organic Jams</u>.	

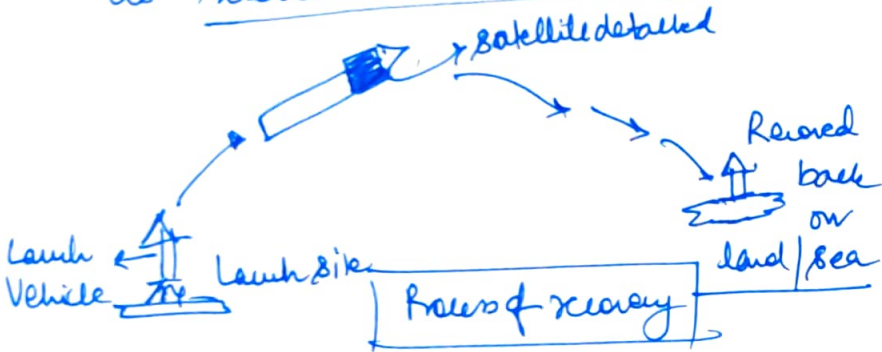
Date:	UPSC	Topic
Question No.		Remarks
	<u>Challenges:</u> ① <u>High competition</u> from outside markets ② <u>Crop vulnerability</u>: pest attacks, climate vagaries, Urban heat Island. ③ <u>Quality issues</u>: low quality inputs used ④ <u>Connectivity issues</u>: cold storage shortage, high fuel costs. ⑤ <u>Lack of decentralised storage</u> at farm gate. Measures to be taken → Last mile connectivity → Skilling for farmers → Decentralised storage (<u>"Kanda Chawl"</u> in MH) → Market Intelligence system (<u>Dahsrai Committee</u>) <u>Case Study</u> 1 hour weekly school in MH for skilling <u>Peri-Urban agriculture</u> can help contribute to sustainable agriculture & <u>cities (SDG11)</u>.	

Date:	UPSC	Topic				
Question No.		Remarks				
Q4:	India's <u>top 3 agri imports</u> include <u>edible oil and pulses</u> at <u>top 2 ranks</u> followed by <u>cashews</u>. Disease burden Highest <u>edible oil</u> & <u>pulses</u> consumption in world causing <u>Obesity, diabetes, Cholesterol</u> <u>Challenges:</u> (A) <u>Pulses:</u> → Highest consumption despite largest production → Focus on <u>agri. rice-wheat</u> due to MSP → Lack of <u>high yield variety</u> & <u>research</u> (B) <u>Oilseeds:</u> → Low price <u>foreign</u> crops → <u>cheap imports</u>: <u>Palm oil</u> from <u>Malaysia</u> → Reducing area under <u>cultivation</u> as not <u>promoted</u> by <u>states</u> (C) <u>General challenges:</u> ① Low land size ② Lack of training & skilling for crop handling ③ <u>Adhuc ban</u>: lost <u>45k crore</u> when <u>soybean</u> banned as per <u>(ICRIR)</u> <table border="1" style="margin-left: 10px;"><caption>AGRI CENSUS</caption><tr><th>1991</th><th>2015</th></tr><tr><td>1.41 acre</td><td>1.08 acre</td></tr></table>	1991	2015	1.41 acre	1.08 acre	
1991	2015					
1.41 acre	1.08 acre					

Date:	UPSC	Topic
Question No.		Remarks
	<u>Measures that can be taken:</u> ① <u>Hub & Spoke Model</u> (to link forward & backward Infrastructure) (<u>Dishra Committee</u>) ② <u>Agriculture Research & Development Expense (ARDE)</u> has to ↑ (<u>Adhok yukti</u>) ③ ⁴ <u>Sahi Fasal Campaign</u> to boost crop diversification through incentives ④ <u>Extension services</u>: oil mills, procurement channels, new technology, etc. ⑤ Provision of affordable seed kits of indigenous varieties. ⑥ <u>Storage infrastructure</u>: <u>Sharda Kumar Committee</u> to <u>reduce wastage</u>. Self sufficiency in Agriculture require <u>'whole of government approach'</u>.	

Date:	UPSC		Topic
Question No.			Remarks
Q5:	<u>Bio-manufacturing and Bio-factories</u>, involve use of <u>bio technology</u> and can usher green economy in India. <u>Role of Bio manufacturing:</u> ① <u>Bio fertilizers</u> for agriculture, ② <u>GM crops</u> for greater yield (eg: DMH-11 Mustard. ③ <u>Bio-techⁱⁿ steel</u> via <u>Green</u> methods (eg: Green steel with less emissions. ④ Development of unique <u>bio-fabrics</u> that can aid in technical textile, <u>medical program</u>: eg special PPE kits, made with nanoparticles.		

Date:	UPSC	Topic
Question No.		Remarks
	<u>Role in Bio-fabrication:</u> ① <u>Mineral extraction</u>: by using <u>bio-organisms</u> eg: Bio-remediation. ② Can aid in development and <u>extraction of rare earth metals</u>. ③ <u>Reduced emissions</u> from factory through <u>carbon capture</u> by <u>particles</u>. The sector faces issues of gene crossover, policy uncertainty, regulatory clearance being delayed, etc. As per <u>BIRAC</u>, biotechnology has great potential which can be tapped using <u>Bio-manufacturing</u> and <u>Bio-fabrication</u>.	

Date:	UPSC	Topic
Question No.		Remarks
Q6:	Recently <u>ISRO</u> brought a successful test demonstration of <u>Reusable Launch Vehicle Prototype</u> <u>Principles behind working:-</u> A rocket launcher once launched is <u>recovered back to ground</u>.  The diagram illustrates the recovery process of a reusable launch vehicle. It shows a launch vehicle being launched from a launch site. The rocket ascends, and the satellite is detached. The rocket then returns to the ground, being recovered on land or sea. The entire process is labeled 'Process of recovery'. Recovery can be of <u>few parts</u> or <u>whole rocket</u> (eg: <u>Falcon 5 series</u> of <u>SpaceX</u>). <u>Controlled Reentry</u> and <u>advanced</u> precision is needed to recover the launch vehicle	

Date:

Question No.

UPSC

Topic

Remarks

Significance & Potential benefits:

- ① Reduce cost of launch by almost 40% - 50%.
 - ② Time to launch satellites will reduce leading to more operations per annum.
 - ③ Greater forex earnings by NSIL from foreign clients.
 - ④ More opportunities for Space startups 200+ in India in 2024.
 - ⑤ Pave way for cheaper Bhaktiya Antariksh Yaan (India's space centre).
 - ⑥ ISRO can focus on 'core research' rather than LV manufacturing.
 - ⑦ Sustainability friendly as less waste, circular economy.
 - ⑧ Scientific spinoff and STEM education.
- Reusable launch vehicles are future and can aid to get 8% global share by 2033 from current (3%).

Date:		Topic
Question No.	UPSC	Remarks
Q7:	Carbon Credit trading scheme (CCTS) has been launched by <u>MoEFCC</u> at <u>COP 28 UAE</u>. <u>Key features:</u> = ① <u>Credits</u> will be provided for <u>environmentally friendly</u> behaviour. ② Credits available to <u>all organisations</u> unlike <u>only businesses / industries</u> earlier in <u>PAT</u> etc. ↳ <u>Small individuals / small business</u> can get credits. ③ Credits can be <u>redeemed</u> based on carbon markets and established rules. ④ Government aided and supported program under the provision of <u>MoEFCC</u>.	

Date:	UPSC	Topic
Question No.		Remarks
	<u>Potential for mitigating GHG:</u> ↓ <u>Yes:</u> ① Adoption of renewable energy by households) business can be done ② Help <u>decarbonise</u> the heavy industries & transport. ③ Adopt new technology like <u>GreenH₂</u>, Gas economy. ↓ <u>No:</u> ① Need proper <u>measurement standards</u> for credits ② Difficulty in <u>quantification</u> (eg: Credits of a newly planted area?) ③ Accreditation issues can lead to frauds. The scheme is a game changer. If played well it can use <u>use</u> our <u>Mission LIFE</u> and help achieve the <u>Paris climate goals by 2070</u>.	

Date:

Question No.

UPSC

Topic

Remarks

Q8:

Heat waves are disasters having greater than normal temperature for a prolonged period. The IMD has defined

<u>limits:</u>			
	<u>Plains</u>	<u>Coastal</u>	<u>Hilly areas</u>
<u>when exceeds.</u>	40°C	37°C	30°C

Heatwave incidents have:

- ① Increased in intensity: 2023 was the hottest year of the last decade (IMD)
- ② Frequency per annum: have increased from one to twice or thrice events
- ③ Duration: has increased drastically from few days to few weeks.
as seen during heat waves in Mumbai, Delhi, Lucknow.

Date:	UPSC	Topic
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	Yes, heatwave need to called as notified disaster: ① Allow <u>fund allocation</u> from National <u>Disaster Relief Fund</u> ② Allow <u>NDMA</u> to <u>undertake</u> detail study and prepare <u>guidelines</u> for adaptation. ③ Notification can help <u>define hazard zone</u>, policy planning. (eg) <u>Green Buildings</u> by <u>GRHA</u> ④ <u>Structural measures</u> can be taken: (eg) cool ventilated building <u>India Cool Action Plan</u> ⑤ Help develop <u>Inter-Agency coordination</u> ⑥ Study the relation with <u>climate Risk Assessment</u> (6th pillar of <u>Sandai framework</u>) With rising temperature, urgent steps like <u>community planning</u>, <u>livelihood changes</u> and <u>decarbonising</u> are needed to check heatwaves.	

Date:	UPSC		Topic
Question No.			Remarks
Q9:	<u>Joint doctrine for cyber space</u> can help tackle the issues of rising cyber crimes in India. <u>Tackling conventional threats:</u> In 2023, <u>761 cyber crimes per minute</u> as per data security council of India. ① <u>Cyber funds:</u> as per IMF 1/5 th of cyber attacks are on <u>financial firms</u> ② <u>Tackle deradicalisation of youth:</u> Ⓢ <u>Library movement</u> in <u>Jantara</u> ③ <u>Coherence in strategy</u> and planning to ensure coordinated check. ④ Tackle menace of <u>identity theft</u>, <u>Denial of Service Attack</u>; attack on <u>critical infrastructure</u> (<u>Red Echo Attack</u> on <u>Mumbai Power line</u>)		

Date:	UPSC	Topic
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	<u>Tackling gray zone operations</u> ① <u>Tackle cyber terrorism</u>: terrible attack on <u>Kundukulam (D-Track)</u> ② <u>Tackle cyber warfare</u>: like used on <u>Iran Nuclear Plant (Stuxnet)</u> ③ <u>Maintain security of key military data</u> <u>(g) Sensitive documents of DRDO</u> ④ <u>Handle unconventional warfare</u>: like <u>things being taken by ISIS from Bangalore</u>. Joint policy can aid in reducing menace of cyber crimes. For greater benefits <u>Cyber forensic labs</u> can be built as per <u>Gulshan Rai Committee</u>.	

Date:	UPSC	Topic
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Q10:	Recently, <u>MHA</u> extended the jurisdiction of BSF by <u>50km in Punjab</u> and also in <u>Bangladesh</u> while it was reduced in <u>Gujarat</u>. This has caused <u>terrors</u> despite <u>benefits</u>. <u>Necessity:</u> ① <u>Increasing drug trafficking</u> from across the border. ② <u>Sophisticated technology</u> like <u>drones</u> are used to <u>bypass</u> BSF zone of 10km. ③ <u>Weak coordination with police</u> causing delays in prosecution. ④ <u>Asymmetric nature of threats</u> from <u>Bangladesh</u> like <u>cattle smuggling</u>, <u>refugee crisis</u>, <u>human trafficking</u>. ⑤ Ensuring check on <u>arms trade</u> and <u>organised crime</u>.	

Date:	UPSC	Topic
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	⑥ <u>Ensure effective border management</u> by adding new tech like <u>CIBMS</u>. <u>Potential issues:</u> ① <u>Harms rights of federal states</u>: <u>Punjab</u> went to SC under Article 131 to challenge ② <u>Conflicts with police</u> due to <u>trif war</u>. ③ <u>High handedness of border force</u>: can lead to negative affects on citizens. ④ <u>Seen as usurping of power</u> as law & order is in State list (Schedule VII). <u>Way ahead:</u> → <u>Collaborative and discussion based approach</u> = Team India → <u>Hotlines</u> to engage police & border force → <u>Keeping states into confidence.</u> To tackle border Issues, A <u>Team India</u> approach is needed with <u>"India first Attitude"</u>	

Date:	UPSC	Topic								
Question No.		Remarks								
Q11:	India has become the <u>5th largest economy</u> by GDP yet its growth is regarded to be "<u>jobless growth</u>", which has been an <u>Achilles Heel</u>. <table><caption>Job to GDP Ratio</caption><tr><th>Period</th><th>Ratio</th></tr><tr><td>1950-60</td><td>1.0</td></tr><tr><td>1971</td><td>0.4</td></tr><tr><td>Today (as per experts)</td><td>0.1</td></tr></table> ie. 10% GDP growth today makes only 1% increase in job. (as per experts).	Period	Ratio	1950-60	1.0	1971	0.4	Today (as per experts)	0.1	
Period	Ratio									
1950-60	1.0									
1971	0.4									
Today (as per experts)	0.1									
	<u>Structural unemployment</u>: involves jobless due to change from one sector to another in an economy's life. <u>Natural Transition</u>: (seen around world) <pre> (1) Agriculture → (2) Manufacturing → (3) Services sector </pre> Frictional sector ←									

Date:	UPSC	Topic
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	<u>Relevance for India:</u> ① India faced <u>pre native industrialisation</u> where there was direct jump of agrin to service sector. ② <u>Industries / Manufacturing</u> which are main job creators remained at back seat. (y) Only (17%) Contribution to GDP. ③ <u>Lack of skills</u>: made labour <u>stagnate</u> and stay <u>disguised</u> in agricultural sector. ④ <u>Service sector</u> could not absorb the excess labour due to over-reliance on use of technology. ⑤ focus on industry switched to <u>capital intensive</u> rather than <u>labour</u> due to:- $\nearrow$ <u>Poor labour</u> <u>Tax</u> $\downarrow$ <u>Policy Uncertainty</u> $\nwarrow$ <u>dwarfism of MSME.</u>	

Date:	UPSC	Topic
Question No.		Remarks
	<u>Measures to promote Inclusive Job growth</u> (2024) <u>Grandin survey</u> said India needs to <u>80 lac job pa</u> in non-farm sector to absorb all labours by 2030. ① <u>Labour Intensive sector focus:</u> <u>Leather, Textile</u> <u>Can create 80% than Automobiles.</u> ② <u>Skilling of labour:</u> <u>National Apprenticeship</u> <u>Scheme</u> is good step ③ <u>Self Employment:</u> through <u>Startup India</u> <u>and MUDRA loans</u> ④ <u>Agriculture to food processing:</u> by allowing <u>contract farming, scientific support, higher</u> <u>value addition for youth.</u> ⑤ <u>Assemble in India for network products:</u> Our growth has to be "<u>Shared growth</u>" for it to be inclusive because when <u>"Some shine India does not shine"</u>	

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Q12:	MSMEs are the backbone of Indian economy with <u>30% of GDP</u>, <u>45%</u> of Exports and <u>11 crore</u> job creation. They hold immense potential to boost regional growth, industrial diversification and tech advancements. <u>Role in fostering regional growth:</u> ① <u>Balanced & Inclusive growth</u>: (eg) promotion of MSMEs in North East (currently only 2%). ② <u>Help check migration pressure</u>: from under developed to Industrial states (MH, TN). ③ <u>Job creation at local levels</u>: boosting spatial growth. ④ <u>Foot loose industries</u>: Services, tourism, can be tapped for regions <u>without resource</u>.	

Date:	UPSC	Topic
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	⑤ <u>Bridge the rural urban divide:</u> by promoting cluster based growth. eg: <u>FPI industries in rural areas</u> like <u>Amul</u> ., <u>Achieving Industrial diversification</u> can lead to take alternate industries. ① <u>Defense:</u> can be taken around 2 new defense concerns. ② <u>Space tech:</u> <u>1200+</u> startups have emerged from just <u>2</u> in 2019. eg: <u>AgniKood</u>. ③ <u>Technical Textiles:</u> like parachutes, seat belts. ④ <u>Auxiliary goods:</u> small auto parts, robotics, tyres etc. ⑤ <u>Service based MSMEs:</u> like tourism, consultancy, fin techs can come up. eg: <u>Zenodha</u> for brickmaking.	

Date:	UPSC	Topic
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	<u>Technological advancement:</u> ① <u>Industrial Revolution 4.0</u>: AI, ML, Internet of things can be tapped by MSMEs ② <u>Space & defense startups</u>: with high tech goods having spillover effects- ③ <u>New R&D</u> can be taken up of <u>National Research Foundation (NRF)</u>. Yet MSMEs face challenges (MSME Seniors) → Less than 50% adopt technology → credit dependence on informal sources upto 90%. → <u>Dwarfism</u> due to fear of stringent labour laws. → <u>Informalisation</u> (Non-Registered). The need of hour is to apply recommendations of <u>NK Shila Committee</u> (develop <u>5 lac crore sectoral fund</u>) to make them future ready for <u>Amritkaal</u>.	

Date:		Topic
Question No.	UPSC	Remarks
Q13:	MSP is the minimum price announced by government on recommendations of CACP for <u>22 crops</u> before sowing season. <u>Recent farmer protests</u> have brought legalisation of MSP to forefront which has both side of debate: <u>Yes MSP needed: (legalization)</u> ① <u>Government's failure to procure all crops</u> only rice-wheat majorly procured ② <u>can help assure price to farmers</u> whose income is low <u>₹10,218</u> north <u>NARSED</u> ③ <u>Less than 6%</u> know of MSP (<u>NSSO survey</u>) this legislation can boost awareness ④ <u>CACP in its report</u> said legalisation can help boost <u>farmer confidence & production</u>	

Date:	UPSC	Topic
Question No.		Remarks
	However, it has roadblocks: ① Lead to <u>high fiscal burden</u> for state ② Increase <u>judicial cases</u> = already lot of burden (<u>4 crore case pending</u>) ③ <u>[Maharashtra case study]</u>: MSP was enforced but when prices dropped buyers withdrew from market → huge loss. ④ <u>[NITI Aayog]</u> said price unsupported by demand and supply is not economically feasible. ⑤ Cannot solve <u>issues like lack of forward & backward linkages</u>. ⑥ Further reduce focus on <u>capex</u> and shift to revenue. ⑦ <u>Inflation can increase</u> (which is already high <u>9%</u> in August 2023 (food inflation CPI))	

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	Measures to make procurement effective: ① <u>Decentralised procurement</u>: by large states at their own level <u>[Ananta Kumar Committee]</u> ② Promote <u>PM-APSTAR Model</u> of bidding price difference, <u>private procurement</u>. ③ <u>Crop diversification</u>: shift-away from rice-wheat to pulses, oilseeds, millets for <u>WIN-WIN</u>. ④ Bring <u>mandi reforms</u>: to make the procurement as per <u>grading weight</u>. ⑤ <u>Reduce populist measures</u>: like MSP Bonuses. ⑥ Transition to <u>regulated and controlled 'Contract farming'</u> MSP must be a medicine not a staple diet, which is also in interest of overall Sector.	

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Q14:	Food Corporation of India (FCI) is a <u>statutory body</u> under the Ministry of <u>Consumer Affairs and Public Distribution</u>. It is the apex body to procure and store crops for government. <u>Role of FCI in PDS</u> :- ① <u>Procurement</u> : of crops from the market based on <u>MSP</u>. Indeed <u>Central Issue Price</u>. ② <u>Storage of Grain</u> : through Buffer stocks (eg) <u>SSMT of Rice</u> stored by FCI in <u>2024</u> ③ <u>Distribution of grains</u> : from surplus surplus to deficit regions ensuring food security ④ Releasing grains to <u>maintain price levels</u>.	

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	and check <u>cyclical inflation</u> (Cobweb) ⑤ Coordinate with <u>State level warehouses</u> and bodies to develop <u>ecosystem</u>. ⑥ Undertake <u>research & development</u> to make system better. <u>Yet FCI faces lot of challenges:</u> ① <u>Cover & Plinth system</u>: leads to loss of grains. ② <u>Shortage of cold storage infrastructure</u>: by 30-40 lac tonnes (Dahai Committee). ③ <u>Excess buffer stocks</u>: blocks public funds. eg: <u>4 times</u> buffer stock of rice (2024) ④ <u>Pest attacks and diseases</u> (Aflatoxin) found in CAG Report. ⑤ <u>FIFO followed</u> leading to poor quality of stock at end.	

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	<u>Necessary reforms:</u> (as per <u>SHANTA KUMAR COMMITTEE</u>) ① <u>Outsource procurement to large states</u> ② <u>Develop scientifically managed warehouses</u> ③ <u>Reduce procurement for 1 million + cities</u> <u>and allow direct benefit transfer</u> ④ <u>Decentralised Storage:</u> like <u>[PUSA Cabins]</u> ⑤ <u>Reform in the FIFO model of</u> <u>issue by proper inventory management</u> ⑥ <u>Reduce pest/diseases through monitoring</u> <u>and quality controls of ISO</u> A reformed FCI can go a long way to <u>reduce food wastage</u>, control <u>hunger</u> and pave way for a "<u>KUPOSHAN</u> <u>MUKT BHARAT</u>."	

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Q15:	Nano-technology works on the granular scale of <u>1 billionth</u> of a meter (1 nano-meter). At such size, particles depict unique properties which can be tapped in Agriculture. <u>Role of Nano-tech:</u> ④ <u>For Agricultural Productivity & Food security</u> ① <u>High shelf life:</u> (eg) Flavr-Savr Tomatoes ② <u>Controlled pest-attacks:</u> (eg) use of <u>nano-gels</u> ③ <u>Regulated use of fertilizers:</u> (eg) <u>nano urea liquid</u> <u>500 ml = 1 urea bag</u> ④ <u>Nano-sensors:</u> to be used to monitor <u>bovine and cattle wealth</u> (<u>536 million</u> animals = <u>Livestock Census</u>)	

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	⑤ <u>Nano-particles</u>: can be used to enhance <u>soil quality</u> and develop degraded soil. ⑥ <u>Medicines and drugs of nano scale</u> to boost <u>food fortification</u> = <u>Nano-biotechnology</u> <u>Recent developments :-</u> ① <u>Nano tech Mission</u> has been brought ② <u>Biotech KISAN</u> to promote adoption of technology in farm. ③ <u>Kisan Vikas Kendras</u>: to boost technology adoption in farm sector. ④ <u>Latest Concepts</u>: → Nano sensors → Nano-particles → Nano-Urea liquid. → Nano-fertilizers.	

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Question No.			Remarks
	<u>Benefits:</u> ① Higher productivity ② Lesser environmental damage ③ Help boost farmer income by 2x. ④ Reclaim degraded soil (30% land degradation) ⑤ Reduce cost of output -	<u>Risks:</u> ① <u>Lack of skills</u> to use Nano-tech ② <u>Ethical concerns</u> due to gene spillover. ③ <u>Costly, expensive</u> to use ④ <u>Promote mono-cropping</u> ⑤ <u>Misuse</u> if in wrong hands	
	Nano-technology is a technology which is here to stay. It has to be regulated well to strike a balance <u>in growth of agriculture and the potential side effects:</u>		

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Q16:	The latest Nobel Prize Physics of 2023 has brought <u>QUANTUM DOTS</u> to the spot-light due to their immense potential. <u>What are quantum dots?</u> They are <u>sub-atomic particles</u> made in laboratory for <u>specific purposes</u>. They work on the basis of quantum physics (physics at small scale). <u>Application of Quantum Dots:</u> ① <u>Quantum tubes</u>: are used for <u>drug delivery</u> in small areas. ② <u>Quantum dots</u> can be used to transport <u>nano-cameras</u> aiding in <u>medical diagnosis</u>.		

Date:	UPSC	Topic
Question No.		Remarks
	③ <u>Unique color properties</u> - allow their usage in <u>electronics</u>, and <u>display sets</u>. ④ <u>Flexible screens</u>: can be made using quantum dots (eg: <u>curved LED</u>, <u>Rolling smart TV</u>). ⑤ <u>Role in material sciences</u>: used to design new material and promote research. ⑥ Can be used to <u>monitor flow rates in pipelines</u> and make necessary change. ⑦ Quantum dots can be converted to <u>quantum sheets</u> which can aid <u>circuit design</u> and fabrication.	

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	<u>Though it has challenges</u> <pre> graph TD A[Though it has challenges] --> B[Small size Can be misused] A --> C[Lack of access to technology by developing countries] A --> D[Dual use technology Can go into wrong hands] B --> E[<u>Lack of global regulation</u>] C --> E D --> F[<u>Costly and accessibility issues</u>] </pre> Quantum Dots can be a <u>Revolution</u> in the field of science. <u>Case</u> <u>Bayan</u> rightly said "<u>we can do</u> science and with that <u>we can</u> <u>change lives</u>".	

Date:

Question No.

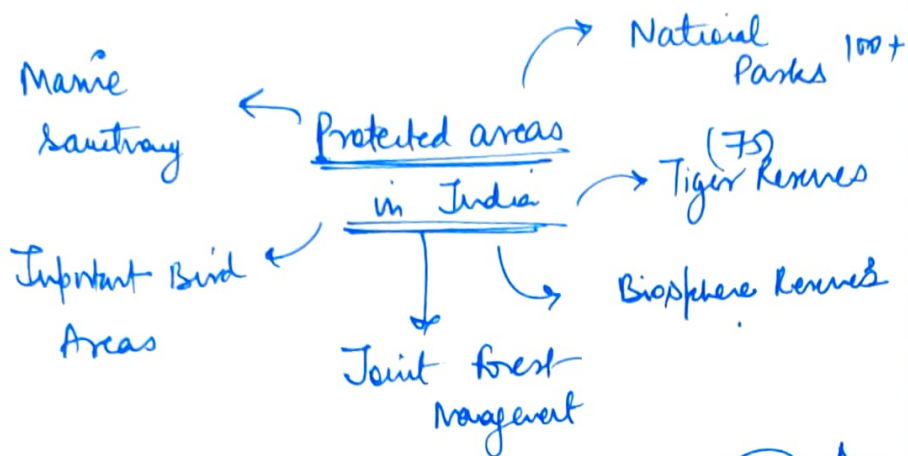
UPSC

Topic

Remarks

Q17:

Biodiversity of India is rich and widespread with 4% land hosting ~8% of world species along with 3 hotspots.



* Total Protected Areas under coverage ~ (5%) *
of total land.

Role of protected areas in Biodiversity:

- ① Provide a safe and secluded zone for habitation
- ② Helps allow in-situ conservation of species (eg.) Tigers
- ③ Promote a balance in role of man

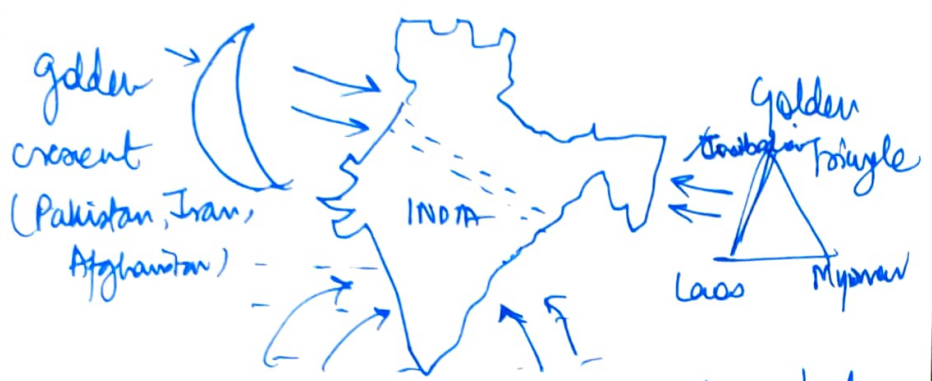
Date:	UPSC	Topic
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	and wildlife (eg: MAB Model of UNESCO. ④ <u>Reduce extinction risk</u>. eg: Great Indian Bustard, Gir lions. ⑤ Check deforestation and human activities by zoning  ⑥ Allow for <u>research and data collection</u> (eg: m-strips, cameras for monitoring, cameras for wildlife movement) ⑦ <u>New species brought</u>: Leopard at <u>Shedden NP</u>. <u>Positive effects</u> of NP, WLS, BS. → <u>Double tiger target</u> before 4 years → Develop <u>safe passages</u> (Elephant Green corridors) → <u>Save critically endangered species</u>: Gharials at Chambal WLS. → <u>Reduce interruption deforestation</u> by aiding in check on non activities	

Date:		Topic
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	<u>However issues remain</u> ① <u>Hunting and animal trafficking prevalent.</u> ② <u>eg: Tiger skin, Elephant tusk.</u> ③ <u>Increasing non-animal conflicts:</u> (222 elephants electrocuted in last few years). ④ <u>Low area coverage:</u> only 5% of landmass ⑤ <u>Risk of genetic issues:</u> due to lack of genes from different locations. ⑥ <u>Shortage of trained vets, scientific tools.</u> ⑦ <u>Overregulation:</u> by forest officials, leading to trouble to tigers. "The real progress of nation is measured on how its animals are treated". We need technology, community participation (<u>Waka Mitra Paridhi Model Para TR</u>) along with <u>"landscape based Wildlife Plan"</u> in forest strategy.	

Date:	UPSC	Topic
Question No.		Remarks
Q18:	Under the latest WHO Reports on Air Quality, close to <u>39 Indian cities</u> are found in Top 50. The report also highlighted high PM_{2.5} / PM₁₀ & ozone pollution. <u>Reasons for high PM_{2.5} / PM₁₀ :-</u> ① <u>High level of fossil fuel burning</u>: (56%) energy production from fossils. ② <u>High vehicular emissions</u> of SO_x, NO_x. ↳ India = largest 2/3 wheeler market. ③ <u>Polluting Industries</u>: like cement, leather plants around cities <u>eg: NCR</u> ④ <u>Stubble burning</u>: cause emission of particulate matter.	

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Question No.		Remarks
	⑤ <u>Bringing of garbage</u> in dumps such as <u>Okhla, Gaziipur landfill</u> <u>Reasons for Ozone Pollution</u> :- ① <u>Chlorine</u> emissions from chemical industries (<u>organic & inorganic</u>) ② <u>Bromine</u> released from <u>fossil fuel</u> burning, <u>garbage</u> burning, etc. ③ <u>Lack of pollution</u> <u>capture</u> devices at factories. ④ <u>High animal husbandry</u> leading to <u>methane</u> release. <u>Various steps taken by government:</u> ① <u>National Air Quality Index</u> (NAQI) by CPCB. ② <u>National Clean Air Programme</u> to reduce PM_{2.5}/PM₁₀ by <u>30%</u>.	

Date:	UPSC	Topic
Question No.		Remarks
	③ More than <u>800</u> air monitoring stations installed. ④ <u>Montreal Protocol</u> & ^{Vienna} Vienna Protocol adopted to check ozone release. ⑤ <u>Portals like</u> : <u>SAMEER</u> to monitor quality ⑥ <u>Stack towers</u> to check level of <u>PM_{2.5}/10</u> ⑦ in Delhi at <u>Camaght Place</u> ⑦ Addition of <u>WHO Standards</u> for monitoring Air quality ⑧ <u>Graded Action Plan</u> and <u>Committee</u> for monitoring air quality - in NCR brought. The government must check air pollution as India accounts for <u>~17% deaths worldwide</u> (WHO). This calls for urgent reforms in CECB and decentralised participation via <u>2 lac + Panchayati Committees/Ngo's</u>.	

Date:	UPSC	Topic
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Q19:	INCB Report 2023 throws light on the growing menace of drug in India. As per <u>UNODC Report</u>, close to <u>5 crore people</u> engage in <u>rarebit</u> which is alarming. <u>DRUG MENACE IN INDIA</u>  Main route account for 70% drug trade and smuggling <u>Dimensions of drug challenge :-</u> ① India as a '<u>transit route</u>' between Golden Crescent and Golden Triangle ② <u>Sophisticated technology</u> used like <u>drone</u> to deliver drugs in Punjab	

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	③ <u>Linkage with separatism</u> highlighted by <u>EAM S Jaishankar</u> in recent talks - used to fuel each other. ④ <u>Manie route</u> of <u>Bay of Bengal</u> / <u>Brahmaputra</u> used to ease in smuggling. ⑤ <u>Linkage to terrorism</u>: due to client service provider relationship <pre> graph LR OC[Organised crime] -- money --> TG[Terror groups] TG -- "weapons & safe passage" --> OC </pre> ⑥ <u>Intentional angle</u>: to radicalise and destabilise Indian demographic dividend ⑦ <u>Dark web</u> used to trade drugs. ⑧ <u>Nexus of bureaucracy - local police - politicians</u> in the setup. ⑨ <u>Objectification & glorification by media</u> ⑩ <u>Mirzapur web series</u>.	

Date:	UPSC		Topic
Question No.			Remarks
	<u>Multi-pronged approach:</u>		
	<u>A Supply side Issues:</u>		
	① Cooperate with neighbours for Joint Operations ② Border check posts and monitoring ③ Faster execution under NDPS Act. ④ <u>Technology usage to monitor</u> : like Bigdata, AI, ML to predict routes. ⑤ Capacity Building of NCB/CBI = institutional coherence + <u>Intelligence gathering</u>		
	<u>B Demand side:</u>		
	① <u>Target hotspots for rehabilitation</u> (eg: <u>Moroh in Manipur</u>) ② Treatment as ' <u>victim</u> ' = chance to reform.. ③ <u>Awareness drives by role models</u> : like <u>Sachin Tendulkar</u> , <u>Anir Khan</u>		
	More operations like <u>Operation Samachra Gupta</u>		
	is needed to nip the drug menace from bud and make <u>"NASHA-MUKT BHARAT"</u>		
	By (2047) .		

Date:	UPSC	Topic
Question No.		Remarks
Q20:	Left Wing Extremism (LWE) is one of the most pressing internal security challenge started at <u>Naxalbari</u> by <u>Chamu Majumdar</u>. Tackling it calls for a dual pronged approach as per <u>2nd ARC 7th Report</u>  <u>Carrot model</u> <u>soft approach</u> BALANCE  <u>Stick Approach</u> <u>hard measures</u> <u>Root causes of Naxalism:</u> → <u>Breach of Jale, Jangle and Jansen</u> (40%) displacements by tribals despite 8.6% population → <u>Poor implemented reforms in 5th schedule, PRA Act</u> → <u>Governance deficit</u>: (24%) households have tap water in Dantewada → <u>International support</u> = by Nepal, China, Bangladesh.	

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Question No.		Remarks
	<u>[Need for soft approach]</u> 'WHAM' → helps to build and <u>[Win Hearts and Mind]</u> → Bring governance to people <u>Measures involve:</u> ① <u>Swadesh Aam Rahat Schemes</u>: New life, money support. ② <u>Job creation</u>: eg: <u>Eco tourism in Meghalaya</u> ③ <u>Infrastructure</u>: PM DEVINE, Mobile towers under USOF, water connectivity via Bangladesh, Kaladan Project ④ <u>Separate funding</u>: support to <u>NE sub plan</u>. ⑤ <u>Best practices</u>: <u>brush</u> <u>Lunch with collector</u> model to bring people close to collector for a day by <u>Mr Sarvek Kumar</u> <u>[Need for hard approach]</u> → also needed to check the hard criminals who are difficult to deradicalize.	

Date: Question No.	UPSC	Topic Remarks
	<u>Measures wished</u> ① <u>Police Station fortification</u>: via security expenditure reinforcement. ② <u>Special Combat groups</u>: Greyhounds, Black Panther. ③ <u>Counter operations</u>: Operation Sunrise (Myanmar), Operation Allout (Bhutan). ④ <u>Advanced weaponry</u> used mines, AK-47 guns. ⑤ <u>Surveillance and intel gathering</u>: to thwart their next moves. LWE deaths have come down by <u>90%</u> as per <u>MHA</u> and districts have been reduced to around <u>40%</u>. A smart model of hard & soft power can allow to move from <u>"FRICTION"</u> to <u>"FUSION"</u>.	