

NEXT IAS

GS MAINS ADVANCED COURSE 2024

(To be filled by candidate)

TEST CODE: GSMAC2407

Test No. 07

Name of Candidate: Sanchit Sharma Mobile No

Roll No. : PTPP220200 Start Time 9:00 AM End Time 12:12 PM

Date of Examination: 10/09/2024 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
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	
TOTAL MARKS - 150		

GRAND TOTAL -/ 250

EVAL CODE: EVAL DATE:

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 20 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:

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

NEXT IAS

Can
write

1. केंद्रीय बजट 2024-25 में दीर्घकालिक पूंजीगत लाभ (LTCG) और प्रतिभूति लेनदेन कर (STT) के संबंध में महत्वपूर्ण परिवर्तनों पर टिप्पणी कीजिए। भारत की बचत और निवेश व्यवस्था पर ऐसे परिवर्तनों के प्रभावों का मूल्यांकन कीजिए। (10 अंक, 150 शब्द)

Comment on the important changes with respect to the Long-Term Capital Gains (LTCG) and Securities Transaction Tax (STT) in the Union Budget 2024-25. Evaluate the impact of such changes on India's savings and investment regime. (10 marks, 150 words)

Recent budget has provided important change in LTCG & STT to boost capital markets in the country.

- ① Reduced LTCG to around half of earlier rate
↳ Also improvement in ease of doing business in LTCG.

- ② ~~Reduce~~ Increased short term capital gains tax.

③ ~~Reduction in STT~~

- ④ Measures for streamlining the process of stock market transactions.

Positive Impact

- ⊗ Reduce / disincentivise short term trading
→ Hence reduce potential of sudden withdrawal / overwhelming of market

- ① Incentives long term investments :-
 - Hence Secure FPI
 - Also stability to stock market and better predictability
- ③ Overall increase in taxes to government possible
- ④ Curb insider trading / stock market manipulation in short term
- ⑤ Overall smoothening of stock market transaction = Greater reliability
- ⑥ Reduction in long term taxes
 - help in increasing loyal investors
 - Boost mutual funds

Problems that could arrive

- ① May Reduce short term investment
 - ② ~~Excess~~ May curb immediate profit making and hence make Indian stock market less attractive
 - ③ Temporary fall in ~~revenue~~ revenue might be there
 - ④ may curb international investment
- The ~~measures~~ measures taken in budget for LTCG & STT are in line of "Fair of Doing Business"

2.

भारत की एक कल्याण योजना "कोई भी व्यक्ति पीछे न छोड़े" की कहावत के साथ आगत-आधारित दृष्टिकोण से परिणाम-आधारित सशक्तिकरण में परिवर्तन आया है। उपरोक्त कथन के आलाोक में, चर्चा करें कि सरकार के दृष्टिकोण में इस परिवर्तन ने समावेशी विकास को किस प्रकार बढ़ावा दिया है। (10 अंक, 150 शब्द)

India's welfare scheme has undergone a shift from an input-based approach to outcome-based empowerment with the maxim of "no person left behind". In light of the above statement, discuss how this change in the approach of the government has fostered inclusive growth. (10 marks, 150 words)

Outcome budgeting / performance based grant and Better targeting through data collection are certain initiative, to ensure Inclusive growth (growth of even most marginalized)

Change in Approach $\Rightarrow$ fostering Inclusive Growth

① Sarvodaya :- Reducing omission errors
 (e.g.) Jan chun Accounts $\Rightarrow$ women (60%)

② Better service delivery in rural areas
 (e.g.) mandatory internship in rural PHCs to MBBS graduates.

③ Rehabilitation of slums in most effective way
 (e.g.) Dharravi - Public Private Partnership

④ Higher investment for lower caste/tribal population :- (e.g.) scheme, like Eklaagya model school,

⑤ Direct monitoring by PM and regular interaction with DM's :-

⑥ PM Aarogya Yojana - efficient

⑥ Performance based fund :- incentive ground work rather than paper work

⑦ rural road construction in MP

⑦ Incentivize reforms (long pending) in even backward states :-

⑧ Additional 0.5% ~~to~~ state GDP
credit for Discom reforms

⑧ Measures taken to reduce inequality and make equitable growth

⑨ PM KISAN AOT

⑨ Promote efficiency & effectiveness of government schemes

⑩ tech. change, in Pradhan Mantri Beema Yojana to encourage more insurance company
→ hence increasing farmer's participation

Further the Inclusive growth "which is a pillar of Budget FY25 could be fostered by monitoring / data collection for outcome Budgeting.

3. भारतीय कृषि की वर्षा आधारित प्रकृति इसे जलवायु परिवर्तन के प्रति अधिक संवेदनशील बनाती है। कृषि की जलवायु-अनुकूलता में गुणवत्तापूर्ण सिंचाई के महत्व पर प्रकाश डालिए। भारत में उपलब्ध सिंचाई पद्धतियों की समग्र दक्षता में सुधार के लिए क्या-क्या उपाय किए जा सकते हैं? (10 अंक, 150 शब्द)

The rainfed nature of India's agriculture makes it more susceptible to climate change. Highlight the importance of quality irrigation in the climate-adaptability of agriculture. What measures can be undertaken to improve the overall efficiency of the available irrigation practices in India?

(10 marks, 150 words)

Indian Agriculture is around 50%
rainfed (Agri survey 2016). Hence it is
possible that 25% productivity of agriculture
may be impacted by climate change (economic
survey)

Importance of quality irrigation

- ① Enhance "per drop more crop" (efficiency)
- ② Reduce soil salinisation
- ③ Reduce water logging due to flood irrigation
- ④ Reduce soil ~~irrigation~~ erosion (⁽⁴⁾ Tharukhanel)
- ⑤ Take water to every corner of India
→ Hence improve productivity
- ⑥ Reduce susceptibility to Drought
(⁽⁴⁾ Marathwada)
- ⑦ Better water quality ⇒ reduce soil pollution
- ⑧ Reduce runoff to the river and
hence decrease eutrophication
- ⑨ Make groundwater table long lasting &

reduce drying of wells
Measure to be undertaken

① Increase lined canal construction under PMKSY

reduce seepage/wastage reduce waterlogging & salinisation

② Promote micro irrigation:-

④ Sprinkler / Foggers

③ Promote Precision irrigation:-

⑤ Fertigation:- fertiliser + Drips
 (per drop more crop)

④ Reduce over consumption of ground water and improve GWT. (⑥ Fine on GWT usage in summer)

⑤ Utilise Dewas model:- Amrit Sarovar creation
 ↳ Pond in $\frac{1}{10}$ th of the field

⑥ Utilise trenches / wetland construction for healthier GWT recharge
 (⑦ Kalma Yatra - Ihabua)

⑦ Promote tech intensive agriculture to reduce water consumption
 ⑧ Vertical Farming / polyhouse construction

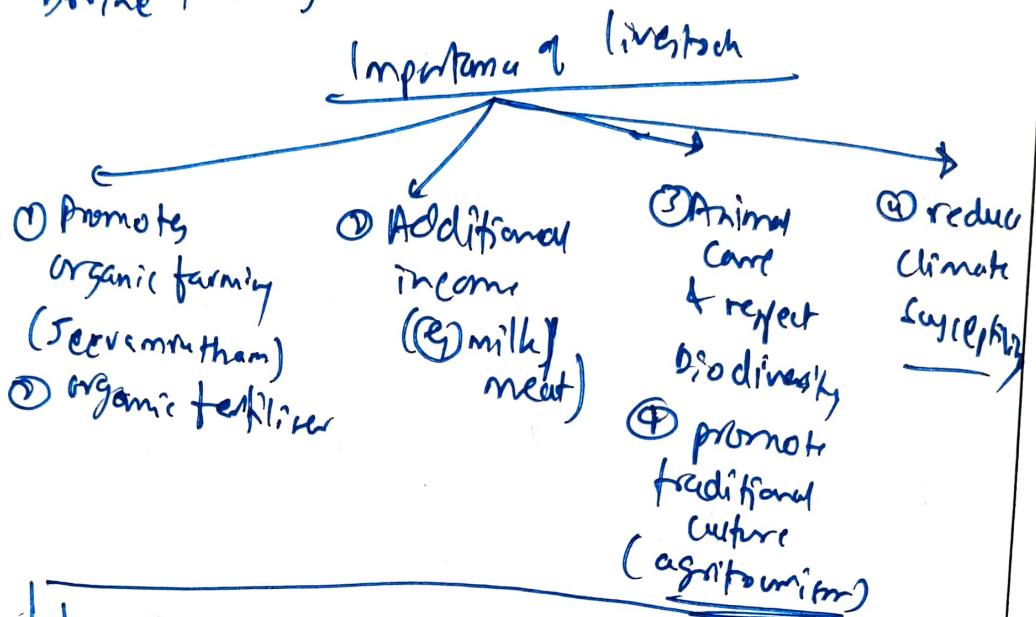
Overall water efficiency in agriculture could help in achieve SDG 13 (Climate Action)

4.

भारतीय कृषि में पशुधन के महत्व को ध्यान में रखते हुए, विश्लेषण करें कि पशुपालन में निवेश भारतीय कृषि को प्रोत्साहित करने में किस प्रकार मदद कर सकता है। (10 अंक, 150 शब्द)

Considering the importance of livestock in Indian agriculture, analyze how investment in animal husbandry can help in incentivizing Indian agriculture. (10 marks, 150 words)

India hosts highest number of bovine / draught animals in the world.



Investment in Animal Husbandry could incentivise Agriculture by

① Better productivity of livestock :-

② World average is around 1.5 times higher productivity than India.

② Multipurpose use promote :-

③ Low cost ← dung, urine etc
milk
leather

③ Additional income for investment in farm

④ income from livestock → purchase tractor.

- ④ Reduce input costs :- ① Fertiliser ^{organic} / Pesticide
- ⑤ Improve overall agriculture productivity
- ② due to reduction in soil salinity due to chemical fertiliser
- ⑥ Increase drought resilience of farmer
- ③ Better moisture retention due to high organic content
- ⑦ Better residual management :-
- ④ wheat fodder

⑧ Promote food processing and livestock based export economy

⑨ Also, upward & downward linkage of livestock promoted

⑤ veterinary care

⑩ Promote Agricultural tourism in rural areas

< livestock breeds (traditional agriculture is nowadays in demand)
organic farming

Hence Improving investment in livestock could be helpful in doubling Farmer income

5. आंध्र प्रदेश में भारतीय लॉरेल वृक्षों (Indian Laurel trees) की खोज ने पेड़ों में पानी को संग्रहीत करने और छोड़ने (store and release) की क्षमता में वैज्ञानिकों की रुचि जगाई है। इस संदर्भ में, पेड़ों में जल परिवहन और भंडारण (transportation and storage) की प्रक्रिया के पीछे के विज्ञान की व्याख्या कीजिए। (10 अंक, 150 शब्द)

The discovery of Indian Laurel Trees in Andhra Pradesh has sparked the interest of scientists in the capacity of trees to store and release water. In this context, explain the science behind the process of water transportation and storage in trees. (10 marks, 150 words)

Trees are having Internal system to absorb water from the roots and store and transport. Hence could stand even in drought / dry season for long time with limited water.

Science behind process of water transportation and storage

- ① Osmosis based absorption :- due to difference salt content in roots and soil osmosis happens
- ② Also some plants directly absorb water from atmosphere (leaf based absorption)
- ③ Water transportation through stems and branches by Xylem.
→ capillary action for the

movement of water .

④ Water gets stored in leaf and branches
→ mainly the large cell vacuoles

store the water

→ release water slowly when
need to make food

⑤ Also, during dry season (deciduous trees)
- have mechanism to relocate water from
leaves to stems as leaves are shed.

⑥ lot of water < evapo transpiration
fruit falling / leaves falling

Hence above mechanism of plant
helps in its sustenance in even drier/
wetter season.

6. सैन्य क्षेत्र में जिम्मेदार कृत्रिम बुद्धिमत्ता पर हाल ही में आयोजित वैश्वक शिखर सम्मेलन (आरईएआईएम, 2023- responsible artificial intelligence in the military domain) ने सैन्य अनुप्रयोगों में कृत्रिम बुद्धिमत्ता के उपयोग से जुड़े अवसरों, चुनौतियों और जोखिमों को प्रदर्शित किया। इस संदर्भ में, रक्षा और सैन्य अनुप्रयोगों में कृत्रिम बुद्धिमत्ता के प्रभाव का आलोचनात्मक विश्लेषण कीजिए। (10 अंक, 150 शब्द)

The recently conducted global Summit on Responsible Artificial Intelligence in the Military Domain (REAM, 2023) showcased the opportunities, challenges and risks associated with the use of Artificial Intelligence in military applications. In this context, critically analyse the impact of Artificial Intelligence in defence and military applications. (10 marks, 150 words)

REAM summit organised and hosted by India brought world leaders to agree upon possible threats & uses of AI in military.

Impact of AI in defence and military applications

④ Positive :-

- ① Optimise deployment of military personnel
- ② Analyse data on security issues and provide wider picture (e.g. organised crime data - control drug traffic)
- ③ Vast intelligence data could be accumulated & analysed (e.g. NATGRID integrated with AI)
- ④ Could optimise the weapon usage and availability and also predict future requirement
- ⑤ Automate border defence :- (e.g. 5400 missile defence)
- ⑥ Automatic guns with pin pointed accuracy

- ① Hence overall impact of reducing cost of maintaining defence personnel and increase national security
- ② Reduce harm to personnel → ④ automatic jets without any personnel

Negative Impact

- ① AI use by terrorist → optimize infiltration routes
↳ could be used for social media data analysis - plan Attacks
- ② Differential development/availability of technology with developing & developed countries
③ China - more powerful AI → could overtake India
- ③ Misuse by surveillance state
- ④ AI race in military → could deter overall peace
- ⑤ AI could propagate more military equipments
→ Hence against Disarmament principle

Hence the Responsible AI summit provides call for global regulation on development & use of military AI.

7. लोक लेखा समिति ने हाल ही में प्लास्टिक प्रदूषण के बढ़ते खतरों के बारे में चिंता व्यक्त की है। इस संदर्भ में, प्लास्टिक प्रदूषण को रोकने के लिए सरकार द्वारा हाल ही में प्रारम्भ की गई पहलों पर प्रकाश डालिए। (10 अंक, 150 शब्द)

The Public Accounts Committee has recently flagged concerns about the rising menace of plastic pollution. In this context, highlight the recent initiatives taken by the Government to curb plastic pollution.

(10 marks, 150 words)

Plastic pollution includes single use plastic littering, landfilling of plastic, microplastic accumulation in ocean etc which is causing huge menace.

Initiative by Govt. to curb plastic pollution

- ① Plastic waste management rule 2016.
 - ⑥ Provide targets for reduction of plastic waste
 - ⑦ Extended Producer Responsibility
 - fine to companies who are not recycling equivalent plastic
 - ⑧ Awareness about circular economy and 3Rs
 - ⑨ Plastic deposit banks / Centres
- ② Ban on single use plastic specially in some fast moving consumer goods,
 - ⑩ minimum 120 μ m thickness of plastic
 - encourage feasibility of recycle
 - ⑪ Strict implementation of ban (⑫ Indore model)

③ Curbing plastic pollution on beaches:-

① Voluntary plastic removal campaigns
(75-75-75 campaign)

② Application / mobile app to register as
volunteers

③ Collaboration with NGOs / NIS etc.
to remove plastic accumulated on beaches

④ Plastic usage in road construction

① PM Gram Sadak Yojana - 8% plastic
- up

⑤ Promoting private startups for alternative

agri
① Kriya Labs - IIT Delhi = residual
based Poly bags

⑥ International collaboration and lead :-

① MARPOL → reduce marine pollution

↓
UN → Beach plastic pollution campaign

Hence the above measures to curb
plastic pollution by India are in line
with SDG 14, 15 (Life over land & water).

8. भूस्खलन एक प्राकृतिक घटना के बजाय मानव-प्रेरित घटना बन गई है। भूस्खलन की बढ़ती घटनाओं के कारणों पर प्रकाश डालें और आपदा को कम करने के लिए क्या उपाय किए जा सकते हैं। (10 अंक, 150 शब्द)

Landslides have become more of a human-induced phenomenon rather than a natural phenomenon. Highlighting the reasons for increasing incidences of landslides, suggest measures that can be undertaken to mitigate the disaster. (10 marks, 150 words)

Landslides are mass movement of rock and debris from mountains. Recent Wayanad landslide led to complete sweeping of a village. (750 killed)

Reasons for increasing landslides

- ① Erratic Rainfall pattern :- due to climate change
 ↳ (a) cloudburst in Uttarakhand (2013)
- ② Excessive construction and overloading of hilly areas :- (a) Todimath landslides due to NITC tunnels
- ③ Unregulated tourism and vehicular movement
 ↳ overburdening soil
- ④ Lack of knowledge about Earth's interior fault location
- ⑤ Sudden withdrawal of underground water
 → reduce soils bearing capacity
- ⑥ Mining, industrialization etc on hilly areas

- ⑦ Recent landslide, mostly triggered by high downpour and hence reduced slope stability (⑦ weakened)

Measure, that could be taken

① Structural:- (as per NDMA guidelines)

① Use of Retaining wall

② Anchor ties/ bolts and use of construction engineering

③ Stabilize slopes $\left\{ \begin{array}{l} \text{reduce slope angle} \\ \text{shortening the slopes} \end{array} \right.$

④ Use of grouting in cracks of hills,

⑤ Planting grasses / trees on slopes

② Non-structural:-

① Reduce construction on hills

② Hazard zone mapping and fault mapping

③ Early Warning system and rehabilitation

④ Aapad Mitra (volunteers)

Above measures could hence reduce landslide risks and in direction of Sendai framework

9. राष्ट्रीय सुरक्षा के लिए खतरे धीरे धीरे "भौगोलिक" से "विषयगत" (thematic) में बदल गए हैं। इस संदर्भ में, आंतरिक सुरक्षा की समकालीन चुनौतियाँ (contemporary challenges) क्या हैं और ऐसी चुनौतियों से निपटने के लिए क्या उपाय किए जा सकते हैं?

(10 अंक, 150 शब्द)

The threats to national security have gradually transformed from being "geographic" to being "thematic". In this context, what are the contemporary challenges of internal security and what measures can be undertaken to deal with such challenges?

(10 marks, 150 words)

There is agregation and integration of various internal security threats due to increased physical and digital mobility along with globalization (transborder threats) making threats as thematic.

Contemporary challenges

- ① Hybrid warfare :- ④ Pakistan - both conventional & unconventional warfare
- ② Gray Zone warfare :- ④ lone wolf attacks
↳ not against territorial integrity directly
- ③ Cyberattacks at large scale :- critical infrastructure threats
↳ ④ AIIMS data corrupted
- ④ Use of technology by all conventional threats
④ Bitcoin based funding to insurgents / Naxalites & terrorists

- ⑤ Use of automated weapons and threat of weapons of mass destruction possible with terrorism
 - ⑥ Increasing nexus of organized crime with terrorism/insurgency (⑤ NE insurgency fuelled by opium)
 - ⑦ Radicalisation through social media
- Measures to be undertaken

- ① International collaboration :- ⑤ upgrade FATF mandate to even curb crypto based funding
- ② Capacity building of forces :- ⑤ Greyhound,
- ③ Border Infrastructure development :- ⑤ Atai tunnel / vibrant village
- ④ Improve Intelligence network / online surveillance - new ⑤ Fact checking unit / MAC etc
- ⑤ Promote "Heart and mind approach" ⑤ value based education in terror affected areas to reduce radicalisation

Above measures can make sure the high level internal security of India in modern times.

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10. भारत के सीमा सुरक्षा ढांचे को मजबूत करने और सीमा पार खतरों से निपटने में उन्नत सीमा निगरानी प्रौद्योगिकियों (enhanced border surveillance technology) की भूमिका का मूल्यांकन कीजिए। (10 अंक, 150 शब्द)

Evaluate the role of enhanced border surveillance technologies in bolstering India's border security framework and addressing cross-border threats. (10 marks, 150 words)

Border Surveillance technologies includes radar, microwave etc to detect any threat or infiltration from the border to internal security.

Achievements by Border surveillance tech

- ① Curbing Infiltration of terrorism/insurgent
 - ① Bold QIT microwave detection (Bangladesh border)
- ② Equip military intelligence
 - ① intel about where the terrorists are located
- ③ Curb weapon exchange through border
 - ① drone detection and anti drones by DRDO
- ④ Reduce illegal immigration and threat to security / destabilisation
- ⑤ Reduce number of Personnel deployed in border
 - ① Hence reduce cost of border maintenance
→ Also lesser threat to lives of military personnel

- ⑧ Making border villages tech intensive and tech based
- ⑨ Improve management of resources at border
- ⑩ Reduce requirement of Border fencing.
- ⑪ Check infra, structure development on border & ~~other~~ neighbour, (e.g. Chinese Roads)

Limitation,

- ① Still many areas at border have no surveillance tech
 - ② Methods are present to by-pass border surveillance
 - ③ tunnel, by infiltration
 - ③ Old technology - lack upgradation
 - ④ High cost of deployment of tech
 - ⑤ Difficult terrain :- tech. deployment not possible everywhere
 - ⑥ Depends on electricity resources for continuous surveillance = But border area lack it
 - ⑦ Border village surveillance :- against right to privacy (Puttaswamy)
- To improve Border surveillance tech, we need to invest more in it & integration

11. जबकि भारत में स्टार्टअप्स ने अर्थव्यवस्था में उद्यमशीलता और नवाचार को बढ़ावा देने में उल्लेखनीय सफलता हासिल की है, भारत में स्टार्टअप्स की स्थिरता को चुनौती देने वाले कुछ संरचनात्मक मुद्दे हैं। स्टार्टअप्स के सामने आने वाली इन चुनौतियों पर प्रकाश डालें और समस्याओं के व्यावहारिक समाधान सुझाएं।

(15 अंक, 250 शब्द)

While startups in India have achieved notable success in fostering entrepreneurship and innovation in the economy, there are certain structural issues challenging the sustainability of startups in India. Elucidate upon these challenges faced by startups and recommend practical solutions to the problems.

(15 marks, 250 words)

Startup ecosystem in India is rising and hence there are more than 100 unicorns present in India.

Challenges faced by the startups

- ① Poor credit availability
- ② Collateral demands by banks are high
 - ↳ fear of failure
- ③ Taking an angel investor / venture capitalist → discourage investment
- ④ Lack of FDI in new startups
- ⑤ Mostly concentrated in IT sector
- ⑥ Also Lack of rural / agriculture startups
 - majorly concentrated in cities like Bangalore / Hyderabad

⑦ Poor skilled manpower availability
 → Also rising skill wage premium gap
 & hence skilled worker moving
 out of India (Brain drain)

⑧ Poor regulation & management of startups
 → Greater flexibility & hence more
 tax evasion chances

⑨ Lack of research investments and innovation
environment :-

⑨ research papers not converting into

⑩ Poor land availability

⑪ Higher logistic cost (8-10% GPP) &
 more port turnaround time

⑫ Inverted duty structure in electronics

⑬ Sudden restriction / ban on import / export
 → lack of policy certainty.

⑭ Even after IBC - hurdle in Exit Mechanism

Practical Solutions to address problems

① Reduce taxes on investments in startups
 → incentive

- ② PLI to startups for incentivising incremental increase in production
- ③ PM Koushal Vikas :- higher quality skilled course (e) Quantum / AIE etc
- ④ Incentivising rural startups :-
 - ① PM employment guarantee programme
→ more funds / limit shall be increased
- ⑤ Implement labor code, (ensure hygiene/safety of workers
Also increase Entrepreneurship business)
- ⑥ Reduce collateral requirement in Bank,
- ⑦ Greater interest Subvention in critical sectors like defense / Renewables
- ⑧ Promote international collaboration
 - ① e-Commerce integration
- ⑨ level playing field to the startup-
 - ① reduce monopoly of large company
- more power to C.I.

Startup culture has potential to contribute lot to strengthening economy & hence steps shall be taken.

भारतीय रेलवे के बुनियादी
मूल्यांकन को जिए। सुर
मापदंडों में सुधार के
Critically eval
infrastructure
measures

12.

भारतीय रेलवे के बुनियादी ढांचे के आधुनिकीकरण में सार्वजनिक निजी भागीदारी की प्रभावशीलता का आलोचनात्मक मूल्यांकन कीजिए। सुरक्षा क्षेत्र को रेलवे के लिए प्रमुख चुनौतियों में से एक मानते हुए, भारतीय रेलवे के समग्र सुरक्षा मापदंडों में सुधार के लिए क्या उपाय किए जा सकते हैं?

(15 अंक, 250 शब्द)

Critically evaluate the effectiveness of public-private partnerships in the modernization of railway infrastructure in India. Considering safety as one of the major challenges for railways, what measures can be taken to improve the overall safety parameters of Indian Railways?

(15 marks, 250 words)

PPP as per world bank is medium to long term partnership of public and private sector for better risk and reward sharing.

Effectiveness of PPP in Railway modernisation

Positive

① Platform construction → aesthetic design
efficient horizontal & vertical circulation
Accessible for differently abled

② Habibganj railway station (Bhopal)

③ Ensure multimodal connectivity

④ ^{New} Delhi Railway station III Metro
integrated platform

⑤ Efficient vendor management

⑥ IRCTC food packages / efficient delivery at platform

⑦ Reduce fraud tickets / TT corruption

① UPI/online ticketing model

② Make railway more attractive :- Better service offer

③ Catering service / different type of coaches

④ Maximise operational efficiency :-

⑤ use of ~~AI~~ AI model, by private

⑥ Sanitation and hygiene at platform.

However there are limitations

① Threat & misconception of complete privatisation

② Lack of PPP interest due to unattractive offers

③ Main services like railway operation
→ still totally government control.

④ Poor quality infrastructure even in PPP at some places (⑤ platform overbridge falling)

Yes, safety is major challenge

⑥ Roadside train accident

high loss of line due to derailment & reduce pass on railway,

Disrupts ongoing traffic

Measures for Improving railway safety

- ① Integrate technology :- ① Kawach - satellite
GPS tracking + Automatic
Braking
- ② Reduce human intervention in signalling
 - ① Automatic light based / deteriorating
signals
- ③ Utilize standard model of operation
 - ① Automatic block system
- ④ Interlocking of signals mechanically
- ⑤ training platform personnel and
loco pilots for high level security.
- ⑥ Use of more sleepers, (sleeper density)
and reduce fatigue loading / overcapacity
of railway,
- ⑦ Use of welded rail sections ~~and~~ and hence
reduce creep / joint gaps which leads to
derailment
- ⑧ Utilize AI for optimal train movement
Above measure, could make railway,
more reliable & ensure safety of every
user.

13. "अगर उपज समय पर हमारी थाली तक पहुंच जाए तो खेती लाभकारी हो जाती है।" इस संदर्भ में, भारत में कृषि विपणन और परिवहन क्षेत्र के समक्ष आने वाले अपस्ट्रीम और डाउनस्ट्रीम मुद्दों पर प्रकाश डालिए। इस क्षेत्र की समग्र दक्षता में सुधार के लिए कौन-सी पहलें प्रारम्भ की जा सकती हैं?

(15 अंक, 250 शब्द)

"Farming becomes remunerative if the produce reaches our plates in time". In this context, highlight the upstream and downstream issues faced by the agriculture marketing and transport sector in India. What initiatives can be undertaken to improve the overall efficiency of the sector?

(15 marks, 250 words)

Farm to plate is a concept which ensures fresh food received by consumers in time reducing intermediaries and increasing remuneration of farmers.

Upstream and downstream issues by Agriculture marketing and transport

- ① long distance from village to city / Export centre
- ② Hence rottening of horticulture
- ③ higher logistic cost (8-10% of P)
- ④ Overdependence on roads in lack of multimodal connectivity
- ⑤ Poor penetration of rural roads
- ⑥ Lack of insurance penetration for farm produce transport
→ Hence losses in transport $\rightarrow$ no compensation
- ⑦ Lack of capacity with farmers to themselves

sell to cities

- ⑧ Poor food processing :- Hence low shelf life of food
- ⑨ High post harvest losses (10%)
- ⑩ Poor branding & Agriculture marketing
- ⑪ Lack of awareness about e-NAM
→ Also burden to transport & cost imposed on farmers, sometimes
- ⑫ Over regulation of Agriculture market
 - ① Selling only in APMC mandi allowed
- ⑬ Lack of contract Farming and corporate farming (land leasing)
- ⑭ Poor agri-startup culture for everfresh food & farm to plate startup.

Initiatives needed

- ① Reducing logistic cost

multi modal connectivity

- ① Olerish - dan / leban rail / waterway

Greater rural road construction

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- ② Promote Agri startups :- ② Nifty cent
→ mass scale transportation
- ③ Farmer producer organisation & cooperatives
could be leveraged → better bargaining
with intermediaries
- ④ E-commerce utilisation :-
④ To market
- ⑤ More food processing :- ⑤ Avantimesa
food park
↳ involve private sector
- ⑥ GI tags for agriculture marketing
⑥ Darjeeling tea
- ⑦ Investment in storage / cold storage /
packaging centres etc
⑦ PACS based largest grainery
- hub & spoke model
- ⑧ Leverage e-NAM awareness
deregulate market
- ⑨ Utilize tech :- ⑨ Bitcoin based international
transaction to Export farmers
By Above measures, the upstream &
downstream challenges of Agri marketing &
transport could be tackled to increase
Farmer income.

14.

भारत की कृषि संबंधी निर्यात-आयात की नीतियां किसानों के बजाय उपभोक्ताओं को और अधिक झुकी हुई हैं। दिए गए कथन के आलोक में, किसानों पर आयात और निर्यात नीतियों के प्रभावों का आलोचनात्मक विश्लेषण कीजिए। किसानों का आयात-निर्यात संबंधी मूल्यों के दहशत से बचाने के लिए क्या उपाय किए जा सकते हैं? (15 अंक, 250 शब्द)

India's agriculture export-import policies are tilted more towards the consumers rather than the farmers. In light of the given statement, critically analyze the impact of import and export policies on farmers. What measures can be undertaken to shield farmers from import-export price shocks? (15 marks, 250 words)

Recent ban on Export of rice/wheat/sugar etc. show that how India's EXIM policy in agriculture are consumer oriented.

Impact of EXIM Policies on farmer

Positive:- (1) Reduce hoarding (stock regulation)

(2) Export diversification (3) Agriculture Export Policy

(4) Better remuneration (a, incentives contract farming & food processing)

(5) ~~Reduce~~ Improve Export marketing (6) APEDA

Negative Impact:-

(1) Sudden ban:- lack of permanent linkage of agri exporters

(2) Hence less price realisation to farmer

② Incentivise diverse Exports:-

③ RoDTEP for horticulture Export

③ Policy certainty :- ④ remove exceptions
from Essential Commodities Act

→ Allow exports

④ Implement Contract farming Act in every
State = Promote production of food export

⑤ Leverage FPOs & Cooperatives :- create
permanent export chain

→ Also exempt FPOs from
export ban

⑥ Take other measures to assist consumers

④ DBT

⑦ Created dedicated Export hub for
Agriculture (DESH)

⑧ Reduce Import restrictions

← an. seed, &
fertiliser
(allow HYSD from outside too) → make agri
more
competitive
(reduce
rice
custom duty)

Hence by streamlining agriculture export
& import policy we can achieve objectives of
"Export led growth in Agriculture"

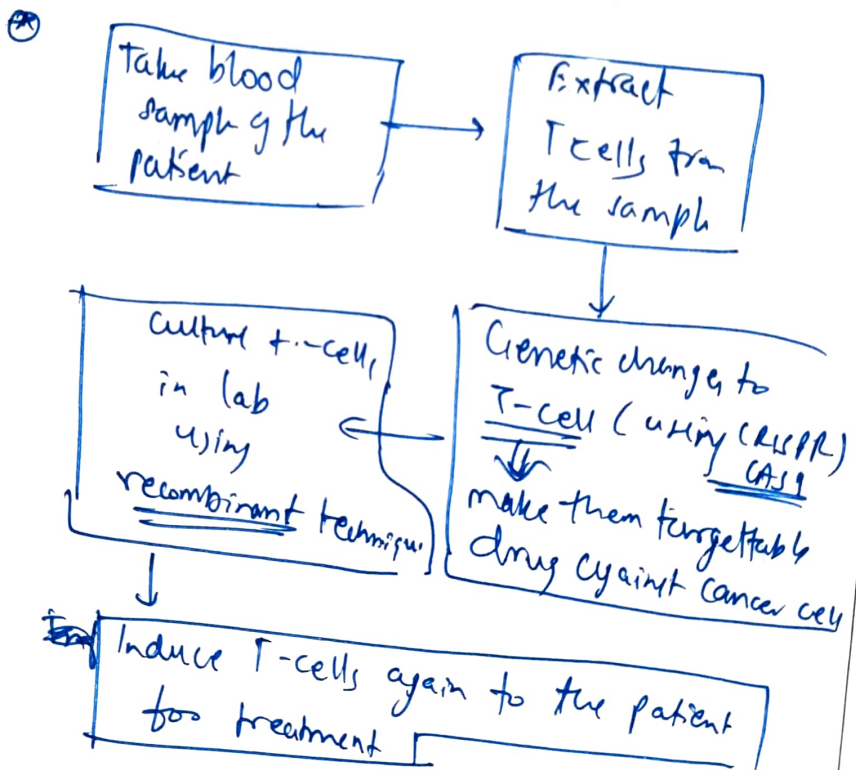
15. चिकित्सा विज्ञान में भारत की उन्नति, भारत की पहली कैंसर रोगी के इलाज के लिए CAR-T सेल थेरेपी का उपयोग करने में सफलता में परिलक्षित होती है। कैंसर और संबंधित बीमारियों के इलाज में CAR-T सेल थेरेपी के कामकाज और प्रभावशीलता पर चर्चा कीजिए। (15 अंक, 250 शब्द)

India's advancement in medical science is reflected in India's success in using CAR-T cell therapy to treat the first cancer patient. Discuss the working and effectiveness of CAR-T cell therapy in treating cancer and related diseases. (15 marks, 250 words)

Chimeric Antigen Receptor - T cell

(CAR T cell) therapy provides effective treatment of cancer using biotechnology.

Working of CAR T cell therapy



CAR T cell therapy is highly effective

- ① Assured treatment with higher recovery rate in cancer

- ③ Much lower cost compared to other treatments
- ④ Technology could be upgraded to treat other diseases
 - ⑥ viral / bacterial diseases
 - ⑦ making cell based vaccines
- ⑤ Reduce need of Chemotherapy / Radiotherapy
- ⑥ Lesser side effects and more healthy
- ⑦ Could improve life expectancy of cancer patient.
- ⑧ Could be a permanent solution to cancer & terminal illness
- ⑨ Reduce drug cost to the patients
- ⑩ Also spill over effect in medical science
 - promote research & development
- ⑪ Improve medical tourism in India
- ⑫ ~~Cost~~ Minimal invasion and less cutting
 - reduce pain of treatment
- ⑬ Not require repetitive treatments and surgery.

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(13) Promote healthier life and ~~reduce~~ increase DALY (Disability Adjusted Life Years)

(14) Increase overall life expectancy of nation

(15) Not require immunosuppressant medication

However there are limitations

① Still higher cost of treatment

= ₹ 40,000 to 2 lakh.

② Hence unaffordable by Poor

→ may increase inequality

③ More research is required for ascertain results

④ Long term side effects are not known

⑤ Mutation of T-cells possible → could harm patient later

⑥ Still in nascent stage :- only available in few cities.

⑦

Hence further research to ascertain its more benefits could be done by increasing funding & government-private partnership.

16. भारत के गगनयान मिशन और भारतीय अंतरिक्ष स्टेशन का मुख्य उद्देश्य क्या है? किन अन्य देशों ने अंतरिक्ष में अपने मानवयुक्त मिशनों को सफलतापूर्वक लॉन्च किया है? गगनयान मिशन और उससे संबंधित भारतीय अंतरिक्ष स्टेशन के सफल क्रियान्वयन के लिए कौन सी प्रमुख प्रौद्योगिकी की आवश्यकता है? साथ ही, इन मिशनों में जुड़ी चुनौतियों को भी स्पष्ट कीजिए। (15 अंक, 250 शब्द)

What is the main objective of India's Gaganyaan Mission and Bharatiya Antariksha Station? Which other countries have successfully launched their manned missions into space? What major technologies are required for the successful execution of the Gaganyaan Mission and related Bharatiya Antariksha Station? Also, elucidates the challenges associated with these missions. (15 marks, 250 words)

Gaganyaan & Indian space station are
upcoming missions of ISRO in next 10-15 years.

Objectives of Gaganyaan Mission

- ① Developing capability to take humans to space ~~space~~ safely and return them back
- ② To study impact on humans about radiations / microgravity etc in space
- ③ To take human rated satellite & launch vehicle to low earth orbit for 4-7 days & prove India's capability.

Objectives - Indian space station

- ① To create permanent station for hosting humans in space
- ② To have long term large satellite in low earth orbit for promoting space research

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③ To foster international collaboration for partnership in space sector.

Earlier USA, USSR (Russia) and China have successfully launched manned mission in space.

Major technologies for Chandrayaan 4 ISS.

- ① Human rated launch vehicle (95% success)
- ② Life support system in space (oxygen/food/water)
- ③ Docking capability for ISS.
To be developed in Chandrayaan 4
- ④ Reentry into atmosphere without burning due to air pressure
- ⑤ Soft landing on ground and safe retrieval of human
- ⑥ Escape crew module for safety in possible glitch
- ⑦ launch vehicle to carry higher payload for continuous supply of food etc in ISS
- ⑧ launching capability from ~~low~~ space station

Challenges Associated with the mission

- ① Launch vehicle (LVM Mk III) would be used $\Rightarrow$ but can't assume 95% accuracy as very limited flight undertaken
- ② Training of Astronaut taking time - assuming 100% safety
 $\rightarrow$ ③ Current training with NASA
- ③ Still behind in docking capability
 - research needed
- ④ Health impact of radiation & microgravity
 - bone density / blood circulation / hair loss
- ⑤ Risk to lives of Astronauts.
- ⑥ High cost of technology and mission
- ⑦ Increasing delay in execution - further cost overrun
- ⑧ Crew escape system reliability has to be 100%.
- ⑨ Reentry and landing development with large weight $\Rightarrow$ still a challenge

Hence Gaganyaan & ISS would be showcase India's assurance & reliability in space industry.

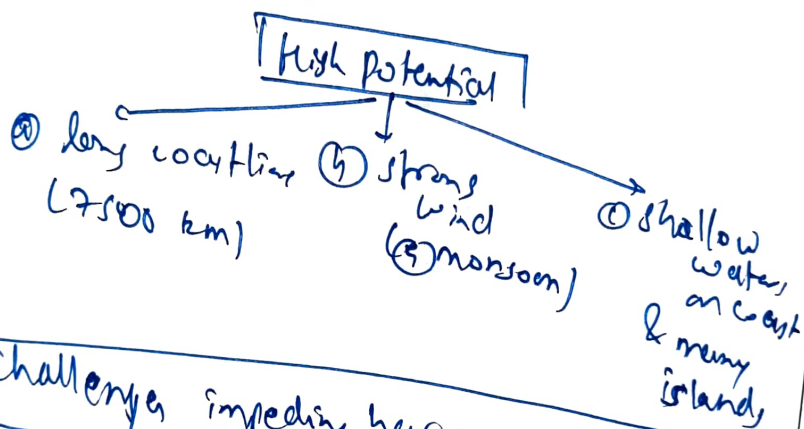
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17. "भारत की अपतटीय पवन ऊर्जा के क्षेत्र में उच्च क्षमता है, लेकिन कार्यान्वयन अभी भी कम है।" अपतटीय पवन ऊर्जा के दोहन में बाधा डालने वाली चुनौतियों पर चर्चा करें और संभावित समाधान सुझाएँ। (15 अंक, 250 शब्द)

"India's offshore wind energy has high potential but remains low on implementation". Discuss the challenges impeding the harnessing of offshore wind energy and suggest possible solutions. (15 marks, 250 words)

Offshore wind means wind energy
using wind mills, to be harnessed for electricity
production (mechanical energy to electrical) off
the coast of India.



Challenges impeding harnessing of offshore wind

- ① High cost of turbine :- Hence makes it unaffordable as compared to solar (Better alternatives)
- ② Environmental concern :- ④ disturb coastal ~~and~~ biodiversity / coral reefs
- ③ Lack continuous production :- Wind might not be continuous
- ④ Poor state participation :- ⑤ states like

Andhra / Tamil Nadu a lack of funds, to
deploy windmill,

⑤ Lack Private Participation

- ① technology import further increases cost
- ② High cost in electrical connectivity from
cost to main grids (new lines need to
be established)
- ③ Threats of Tsunami / cyclone, continuously
occur in Bay of Bengal (e) Odisha, Kerala
- ④ Concentrated deployment rather than
decentralized production (mostly Tamil
Nadu)
- ⑤ Higher losses in transition of electricity
- ⑥ lower efficiency of windmills
- ⑦ threshold current and speed need to
be breached before starting production of
electricity

Possible Solution

- ① Revamp Offshore Wind Energy Policy:-
 - ② provide PFI for production of windmill

- ① Encourage private wind energy park setup
- ② Hybrid Renewable energy park
 - ③ Wind + Solar + Hydrogen
- ④ Increase subsidy on wind based electricity production & consumption
- ⑤ Incentivize domestic startups & indigenisation
- ⑥ Improvement in technology
→ reduce threshold limit
- ⑦ Use of noise canceller to reduce biodiversity disturbance
- ⑧ Utilize Economy of scale :- large wind energy park like solar
- ⑨ Stronger foundation and underground cables - to prevent cyclone based damage

Above measures could help improve wind energy production in India & achieve Net Zero by 2070.

18. विकास के केंद्र होने के अलावा, शहरी क्षेत्र आपदा जोखिमों के संचय के केंद्र भी हैं। मेगा-शहरी समूहों (Mega urban cities) में आपदा प्रबंधन विशेष रूप से जटिल क्यों है? शहरी क्षेत्रों में आपदा प्रबंधन और जोखिम न्यूनीकरण की समस्याओं को दूर करने के लिए क्या उपाय किए जा सकते हैं? (15 अंक, 250 शब्द)

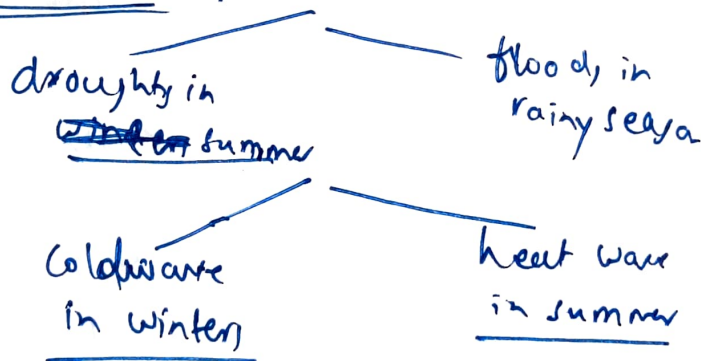
In addition to being the centres of growth, urban areas are also centres of accumulating disaster risks. Why is disaster management particularly complex in mega-urban cities? What measures can be undertaken to address the problems of disaster management and risk reduction in urban areas? (15 marks, 250 words)

Disasters like urban floods / heatwaves

drought etc are making urban areas accumulating disaster risks. Recent Urban Area disaster management Authority establishment is right initiative.

Disaster management complexity in mega-urban cities

① Dual burden of disaster:-



② High urban poverty:- difficulty in Adaptation

④ 17% people in urban slums

③ Unplanned urbanisation:-

→ Hence poor infrastructure quality and overwhelmed infrastructure

- ④ Habitat like AIIIMS - long. queue
- ④ High cost and public opposition in revamping infrastructure
- ④ ₹ 2000 crore resilient building → but can't demolish already existing building,
- ⑤ Poor accessibility of even basic needs :- ⑤ tap water → higher disaster vulnerability
- ⑥ Poor quality drainage network
- ⑥ flash floods due to clogging of drains
- ⑦ Increasing encroachment of wetlands / flood plains :- ⑦ Bangalore - only 80 lakes remaining
- ⑧ Higher cost of construction material
- ⑨ Overground Pipelines / cables - threat of electrocution / water logging during disaster
- ⑩ Poor fire safety and corruption in municipal corporation (e.g. Surat cooking fires)
↳ Heavy rain made disaster
- Measures needed

① Faster implementation of New urban disaster management Act:-

- ① Improve planning & NEMA's role
- ② fixing accountability
- ③ Create funding & dedicated authority

② Revamping urban infrastructure:-

→ use PPP for drainage, revamp

③ Rehabilitate encroached places

① use Rehabilitate - transfer model

④ Community participation during disaster

① train Asapda Mitras

⑤ Ensure basic infrastructure availability

① underground pipeline

⑥ Increase width of roads for faster vehicle movement during disaster

→ ① take step, to curb road encroachment

⑦ Better early warning system

① IMD's color coded warning of heatwave

Disaster management in urban areas
hence could be done to improve urban Right to life.

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19. भारत की आंतरिक सुरक्षा के लिए सोशल मीडिया और नेटवर्किंग साइट्स द्वारा उत्पन्न खतरों पर चर्चा कीजिए। सूचना और प्रौद्योगिकी नियम, 2021 के तहत तथ्य-जांच इकाइयाँ (FCU) सोशल मीडिया पर फर्जी खबरों के प्रसार के समग्र खतरों को नियंत्रित करने में किस प्रकार मदद करती हैं? सरकार द्वारा तथ्य-जांच इकाइयाँ (फैक्ट चेक यूनिट) स्थापित करने के बारे में प्रेस प्रसारकों और डिजिटल मीडिया प्रतिभागियों की क्या-क्या चिंताएँ हैं? (15 अंक, 250 शब्द)

Discuss the threats posed by social media and networking sites to the internal security of India. How do the fact-check units (FCUs) under Information and Technology Rules, 2021 help in controlling the overall menace of the spread of fake news on social media? What are the concerns of press broadcasters and digital media participants about the Government establishing fact-check units? (15 marks, 250 words)

Radical; radical, fake news, funding, mob lynching; h.r. viol. - child

Report, remove, subscriber

Rally, govt, industry; cutting profits/innovation

Social media has user generated content and hence prone to lesser regulation and more internal security risk.

Threat posed by social media

- ① Radicalization by overground workers
 - ④ Jamat ud dawra
- ② Recruitment of terrorist
- ③ Crowdfunding by insurgent
 - ⑤ using Bitcoin
- ⑥ Fake news and mis information campaign
 - ⑦ create chaos (⑧ mob lynching)
- ⑤ Sensationalization of matters i.e.
 - ⑨ may trigger communal riot
- ⑦ Proliferation of organised crime,
 - ⑩ Drug selling at telegram
 - ⑪ child trafficking

- ⑤ Threat of online surveillance & breach of
right to privacy (e) terrorist may plan
attacks based on data
- ⑥ Prone to cyber attacks & hacks,
→ (e) denial of service attacks
- ⑦ Menace of phishing / quishing and
monetary crimes on social media

How Fact checking unit control menace

- ① Surveillance wing algorithm :-
→ detect possible fake news
- ② Also review complaints of misinformation
→ grievance redressal
- ③ Report incidence to social media company
→ Ask for withdrawal of
fake news immediately
- ④ Reduce online crimes by awareness
among masses
- ⑤ Check implementation of IT rules
and safe harbor clause
→ fixing accountability

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- ① Reduce possible misuse of social media by terrorist organisations

Concerns expressed

- ① Conflict of interest :- A fact checking unit is a government agency itself (PIB)
- ② Lack of independence of members
- ③ No industry member participation and also no citizen's representative
- ④ Lack of transparency in detecting fake news
- ⑤ Fact Exception to government ~~(could be)~~ surveillance in IT rules
- ⑥ Could have bias towards ruling party
 - Only opposition's propaganda may get attached
- ⑦ Threat of safe harbor clause removal
 - Reduce investment by private players

Hence to increase efficiency & acceptance of fact checking unit, appropriate stakeholder consultation is necessary.

कश्मीर घाटी में हिंसा भड़काने में हिंसक गैर-राज्य अभिकर्ताओं (वीएनएसए-अपवसमदज Non-state actors) की भूमिका पर प्रकाश डालते हुए, चर्चा कीजिए कि सशस्त्र बलों द्वारा "ऑपरेशन सद्भावना" स्थानीय युवाओं की आकांक्षाओं को संबोधित करके वीएनएसए-ओजीडब्ल्यू (ओवर ग्राउंड वर्कर्स) गठजोड़ से कैसे निपट सकता है। (15 अंक, 250 शब्द)

By highlighting the role of Violent Non-State Actors (VNSAs) in inflicting violence in Kashmir valley, discuss how "OPERATION SADBHAVNA" by armed forces can tackle the VNSA-OGW (Over Ground Workers) nexus by addressing the aspirations of local youth. (15 marks, 250 words)

recruit/fund/terror/kill/radicalise

curb fund/depictal/counter/aware/community link

Recently Indian Army started
operation Sadbhavans in valley leveraging
heart & mind approach in terrorism tackling.

Role of violent Non-state actors

① Inflict terror in hearts of people :-

② Unn attack

③ Murder in day to day life of locals

④ terrorist forces for funding/recruitment
of young

⑤ Proliferating organised crime

⑥ drug menace in Punjab

⑦ Radicalisation of youth

→ Hence further instigate violence

⑧ Communal riot fuel :- ⑨ violence

against Kashmiri Pandits

NEXT IAS

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- ⑥ Hurdle in last mile service delivery:
 - ⑤ Hospital care / health / education in valley
- ⑦ Direct conflict with military personnel
 - ⑥ Poonch / Rajouri areas → recent rise in violence
- ⑧ Threatening the villages & violence in Border villages
- ⑨ Utilising modern technology for violence

Automated
Weapons

AI for planning
attack,
- ⑩ Human trafficking / organ smuggling / drug trafficking - transnational Blackholesyndrome
- ⑪ Collects intelligence on ground about security situation

How operation Sadbhawans will be helpful

- ① Deredicalisation of Youth
- ② Promote industrial & economic participation
→ employment & development

- ③ Direct interaction with army
→ increase trust based governance
- ④ Expenditure in Border roads & infrastructure → development
- ⑤ Community policing model:-
→ people will become eyes & ears of army (HUMINT)
- ⑥ Promote right use of technology
- service delivery through DBT
- ⑦ Counter radicalisation campaigns on social media
- ⑧ Awareness generation by experts on ground
- ⑨ Regular patrolling for safety of people
→ specially women & children
- ⑩ Curb funding to radical organisation
- choking

Plan operation Sadbhawana could help integrate J&K more with mainstream India.