Pre Qualified
UPSC Roll No. 0307541

NEXT IAS

MAINS TEST SERIES 2.0 - 2025 (FLT)

— (To be filled by candidate) —

TEST CODE : FLT2503   **Test No. : 03**

Name of Candidate: ......KIRAN . KAMATE...... Mobile No.

Roll No. : ...MT25 FLTRA015... Start Time ...2:00... End Time...5:05 PM

Date of Examination: ...24-07-2025... Medium : English ☑   Hindi ☐

Q. No.	Maximum Marks	Marks Obtained	Q. No.	Maximum Marks	Marks Obtained
1.	10		11.	15	
2.	10		12.	15	
3.	10		13.	15	
4.	10		14.	15	
5.	10		15.	15	
6.	10		16.	15	
7.	10		17.	15	
8.	10		18.	15	
9.	10		19.	15	
10.	10		20.	15	
TOTAL MARKS - 100			**TOTAL MARKS - 150**		

GRAND TOTAL - ..../ 250   EVAL CODE: .... EVAL DATE: ....

GENERAL INSTRUCTIONS

1. 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.
2. Candidates must mention all relevant details like Name, Email, Roll No, Mobile, etc. in the space allocated.
3. Candidate is expected to attempt all 20 questions within the given timeline.
4. Answers must be written in the medium authorized at the time of admission.
5. 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.
6. Please write neatly. Avoid illegible writing.
7. Do not write/mark irrelevant matters in the QCAB.

सामान्य निर्देश

1. 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।
2. अभ्यर्थियों को सभी प्रासंगिक विवरण जैसे नाम, ईमेल, रोल नंबर, मोबाइल नंबर आदि का आवंटित स्थान पर उल्लेख करना होगा ।
3. अभ्यर्थियों से अपेक्षा की जाती है कि वह आवंटित समय-सीमा के भीतर ही सभी 20 प्रश्नों के उत्तर-लेखन का प्रयास करें।
4. प्रत्येक उत्तर, प्रवेश के समय चुनी गयी भाषा के माध्यम में ही लिखे जाने चाहिए।
5. 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।
6. कृपया साफ-सुथरा लिखें। अपठनीय लेखन से बचें।
7. QCAB में अप्रासंगिक तथ्यों को न लिखें / न ही चिह्नित करें।

REMARKS: ....
....

FOR OFFICE USE ONLY

Student Concerns / Query	Evaluator's Feedback / Response
1	1 ....
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2	2 ....
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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.

IMPORTANT QR CODES

Topper's Copy

Common mistake and Correct Filled QCAB

Copy Scanner App

Next IAS Test Centre Location

MACRO COMMENTS

The Purpose of MTS 2.0 Score Improvement Program (SIP) is to provide constructive suggestions on 'How to improve Answer Writing and thereby score better marks.

Q1.

Introduction	Body	Conclusion

Q2.

Introduction	Body	Conclusion

Q3.

Introduction	Body	Conclusion

Q4.

Introduction	Body	Conclusion

Q5.

Introduction	Body	Conclusion

Q6.

Introduction	Body	Conclusion

Q7.

Introduction	Body	Conclusion

Q8.

Introduction	Body	Conclusion
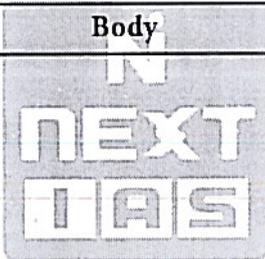
Q9.

Introduction	Body	Conclusion

Q10.

Introduction	Body	Conclusion

Q11.

Introduction	Body	Conclusion

Q12.

Introduction	Body	Conclusion

Q13.

Introduction	Body	Conclusion
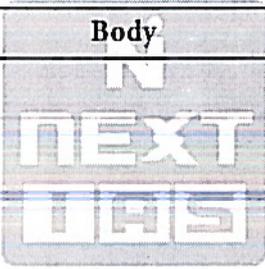
Q14.

Introduction	Body	Conclusion

Q15.

Introduction	Body	Conclusion

Q16.

Introduction	Body	Conclusion

Q17.

Introduction	Body	Conclusion

Q18.

Introduction	Body	Conclusion
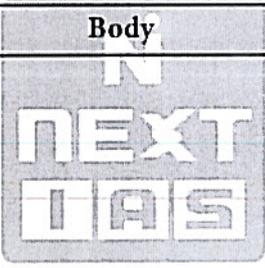
Q19.

Introduction	Body	Conclusion

Q20.

Introduction	Body	Conclusion

1.
सरकारी बजट में जेंडर बजटिंग की ओर हाल ही में किए गये प्रयास महिला सशक्तिकरण के लिए इसके महत्व को दर्शाता है। भारत में जेंडर बजटिंग की दिशा में हालिया पहल और उनके महत्व क्या हैं? (उत्तर 150 शब्दों में दीजिए) 10 अंक
The recent push towards gender budgeting in the Government Budget reflects its importance for women empowerment. What are the recent initiatives towards gender budgeting in India and their importance?   (Answer in 150 words) 10 Marks

Gender Budgeting is making substantial grants to women across different sectors of economy & society - to create and bridge gender divide.

Importance of women empowerment

① " largest untapped potential " — Hillary Clinton

② uniform and inclusive development

③ SDG Target : 5 — reducing gender divide.

④ global commitment
eg) UDHR, CEDAW, ICCPR
Beijing Declaration
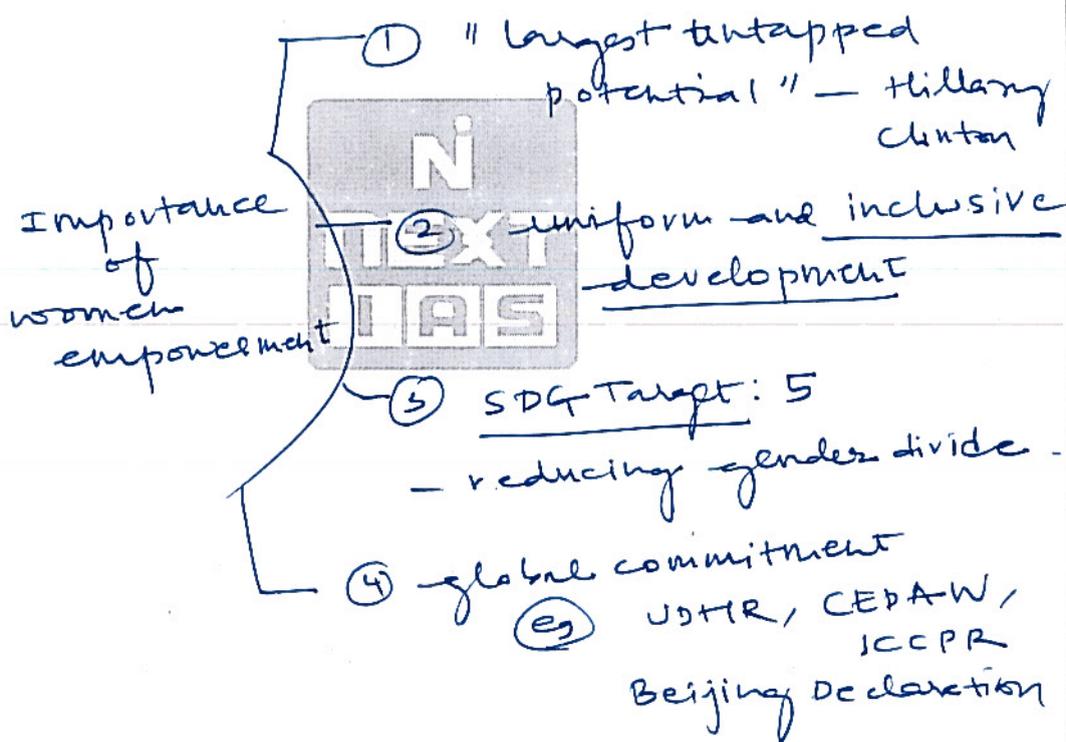
Recent initiatives

1. Increasing the overall spending
eg) ES - highlights 27% of total budget towards woman

Importance : highlights & recognises the need for inclusive governance,

2. Mission Shakti

Importance: Covers 2 dimensions i-e
      i) Protection ii) empowerment
        (eg) Beti Bachao Beti Padhao.

3. Investment in STEM

→ Importance: Increase representation in STEM, as their representation was lower compared to global standards.

4.
4. Small saving scheme like Girl child investment scheme

Imp: nudging towards saving + empowerment of girl child.

5. Stand up India

Imp: inclusion in startup culture.
    → leading to GDP ↑
    (eg): Mickinsey report: 27% ↑ GDP.

6. issues
    ① BBBP: underutilisation of fund.
    ② fragmentation of grant
    ③ zero-base budget → leading to cuts.

Gender budgeting is the recognising of systemic prejudices and structural inequalities and giving a push to gender inclusion.

2. बंदरगाह आधारित विकास को भारत में आर्थिक विकास और क्षेत्रीय एकीकरण के प्रमुख चालक के रूप में देखा जाता है। चर्चा कीजिए कि सागरमाला पहल किस प्रकार बंदरगाह आधारित विकास और तटीय अर्थव्यवस्था को बढ़ावा दे सकती है। (उत्तर 150 शब्दों में दीजिए) 10 अंक

Port-led development is seen as a key driver of economic growth and regional integration in India. Discuss how the Sagarmala initiative can promote port-led growth and the coastal economy. (Answer in 150 words) 10 Marks

SAGARMALA PROJECT its one of the flagship scheme for creating a multimodal transportation, improving trade and tourism and keeping port at the centre of development.

① connect to the hinterland
② improve trade efficiency
③ saving of forex
eg 100 bn USD on external shipping companies.
④ employment generation
⑤ logistics cost

Key driver of eco. growth & regional integration
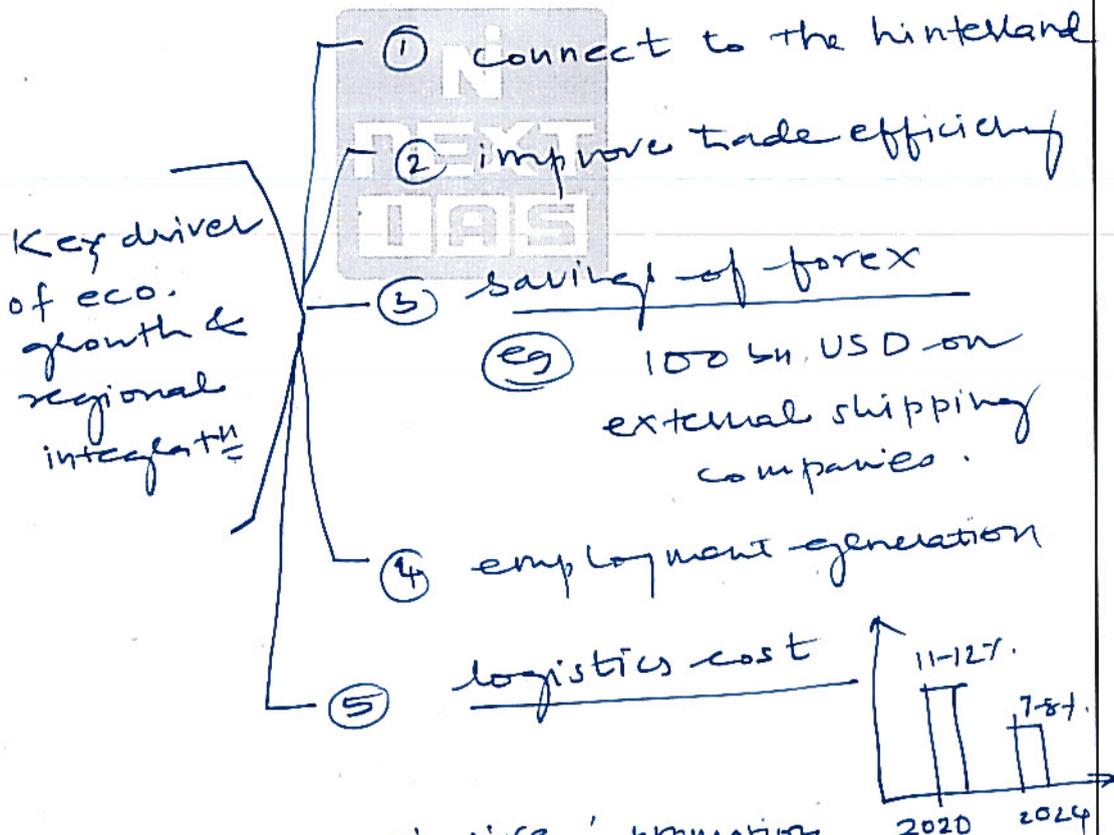
Sagarmala initiative: promotion of coastal eco. & port-led growth
1. changing from other mode of transportation to port -
eg Railways, Roadways, Airway

2. creating employment in coastal region
3. creating connectivity to mainland.
   → leading to economic participation

4. Tourism enhancement
   ⓔ Kerala coastal tourism project.

5. reducing the logistics cost
   → increasing the cost-competitiveness

6. fisheries industries
   — getting wider reach via trade -

7. saving of forex — 100 USD every year

8. multimodal transportation

                                    Railways
            (port-led) —— Roadways
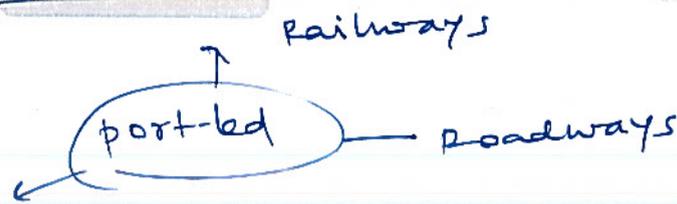
Airways.
                    ① private investment is
                       not encouraging
   Issues
                    ② dominance of other modes

                    ③ establishing of new ports is
                       fiscally straining — VGF has
                                           Limitation

                    ④ competiting with
                       global players is challenging.

   Sagarmala, is step in right direction.
Investments and technology — will play a
for reaching goal in making it successful.

3. गैर-कृषि अर्थव्यवस्था में पशुपालन के महत्व पर चर्चा कीजिए। पशुपालन को बढ़ावा देने के लिए हाल ही में प्रस्तावित पशुध न जनगणना की क्या आवश्यकता है? (उत्तर 150 शब्दों में दीजिए) 10 अंक

Discuss the importance of livestock farming in a non-farm economy. What is the need for the recently proposed livestock census in promoting animal husbandry?

(Answer in 150 words) 10 Marks

According to Economic survey, livestock farming is growing at (11.9) YoY, while agriculture 10 year avg is (4.5-). — highlighting its importance

Importance of livestock farming

1. Risk distribution :
   → against the vagaries of monsoon
   → 55% rainfed irrigation

2. Ashok Dalwai panel recommendatn
   → to increase farmers' income
   livestock plays central role

3. increasing per hectare price/income
   (eg) Eco. survey highlighted Andhra pradesh Shrimp farming
   income   1lakh/ha   15L/ha
            Paddy   Shrimp
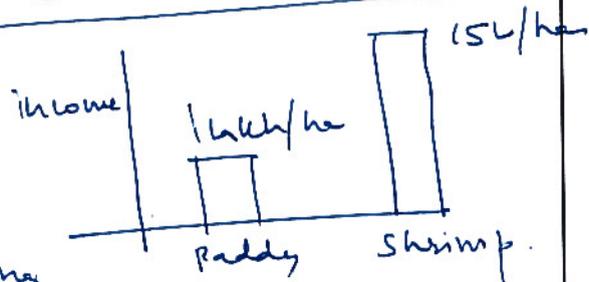
4. food security
   — source of protein/eggs & meat

5. conservation agriculture
   — reduced input

nutritional security

Calorie / food security

ANIMAL FARMING

feed

CROP FARMING

manure
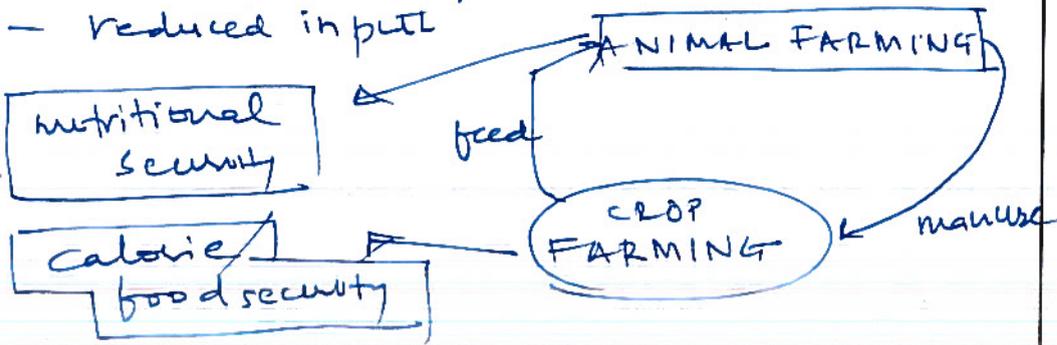
6. increasing trade

Q) Milk, meat, egg — constituted major part of India's agri-export
   → 1/3rd of → (48 bn USD)

Need for livestock census

① evidence based policymaking
   → realigning budgetary support

② help assess the areas of dominance and need for reform

③ data driven agriculture
   → helps in farmer/agri insurance coverage ↑
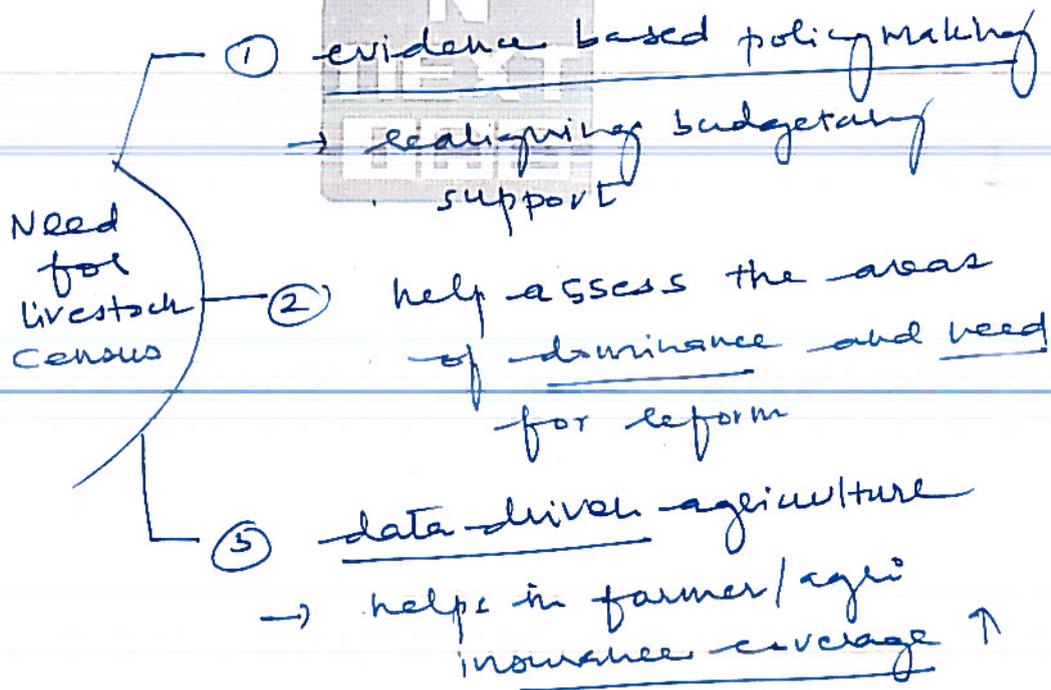
- Livestock farming is the key for doubling farmers income and ensuring nutritional security.

4. न्यूनतम समर्थन मूल्य किसानों की आय को बढ़ाने में कैसे मदद कर सकते हैं? न्यूनतम समर्थन मूल्य का लाभ प्राप्त करने में किसानों को किन चुनौतियों का सामना करना पड़ता है? (उत्तर 150 शब्दों में दीजिए) 10 अंक

How can minimum support prices help in promoting farmers' income? What are the challenges faced by farmers in accessing the benefits of minimum support prices?

(Answer in 150 words) 10 Marks

Recently, there were nation wide protests of legalising MSP — highlighting its importance in agriculture for farmer community.

How MSP help in promoting farmers' income

1. Guarantee against market distortion.
   → guaranteed procurement by govt.

2. helps in gaining profits beyond the investment made

   ⓔ MSP → A2 + FL
   — include input costs, imputed cost of labour etc.

3. it is "minimum price" deserving of "support"
   → support need against the exigences of nature.

4. MSP is based on numerous factors
   — demand of crop
   — price levels in int. market
   — supply of produce
   — historical data.

→ Therefore, guarantees <u>minimum support</u>

Challenges faced

① <u>cereal-centric price & ↑procurement regime</u>
   → paddy-wheat   (Eco. survey)

② only ⑥% of farmers avails the benefit

③ <u>regional disparity</u>
   — farmes from North usually benefit from MSP.

④ only 22+1 crops
   → ②⑤% of all the agri. produce in the country
   → leaving out 72% produce

⑤ <u>lack of awareness</u>
   — information assymetry.

⑥ horticulture not included
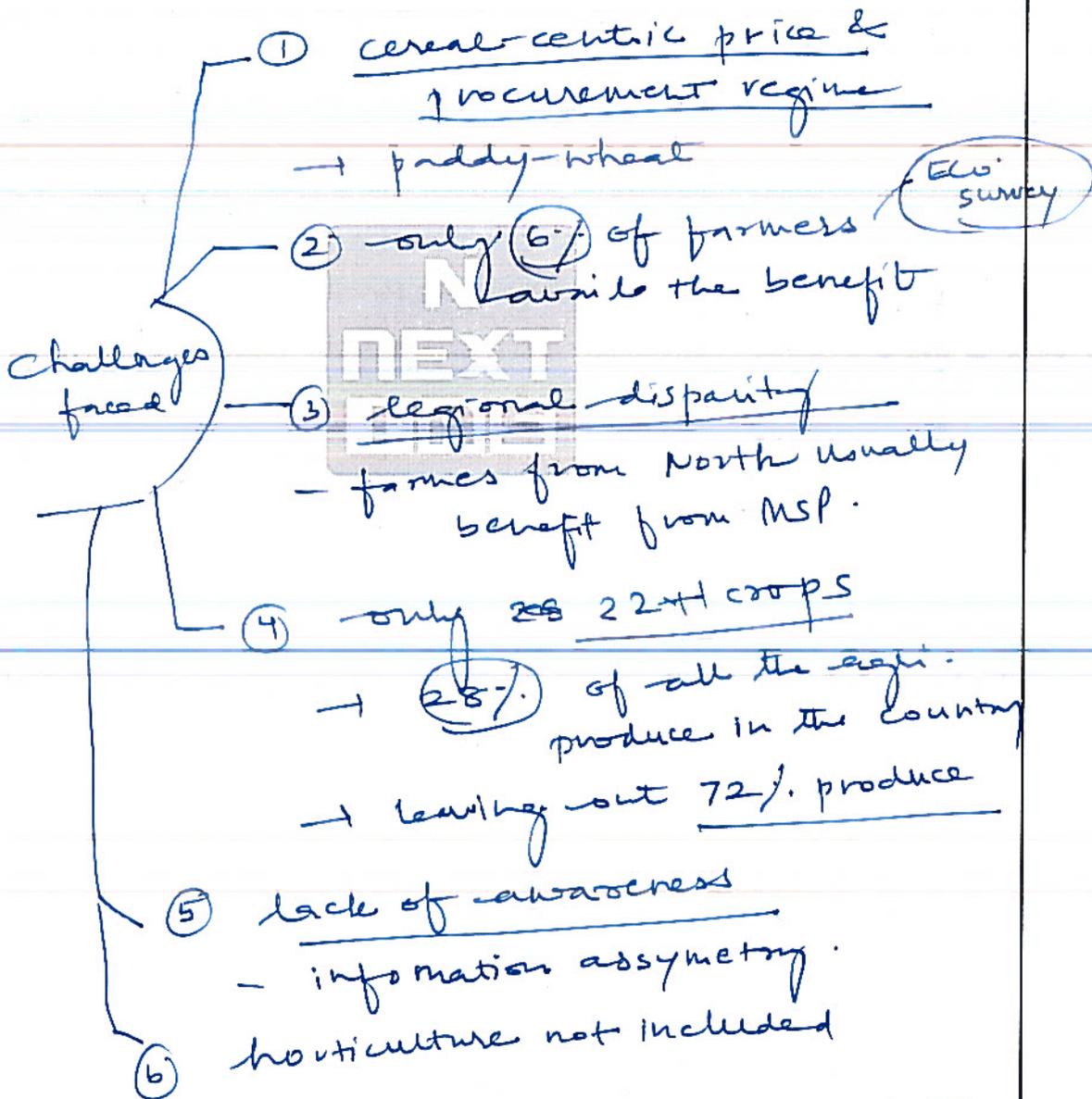
   MSP is a good initiative, but acc. to Dr. Ashok Gulati it has lived its time and needs relook in the current era.

5. कृत्रिम तंत्रिका नेटवर्क क्या हैं? मशीन लर्निंग और कृत्रिम बुद्धिमत्ता में उनके महत्व पर चर्चा कीजिए।

(उत्तर 150 शब्दों में दीजिए) 10 अंक

What are artificial neural networks? Discuss their importance in machine learning and artificial intelligence.   (Answer in 150 words) 10 Marks

Artificial neural networks are layers of connections and nodes, mirroring the human neurons - transmitting information. Forms the basis of AI and machine learning.

- they mimic the human neural.

- create response to stimuli (info).

art. neural network
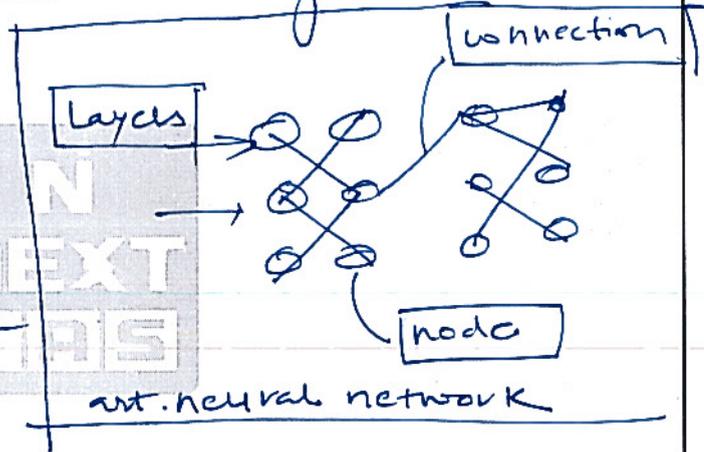
Importance in ML & AI

1. helps in gathering and processing tonnes of info.
   → makes connections to past info.

2. helps in training the systems
   → by identifying pattern recognition

3. It is the
foundation of
AI & ML

— pattern recognition
— ~~data~~ recognition
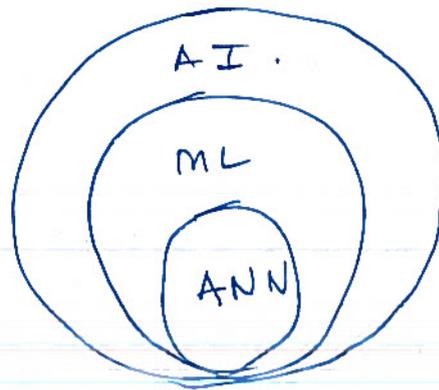
4. It helps in creating
new learning mechanism → leading
to independent processing of info.

5. helps in generating new info
   eg Gen AI → Using existing +
                    extrapolating

6. Natural language processing
   → Chat Bots by Google.

Issues {
① intensive in energy
   consumption
   → 1 search - 500 ml work.

② techno-nationalism and
   techno-war
   eg Deepseek vs. Chat GPT.
              (Open AI)

③ biases in training.
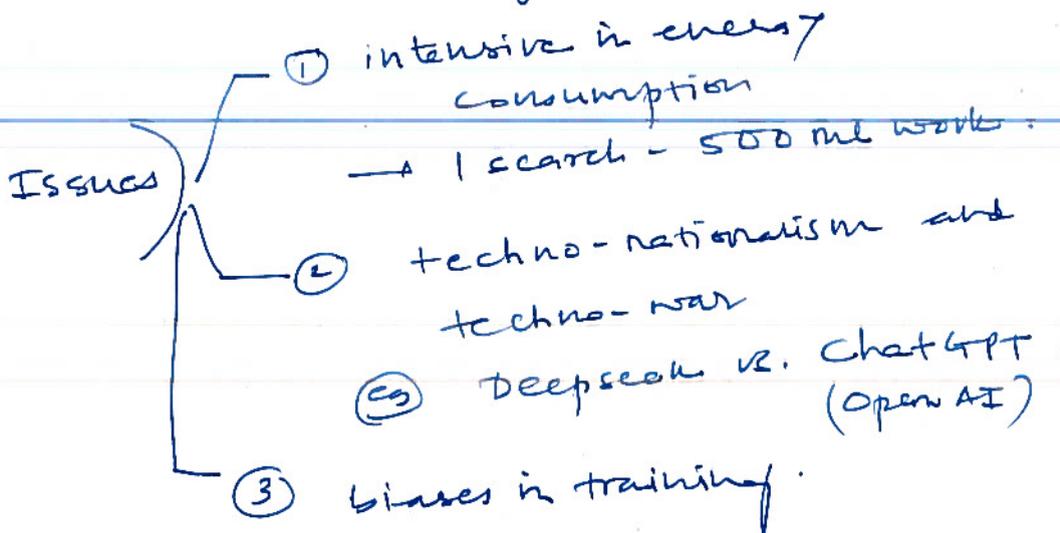
ANN, just like human neurons.
response to the stimuli and forms the
basis of AI/ML. — ~~digital~~ revolution

6. रक्षा क्षेत्र और आधुनिक युद्ध में मानव रहित हवाई वाहनों (यूएवी) के महत्व पर चर्चा कीजिए।

(उत्तर 150 शब्दों में दीजिए) 10 अंक

Discuss the importance of Unmanned Aerial Vehicles (UAVs) in the <u>defense sector</u> and <u>modern warfare</u>. (Answer in 150 words) 10 Marks

<u>Unmanned Aerial Vehicles</u>
are emerging as new frontier in the hybrid/assymmetric warfare — 4th generation of warfare.

<u>Importance</u>

1. breaching the air defence system via drone swarms (eg) Op.Sindoor

2. Accurate targetting of enemy and attack
(eg) Kamikaze Drones.

3. assymetric attack
(eg) In Armenia-Azerbaijan war played a decisive role.

4. helps in giving realtime data input → which gives edge in troop management and defence stratgy. in advance

5. Low cost — high impact
   - Lt General [Anil Chauhan] — highlighted its
     low-cost - high - output
   - deterring the enemy

6. proxy warfare
   → going for below-the-threshold
     warfare .
   → yet creating strategi shifts
     ⊖ Pakistan — proxy warfare .

7. It helps in kill-strike
   → Loitering munition .

8. reduces the casualties
   → autonomous warfare .

9. defence budget
   → very cheap compaed to the
     supersonic missile (or) antitank
     machines

   Challenges ⎱
   ① Non-state actors .
   ② proxy warfare
      — straining resources .
   ③ breaching the air defence

   Thus, UAV — emerging as
   gamechanger the way wars are brought .

7. समुद्री और तटीय पारिस्थितिकी तंत्र पर तेल रिसाव के पर्यावरणीय प्रभावों की जांच कीजिए। तेल रिसाव की सफाई के लिए इस्तेमाल की जाने वाली विभिन्न विधियाँ क्या हैं? (उत्तर 150 शब्दों में दीजिए) 10 अंक

Examine the environmental impacts of oil spills on marine and coastal ecosystems. What are the various methods used for cleaning-up of oil spills?

(Answer in 150 words) 10 Marks

oil spills are the spillage of oil carried via shipping containers in the SLOCs. The recent oil spilling off the Kerala coast of a foreign vessel is a case in point.

Impact on Marine & coastal ecosystem

1. Biodiversity damage
   (eg) Reef collapse ; coral bleaching

2. increase the temperature of sea-surface
   → leading to changes in stratification

3. Marine fisheries
   — takes a hit
   — export loss ↓ : revenue loss ↓
   : GDP ↓↓

4. affects the reproductive cycles of the marine animals

5. Deoxygenation of oceans ecosystem

→ reduced oxygen level

→ spree killing of biodiversity.

6. permanent damages to ecosystem

→ irreversible.

7. affects the fishing communities livelihoods

→ income dependence.

Methods used for cleanup

① OilZapper method
   — sapping the oilspill

② bio-venting
   → venting oxygen to the spill + to absorb carbon

③ bio-remediation
   — use of biological entity for sucking the oil spill.

④ use of chemicals to change its composition.
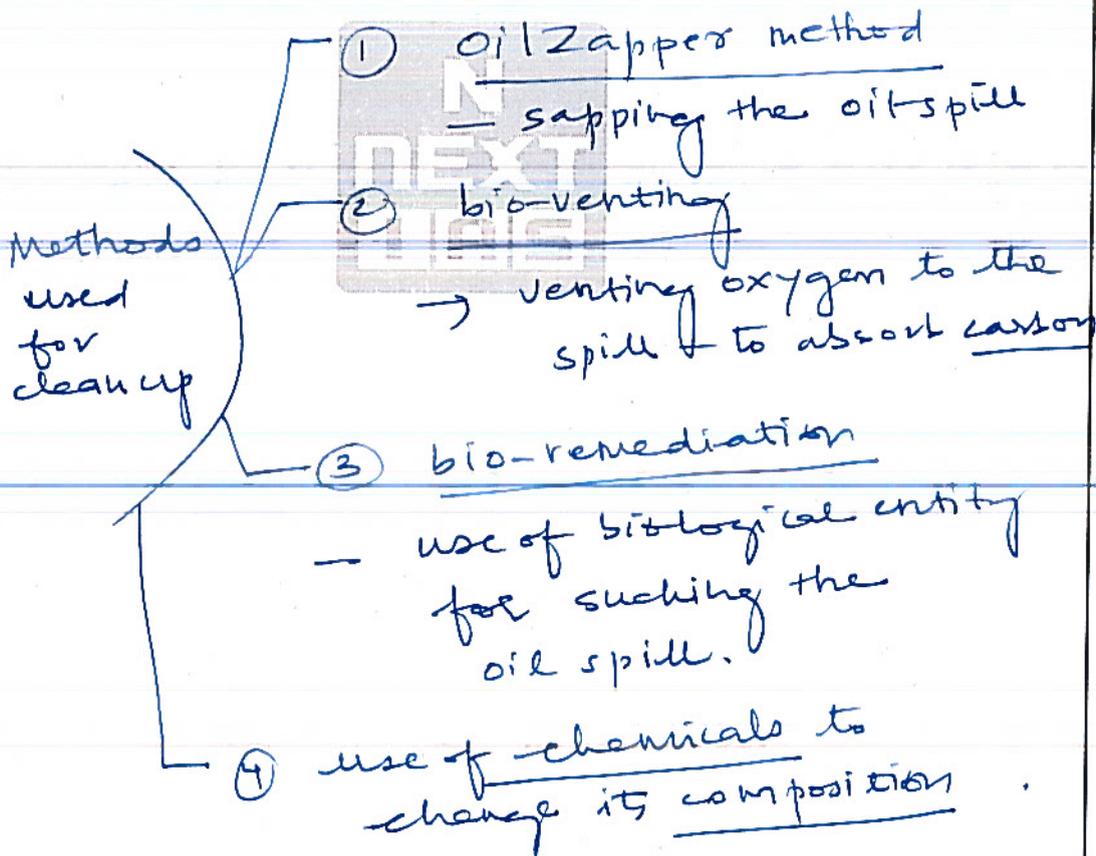
Oil spills are man-made, thus can be controlled via safety protocol / measurements.

8. भूकंप संबंधी आपदाओं के प्रति उत्तरी भारत की संवेदनशीलता पर चर्चा कीजिए। उनके प्रभावों को कम करने में भारत की तैयारियों पर प्रकाश डालें।   (उत्तर 150 शब्दों में दीजिए) 10 अंक

Discuss the vulnerability of <u>northern India</u> to earthquake-related disasters. <u>Highlight</u> India's <u>preparedness</u> in mitigating their impacts.   (Answer in 150 words) 10 Marks

According to <u>Ministry of</u> <u>Earth Sciences</u> (MoES), (59.) of country is vulnerable to Earthquakes (EQ)

| vulnerability of North India to EQ |

1. Indian plate moving northwards
   — leading increased stressed in plate tectonics.

Himalayas
Delhi
Gujarat
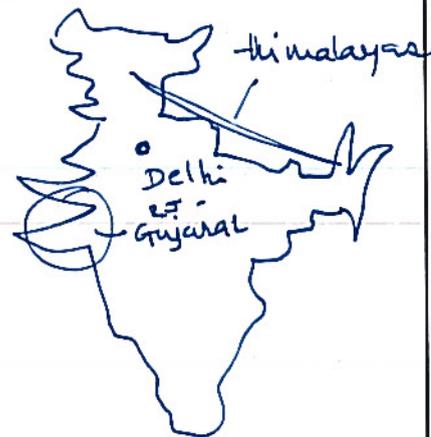
2. Delhi and NCR
   — zone IV of the EQ Mapping of BIS
   — moderate to high intensity (4.5-6.5 intensity)

3. Young mountains of Himalayas
   — unconsolidated rock structure
   — landslide induced EQ.

4. Delhi - Haridwar Ridge
   — creates a suture zone for stress eruption.

India's Preparedness to Mitigate

1. **Building standards and codes**

   (eg) IS-456, 1392 and extensive codes on ductile detailing of buildings.

2. **Retrofitting of old building**

   (eg) Base-isolation method. → supreme court building.

3. **Mapping of India**
   - into four zones — covering 59%.
   - Risk based mitigation plans.

4. **Awareness**

   (eg) NCERT textbooks, highlighting do's and don'ts.

5. **NDMA Guidelines**
   → establishing emergency communication
   → quick rehabilitation etc.

challenges {
   - lack of enforcement of codes.
   - public mock-drills — not carried out
   - negligence by public.

Thus, India has enough mitigation strategies in place, its strict implemntⁿ and enforcement is the key

9. चर्चा करें कि क्रिप्टोकरेंसी और अन्य उभरती प्रौद्योगिकियां मनी लॉन्ड्रिंग और आतंकवाद के वित्तपोषण के खतरे में कैसे योगदान करती हैं। इस समस्या से निपटने के लिए भारत सरकार द्वारा क्या कदम उठाए गए हैं?

(उत्तर 150 शब्दों में दीजिए) 10 अंक

Discuss how cryptocurrency and other emerging technologies contribute to the menace of money laundering and terror financing. What steps have been undertaken by the Government of India to tackle this issue?   (Answer in 150 words) 10 Marks

Cryptocurrency is a digital currency working the principles of block-chain technology. It is used in dark-net to launder money and financing terror (ML/TF)
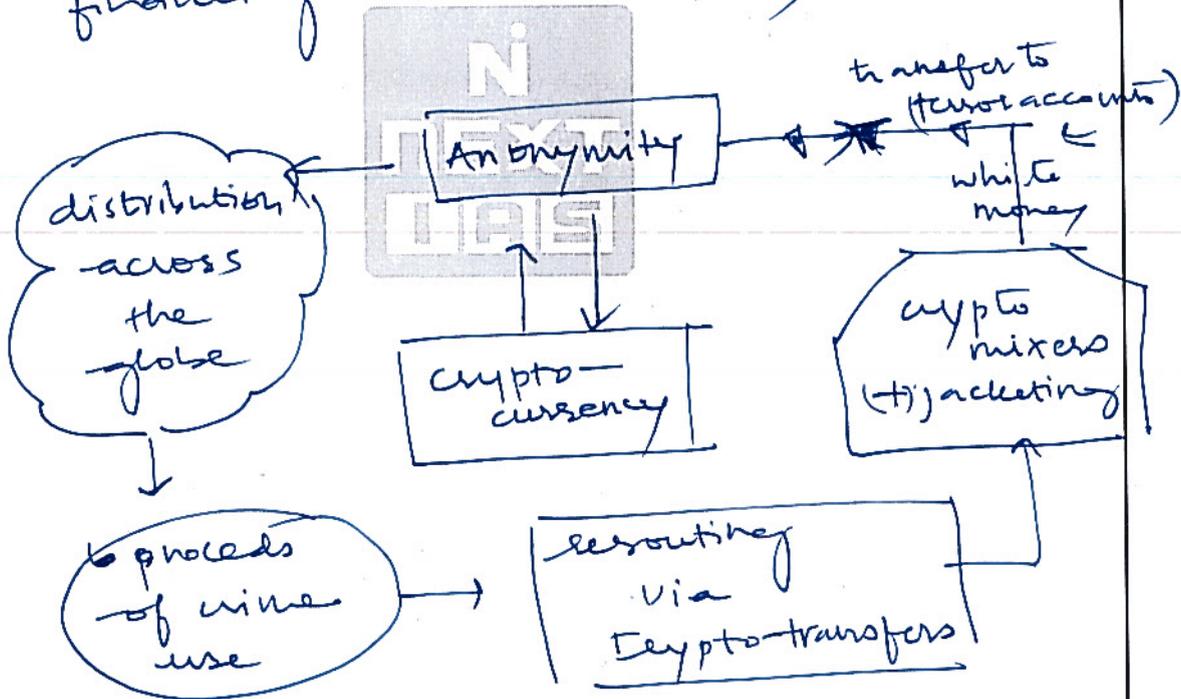
1. It employs the anonymity of block-chain tech.

2. use of crypto mixers to over-cover and layer the laundered money

Steps taken by Govt

1. Legislative steps

  1.1   PMLA - prevention of money laundering

  1.2. FCRA - foriegn contribution (Amendment)

  1.3. Prohibition of corruption, (PCA).
                              Act

2. Global measures

  — FATF's Mutual Technical scrutiny
       → awarded highest rating
              security (2024)

  → identifying politically exposed person
                              (PEPs)

3. cryptocurrency regulation,

  — taxation ambit → (30-/.)

  — Subhash Agrawal committee

4. Intelligence

  → CCTNS , NATGRID — data
                         gid of
                         crime.
  → data sharing.

5 cybersecurity measures

  → National cyber policy, 2018 .

  → I4C ; NIIPC
         ↳ cybercrime coord. centre .

         Cryptocurrency — is adding a new
dimension to the already difficult to tackle
         menace of ML/TF.

10. हाइब्रिड युद्ध क्या है? यह पारंपरिक युद्ध से किस प्रकार भिन्न है? भारत हाइब्रिड युद्ध की चुनौतियों का सामना किस प्रकार कर सकता है? (उत्तर 150 शब्दों में दीजिए) 10 अंक

What is hybrid warfare? How is it different from conventional warfare? How can India navigate the challenge of hybrid warfare? (Answer in 150 words) 10 Marks

Hybrid warfare is the <u>fourth</u> ~~generation of warfare~~ — which includes both <u>Kinetic</u> ~~and~~ <u>non-Kinetic</u> ways of ~~attacking~~ the adversaries.

~~hybrid warfare~~ → Conventional + non-conventional

~~land-based attacks~~
- informational
- psychological
- cyber warfare

Conventional

① use of <u>crude military power</u> — high intensity
   eg) missiles / aircraft

② <u>low intensity</u> and non-escalatory
   ⇒ below threshold of all-out-direct-attack.

Different from convention warfare

③ use of cyber-system to attack critical infra
   eg) attack on thermal stations — powerplants (NTPC) — 2022

④ → use of <u>narrative building</u>
   eg) Pakistan during OP. sindoor — misinfo.

How India can navigate the challenge

1. Use of strategic messaging.
   → being quick in giving out accurate
   info via official platform.
   (eg) Media briefing during op. Sindoor.

2. indegenous development of defence
   system. → act as deterrent
   (eg) Brahmos, Akash NG

3. use of AI
   — for identifying bots on social media
   — cursing disinformation

4. global cooperation
   → for defence and cyber system
   enhancement. (eg) USA - (iCET)

5. Making changes in the National
   security Doctrine —

6. invest in low-cost-high-impact
   tech (eg) Loitering munitions
            (9) Harrop by Israel.

   Hybrid warfare, as highlightu
by our NSA - Ajit Singh Doval is the new
frontier of attack. And India should
navigate it carefully & strategically

11. भारत द्वारा मजबूत डिजिटल अर्थव्यवस्था के लिए प्रयास करने के बावजूद, भारत को डिजिटल समावेशन के संबंध में चुनौतियों का सामना करना पड़ रहा है। चर्चा कीजिए। डिजिटल संसाधनों तक समान पहुँच सुनिश्चित करने के उपाय सुझाएँ।

(उत्तर 250 शब्दों में दीजिए) 15 अंक

Despite India's push for a robust digital economy, India faces challenges with regard to digital inclusion. Discuss. Suggest measures to ensure equitable access to digital resources.

(Answer in 250 words) 15 Marks

2025 marks the decadal anniversary of DIGITAL INDIA MISSION — (2015). While India has made - sufficient strides, there is still ground to be covered.

India's push for digital eco
- ① Digital India
- ② UPI / AEPS / DBT
- ③ JAM Trinity
- ④ National Broadband Mission
- ⑤ Bharat Net
- ⑥ 5G ROLLOUT
- ⑦ MOOCs & e Vidyalaya
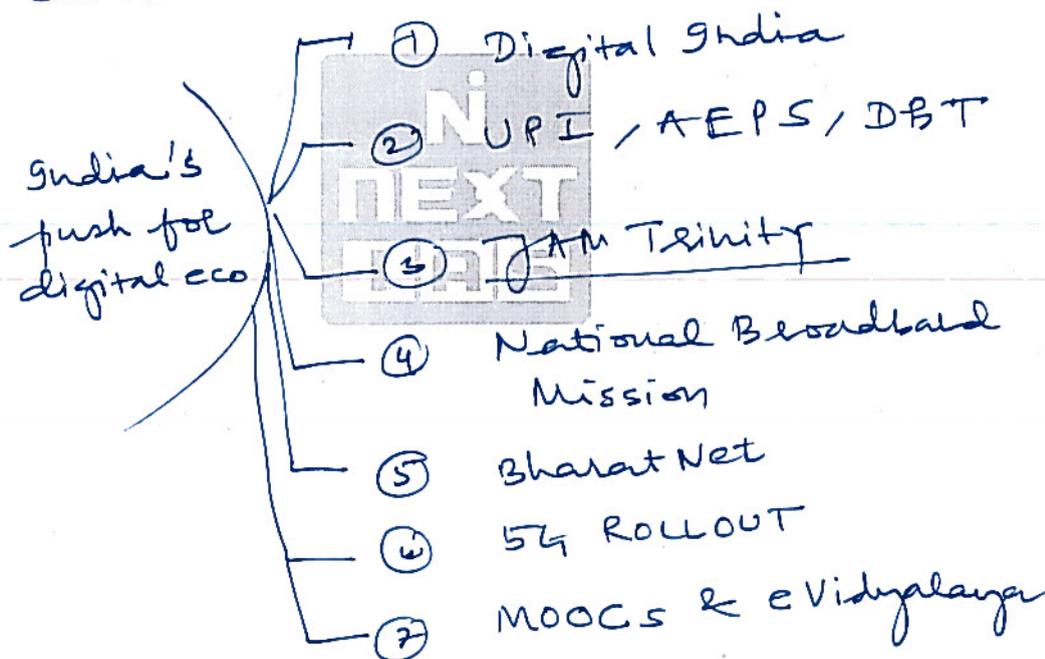
Challenges with regard to digital inclusion

1. Digital divide.
among
- men - woman
- rural - urban
- young - elderly
- inter-sectoral

2. The <u>teledensity</u> has increased from
   - however, much of it
   has been urban
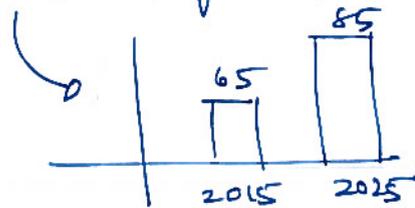
   (eg) teledensity in urban
   > 100%.
   Rural → 60-65%.   → [TRAI]

   [bar chart: 65 at 2015, 85 at 2025]

3. <u>adaptability of digital sources in</u>
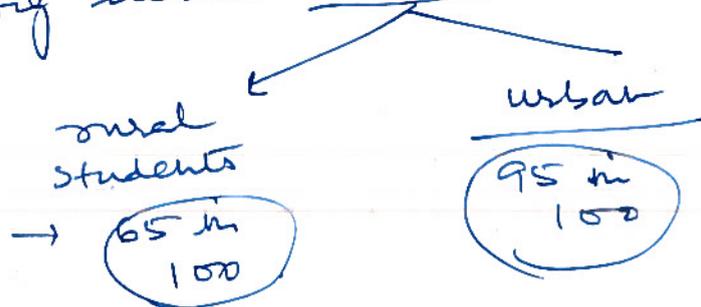   Agri:
   → though increasing, according to
   M/o Agri → only (25%) use digital
        farmers services.

4. <u>Gender-Divide</u>
   <u>Rural woman</u>: only 37% of them
   have access to internet (IAMAI)

5. <u>Post-covid adoption of e-education</u>
   - According to [ASER Report]
   <u>disparity across rural-urban divide</u>

        rural   urban
   students
   → (65 in 100)   (95 in 100)

6. <u>Infrastructure development</u>
   (eg) Bharatnet project, (2.1) lakh
   villages cover
   → but optical fibre length is limited
   → leading to lack of quality services

Measures Needed

1. Digital Literacy
   - (eg) Aruna Sundarajan — has made her dist. in Kerala → 100% digital literate.

2. Collaboration with NGO/civil society
   - (eg) GOALS — by Facebook
     → "going-on-line-as-leaders"
     → focus on women's literacy and access to digi-services

3. Investment in Rural Infra
   - (eg) SpaceX — satellite internet connection

4. Increasing tele-density of rural india
   → increasing the digi-net wider

5. school-level-inclusion
   — providing access to internet/digi edu?

In 'Breaking the Mould' by Raghuram Rajan → he has rated India as the front runner in digital access. Digital india is the grease to the wheels of Viksit Bharat, 2047

12. जैसे-जैसे कृत्रिम बुद्धिमत्ता अर्थव्यवस्था के विभिन्न क्षेत्रों में प्रवेश कर रही है, वैसे-वैसे नौकरियों का खत्म होना एक वास्तविकता बनती जा रही है। रोजगार पर एआई के प्रभावों का विश्लेषण करते हुए, इस चुनौती से निपटने और रोजगार वृद्धि को बढ़ावा देने के उपाय सुझाएं। (उत्तर 250 शब्दों में दीजिए) 15 अंक

As artificial intelligence penetrates into various sectors of the economy, job losses are becoming a reality. Analysing the impacts of AI on employment, suggest measures to navigate this challenge and promote job growth. ⋀ (Answer in 250 words) 15 Marks

According ILO 80% of the new jobs created in industrial Revolution 4.0 will be dominated by A I. And WEF highlights 40-45% potential job losses — with current skillset.

Various sectors

Manufacturing

Banking   Education.

Agriculture
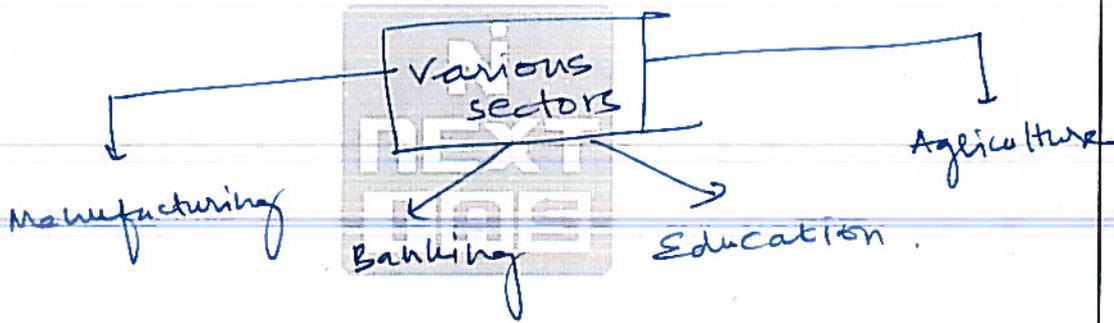
Positive Impact of AI on employment

1. creation of new areas of jobs.
   (eg) related to Data Analytics, supercomputers, Gen AI, Agentic AI, Machine Learning

2. reduce the burden of hard labour
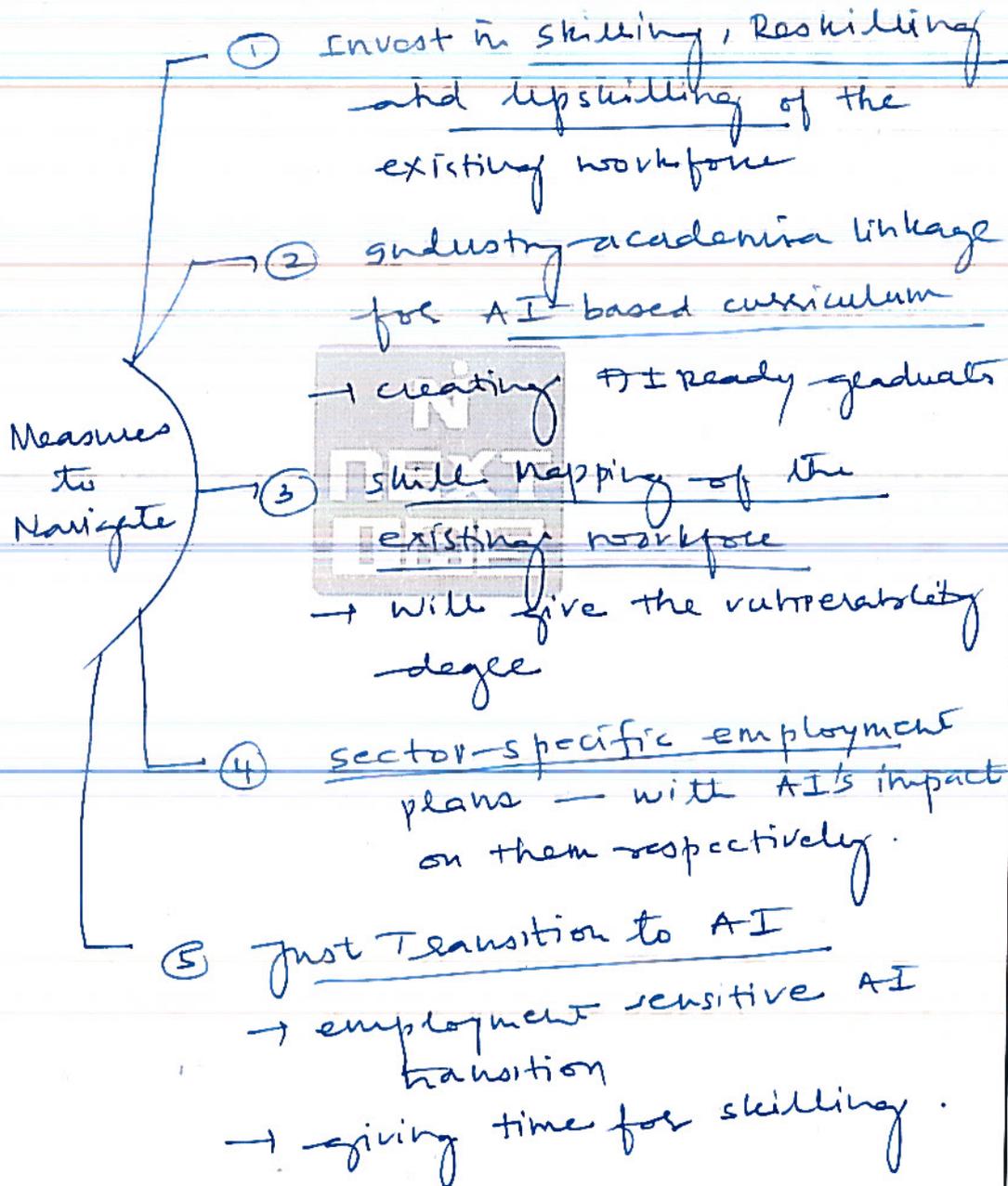   (eg) brings efficiency in AI-based repetitive tasks.

3. STEM based graduates
   - will be in demand.
   - India produces 40% of world's engineers

4. pattern detection
   - helps in averting frauds.

5. helps the existing workforce
   (eg) AI based tutors — helping teachers
   monitor performance of students

Negative impacts :

1. Loss of jobs.
   → WEF → 40% job losses in various
          sector.

2. ITe5/IT sector
   - more vulnerable to job cuts

3. autonomous decision-taking
   - may lead to industrial errors.

4. need for constant reskilling
   - will become redundant in
     job market, in absence of
     constant learning / skilling

5. May propagate the biases and gender disparity

(eg) STEM — dominated by Male.
— M/o Education : 60 — 40 / per 100
Male Female

Measures to Navigate

① Invest in skilling, Reskilling and upskilling of the existing workforce

② Industry - academia linkage for AI based curriculum
→ creating AI ready graduates

③ skill mapping of the existing workforce
→ will give the vulnerability degree

④ sector-specific employment plans — with AI's impact on them respectively.

⑤ Just Transition to AI
→ employment sensitive AI transition
→ giving time for skilling.

AI is a double edged sword, its impact on employment can create synergy if managed strategically.

13. भारत में फसल-उपरांत होने वाला नुकसान प्रतिवर्ष लगभग ₹1,52,790 करोड़ है। भारत में फसल-उपरांत होने वाली हानियों के लिए किस हद तक कृषि उत्पादों के परिवहन और विपणन में आने वाली बाधाओं को जिम्मेदार ठहराया जा सकता है?

(उत्तर 250 शब्दों में दीजिए) 15 अंक

India's post-harvest losses amount to approximately ₹1,52,790 crore annually. To what extent can post-harvest losses in India be attributed to the constraints in the transport and marketing of agricultural products? (Answer in 250 words) 15 Marks

According M/o Agriculture Report

India faces loss of foodgrain post harvest to the tunes of (36-40%) .
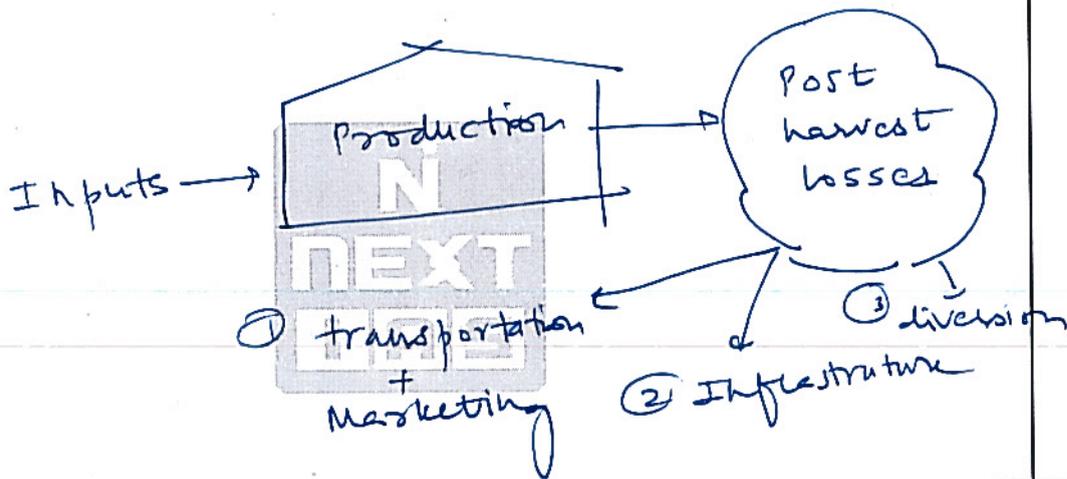
Constraints in Transportation & Marketing as reason for losses.

1. Dominance of Roadways.

— 97% of the total produce is transported via ROADWAYS

2. use of air conditioned tool

— during transporation, only 15% is carried via cooling silos.

3. According to Dr. Ashok Gulati

3.1 → 22% of the food grains is diverted

3.2 → doesn't reach the consumers.

3.3 → this becomes 28% if states are included

4. Lack of Multimodal communication
   → eg interconnectivity between Railways - Airport - Roadways.

5. Fragmented supply chain
   → the communication between farmer and consumer is missing.

6. Investing to FORK to FARM
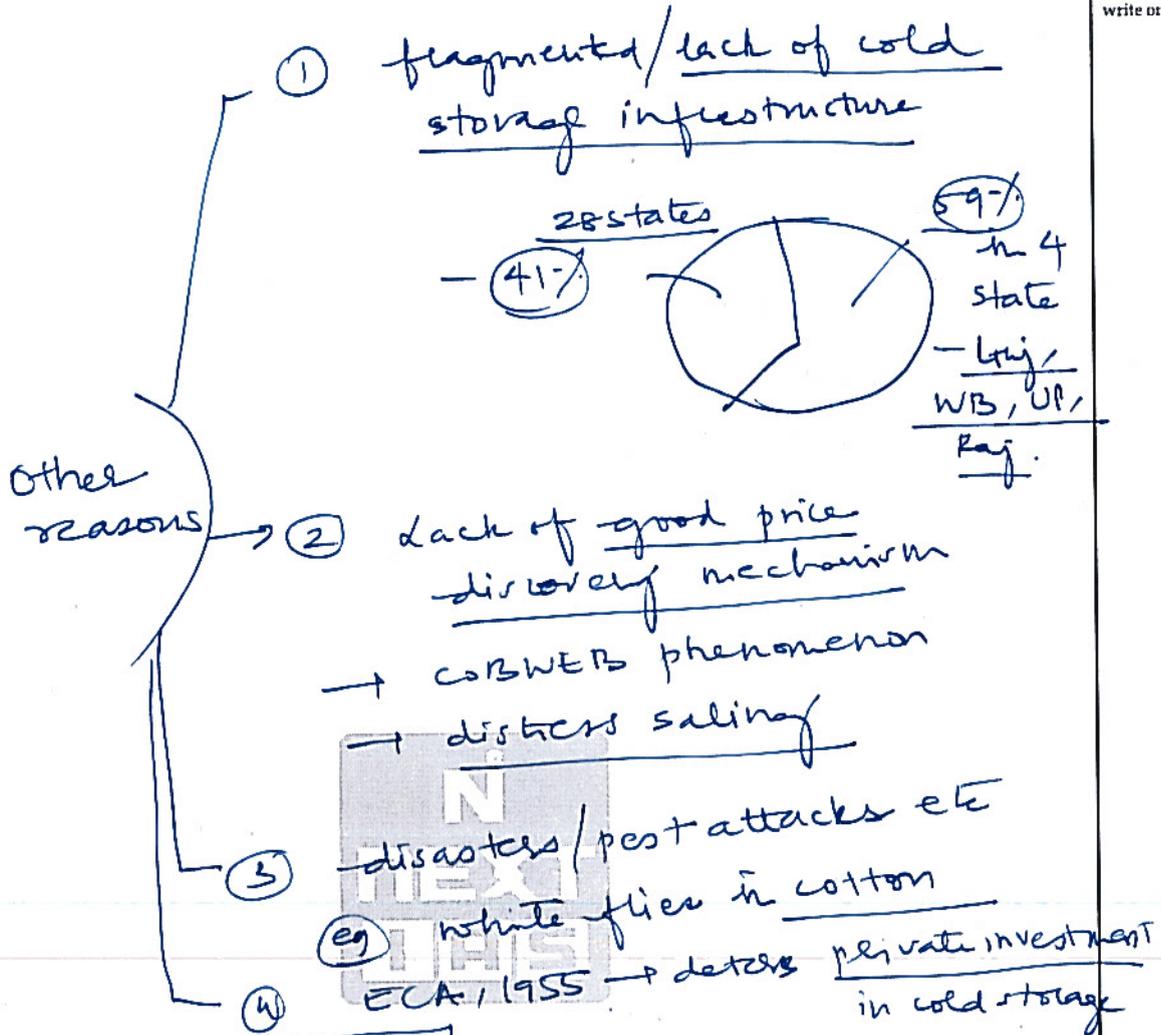   — currently, it is supply-driven procurement
   — rather than demand driven
   As highlighted by ASHOK DALWAI PANEL.

7. lack of traceability
   → leading to discarding by EU countries.

8. Lack of uniform standards for organic produce
   eg NPOP & Participatory Guarantee scheme (PGS)

① fragmented/lack of cold
storage infrastructure

28 states

(41%)   (59%) in 4 state
— Guj/ WB, UP, Raj.

Other reasons

② Lack of good price
discovery mechanism

→ COBWEB phenomenon
→ distress saling

③ disasters/pest attacks etc
eg. white flies in cotton

④ ECA, 1955 → deters private investment
in cold storage

Measures Needed

1. creation of integrated supply chain
2. cold storage infra.
3. going beyond cereal-centric price
   and procurement
4. integrated multimodal transportation
   — Krishi Rail / Krishi UDAN

Investments are needed, esp.
by Private players, to reduce the food
losses post harvest.

14. भारतीय कृषि में प्रत्यक्ष और अप्रत्यक्ष सब्सिडी क्या हैं? इन सब्सिडी ने देश की फसल विविधता और कृषि अर्थव्यवस्था को किस प्रकार प्रभावित किया है?

(उत्तर 250 शब्दों में दीजिए) 15 अंक

What are the direct and indirect subsidies in Indian agriculture? How have these subsidies impacted the cropping diversity and farm economy of the country?

(Answer in 250 words) 15 Marks

Subsidies are price support Mechanisms by The government to farmers to address the market failures (or) to aid in procurement for food security.

Subsidies

Direct subsidies

- PM-KISAN
- Fertiliser subsidy
- interest subvention
- KCC.

Indirect subsidies

- Power tariffs
- MSP
- Loan waivers etc.
- ECA/MSS
- export bans
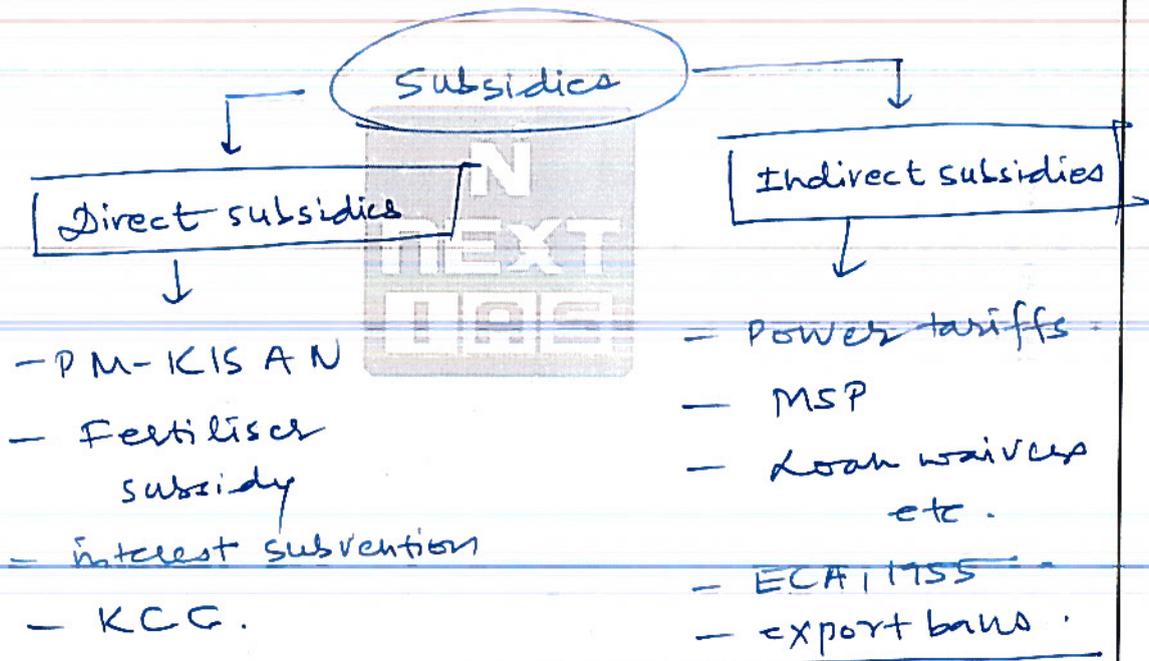
① They impact directly on the farming decision

② usually affect pre-and during production

① They impact indirectly → nudging toward govt. target

② affects during post production (some during production too)

Negative Impact ~~of~~ ~~Fertilizer~~ Subsidies

1. Fiscal consolidation is hampered

   (eg) 1.7 Lakh crore — fertiliser subsidies.

   2.1 lakh crore — food subsidies

   ~ 4.0 Lakh crore.

2. It has leads to increased water usage

   (eg) 1.5 ft / year every year — Ground water level depleting — (NITI Aayog)

3. distorted Fertiliser

   (eg) Ideal NPK 4 : 2 : 1

   Actual 7 : 3.7 : 1.5

4. cereal-centric price and procurement regime

   → wheat / paddy
   → pulses neglected

5. Increased usage of diesel engines for irrigation

   → air pollution   } Agriculture
   → carbon emission   } 18%
                           of total
                           GHG

                        → MOEFCC

6. DISCOM crisis

→ Punjab / Haryana / Rajasthan are becoming mini-SRI LANKAS
              —— RBI Report

7. WTO

= issues at WTO - violating de minis principle.

- Positives

① PM-KISAN
- 6000/- transfer
   help in decision-making

② reduced farmer suicides
   ∟ NCRB → once farmer suicides acc. for >10% now 6%.

③ indebtedness ↓
- access to institutional credit

④ Food security

⑤ protected from foreign imports

eg) USA's dairy sector

MMT of produce	240	330
	2014	2024
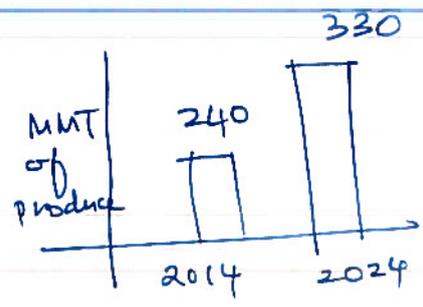
There is a need to relook at subsidies and harmonise into direct price & transfer, in order to reduce leakage and increase efficiency of money spent.

15. भविष्य के अंतरिक्ष संचालन और मिशनों में पुन: प्रयोज्य प्रक्षेपण वाहनों की क्षमता पर चर्चा कीजिए। पुन: प्रयोज्य प्रक्षेपण वाहनों के विकास की दिशा में भारत की क्या पहल है?　　　(उत्तर 250 शब्दों में दीजिए) 15 अंक

Discuss the potential of reusable launch vehicles in future space operations and missions. What are India's initiatives towards the development of reusable launch vehicles?

(Answer in 250 words) 15 Marks

Reusable launch vehicles are gaining traction in the space economy. "SpaceX" recent Reusable launch vehicle is also a case in point.

Potential of Reusable Launch vehicles

1. Reduce the material costs
→ Reduce, Reuse, Recycle

2. Promote circular economy in space industry.

3. Prevent/reduce the Kessler syndrome in space.
→ Space-waste-management.

4. increase in the no. of space operations and Missions ↑↑
→ makes it efficient

5. Helps missions like SpadeX — Space Docking exercise.

Space ---> △ — Satellite

☐ — launch vehicle back ↓

⌂ — launch vehicle

ground ←
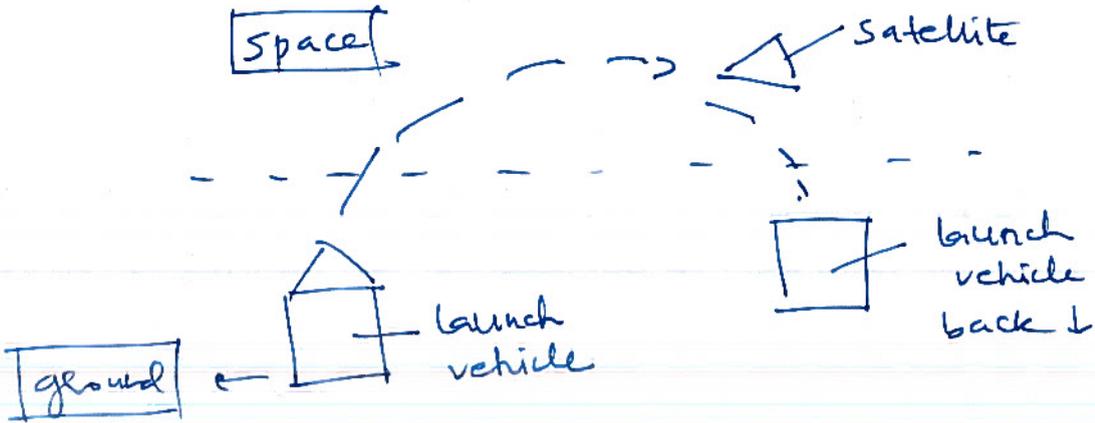
Initiatives by INDIA

① opening the space for private entities via NSIL

② [space startups] eg Agrikul, skyroot etc

③ opening of FDI — via govt. route.

④ International collaboration eg SpaceX, ISRO, CERN

⑤ increasing investment by Govt. in space sector.

Challenges

1. Nascent technology
   — Know-how is limited
   — makes it challenging.

2. Use of specialised Materials
   — beyond what is known/practiced
   currently.

3. international competition
   — advances by Space X, EU.

4. ISRO's conservative Approach
   — in allowing private participation.
   — lack of distrust

5. Low R&D
   — India's GERD is 0.67%.
   — very dismal
   — hindering
   research
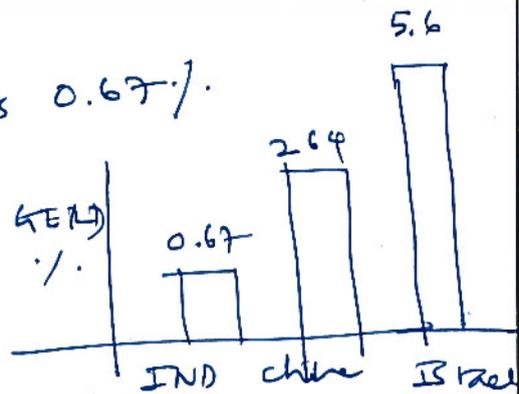
6. Despite all the claims, govt.
   Spending on ISRO, has reduced.

   Reusable launch vehicle, can
   be game-changer, strategically, economically
   and ecologically.

16. हाल ही में शुरू की गई BioE3 नीति के लक्ष्यों और उद्देश्यों की व्याख्या कीजिए। यह नीति अर्थव्यवस्था के "हरित विकास" को सुनिश्चित करने में किस प्रकार सहायक हो सकती है? (उत्तर 250 शब्दों में दीजिए) 15 अंक

Explain the aims and objectives of the recently launched BioE3 policy. How can the policy help in ensuring "green growth" of the economy? (Answer in 250 words) 15 Marks

Ashwini Vaishnaw recently launched the BioE3 policy, adding a new dimension to the Bio-economy. and Bio-Technology

BIO-E3

Economy   Energy   Employment
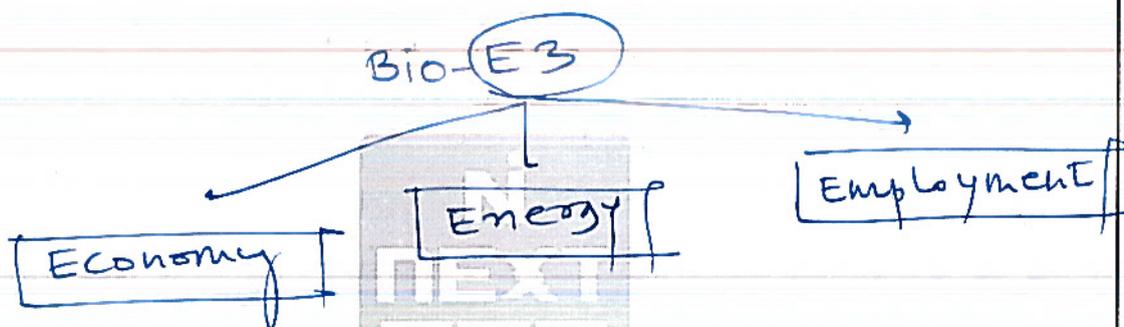
Aims and Objectives of E3 policy

1. creating a pathway for green economy

2. utilising the STEM potential to create potential employment.

3. decarbonising the Mobility and economy in general

4) E20 - blending

4. utilising biotechnology for new
plant varities

(eg) Drought resilient, & <u>climate</u>
<u>resilient</u>
<u>pest resistant</u>

5. helps in <u>plant-based solutions</u>
— to mitigate emission/pollution

6. <u>energy security</u>
— accessibility, availability and
affordability

3(As).
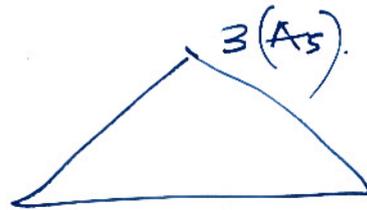
<u>Green Growth of economy</u>

1. <u>Just energy transition</u>
— that is inclusive, equitable
and employment sensitive

2. <u>decarbonising</u> transportation
— hybrid vehicles —
— flexi-fuel vehicles ⎱ eg: [BRAZIL]

3. creating pathway for
— environmental justice
— reducing potential emission

4. Inline with <u>PANCHAMRIT goals of</u>
   COP26 — Glasgow

   — LIFE Mission

5. <u>promote circular economy</u>

   → reduce wastage of resources.
   → increase efficiency.

6. <u>transition to green-economy</u>

   = multi-sectoral transition

   ⑨ mobility, to agriculture to fuel.

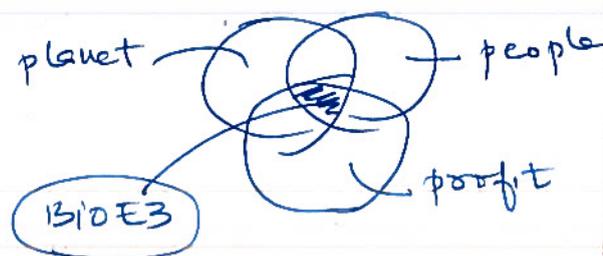7. <u>emerge as global leader</u>

   — GREEN DIPLOMACY.

8. <u>create green jobs</u>

   — that are <u>earth positive</u> and
   people positive and <u>profit positive</u>.

Thus, BioE3 policy is a potential
gamechanger in multiple ways from
"<u>energy</u> to <u>economy</u> to <u>employment</u>; it
has multifaceted approach

17. क्योटो प्रोटोकॉल के अंतर्गत विभिन्न बाजार तंत्र क्या थे? पेरिस जलवायु परिवर्तन समझौते का अनुच्छेद 6 क्या है? नेट-शून्य लक्ष्यों को प्राप्त करने में वैश्विक कार्बन बाजार के महत्व की व्याख्या कीजिए।(उत्तर 250 शब्दों में दीजिए) 15 अंक

What were the various market mechanisms under the Kyoto Protocol? What is Article 6 of the Paris Climate Change Agreement? Explain the significance of the global carbon market in achieving net-zero targets. (Answer in 250 words) 15 Marks

Kyoto Protocol is considered as the near universal and successful Protocol among other environment & climate action framework.

Various Market Mechanism

CDM

ETS

— Annex I countries
— Annex II

Article 6

— Paris climate Change Agreement

① global collaboration and engagement to create market and non-market mechanism for carbon emission mitigation

② to make changes in the national budget framework to account carbon

③ to mainstream carbon finance in to global markets.

④ equitable, efficient creation of (carbon credit) exchange.

Significance of Carbon Markets in achieving Net zero

1. Helps in inclusive, equitable carbon credit transfer mechanism

2. Market based mechanism for exchange
   → along lines of CBDR-RC

3. create financial flows for developing countries
   → to help mitigate and adapt

4. enable technology transfer to developing countries
   → bridging the North-south (trust deficit)

5. mainstreaming the carbon credit into Global accounting systems
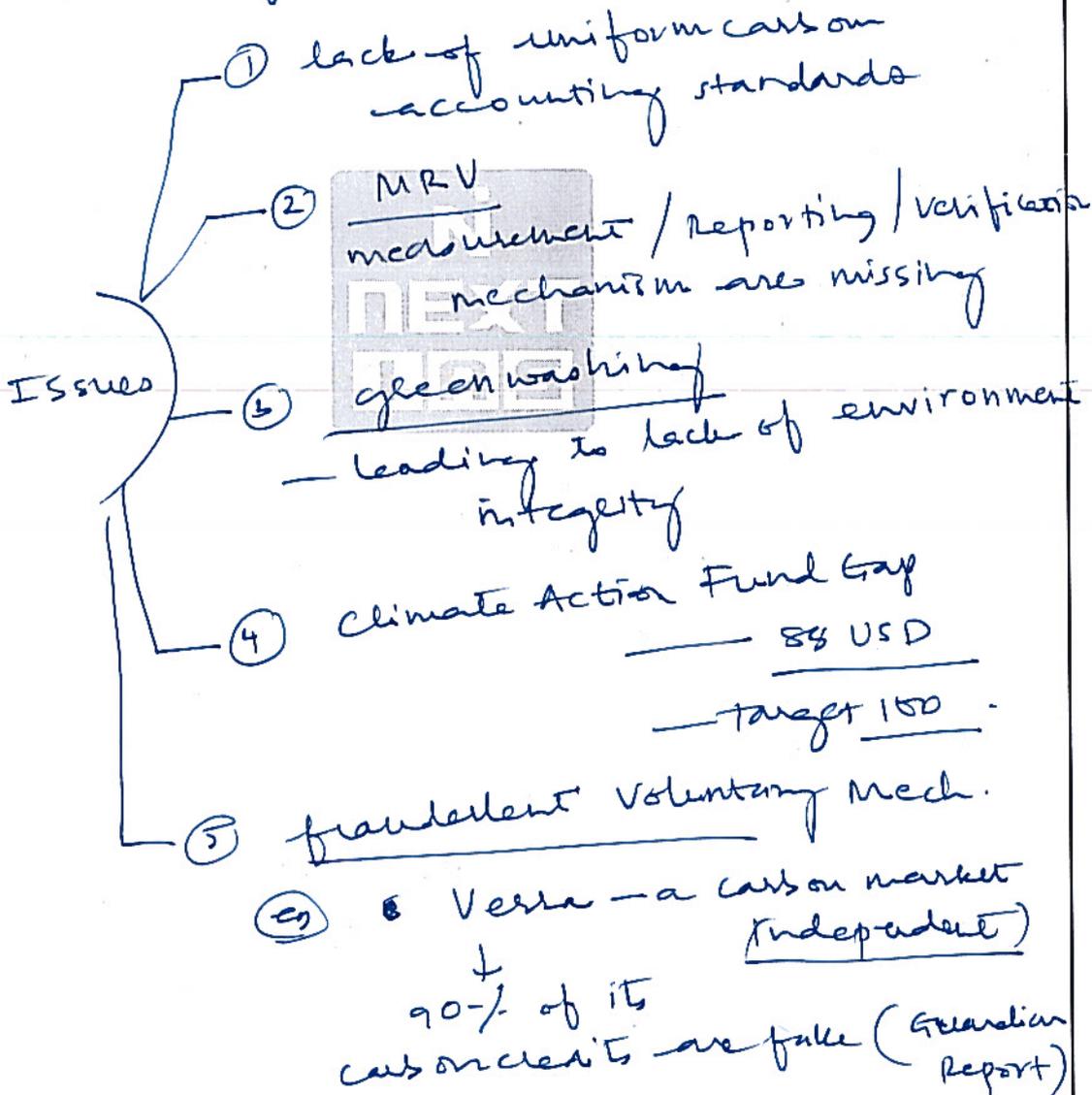   → enable changes in National accounting too (eg) Green GDP.

6. Bridge the gap of Climate Action Fund Gap

→ target of 100 bn USD every year

7. create voluntary mechanism too

   ⇨ EU-ETS; INDIA CCTS.

8. pooling of funds

Issues ⎰
① lack of uniform carbon accounting standards

② MRV
measurement / Reporting / verification
mechanism are missing

③ greenwashing
— leading to lack of environment integrity

④ climate Action Fund Gap
— 88 USD
— target 100.

⑤ fraudulent Voluntary Mech.
⇨ ⊗ Verra — a carbon market
(independent)
↓
90% of its
carbon credits are false (Guardian Report)

Thus, carbon ⊗ market are needed to meet the needs of Net-zero. Globally carefully crafted collaboration is needed

18. जलवायु परिवर्तन और तेजी से हो रहे शहरीकरण ने भारत में गर्मी की लहरों के प्रभाव और आवृत्ति को तीव्र कर दिया है। चर्चा कीजिए। हीट एक्शन प्लान (एचएपी) भारत में हीटवेव प्रबंधन को कैसे बेहतर बना सकते हैं?

(उत्तर 250 शब्दों में दीजिए) 15 अंक

Climate change and rapid urbanization have intensified the impact and frequency of heat waves in India. Discuss. How can Heat Action Plans (HAPs) improve heatwave management in India?
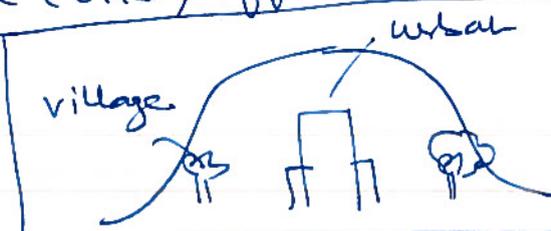
(Answer in 250 words) 15 Marks

IMD defines, heatwaves as increase in temperature unevenly from the regular range to the tunes of 4.6-5.4°C.

For plains → >40°C

For hilly region → >36°C.

Intensification of Impact and frequency of heatwave

1. Urban heat island (UHI) effect
   - increased use of black asphalt
   - reducing the albedo - feedback - mechanism

   village | urban

2. IPCC AR6
   - Business as usual approach has lead to 1.1-1.2°C ↑ in temp.
   - will further rise to 2.5-2.9°C in future

3. creation of heat-dome to due
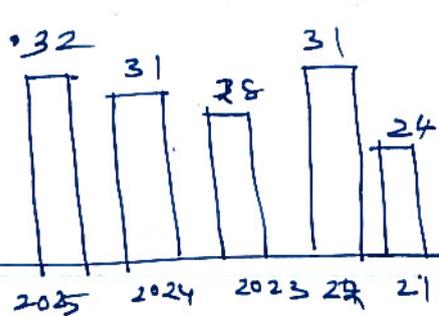high pressure system
→ trapping the sunlight.

4. disturbance global atmosphere
wind circulation
→ westerlies are warmer/harsher

5. increasing no. of heat days
— according to
   I M D

6. IMD's heat-feel-index
→ even temp. maybe numerically
   40-44°C
→ they feel like 51-54°C.
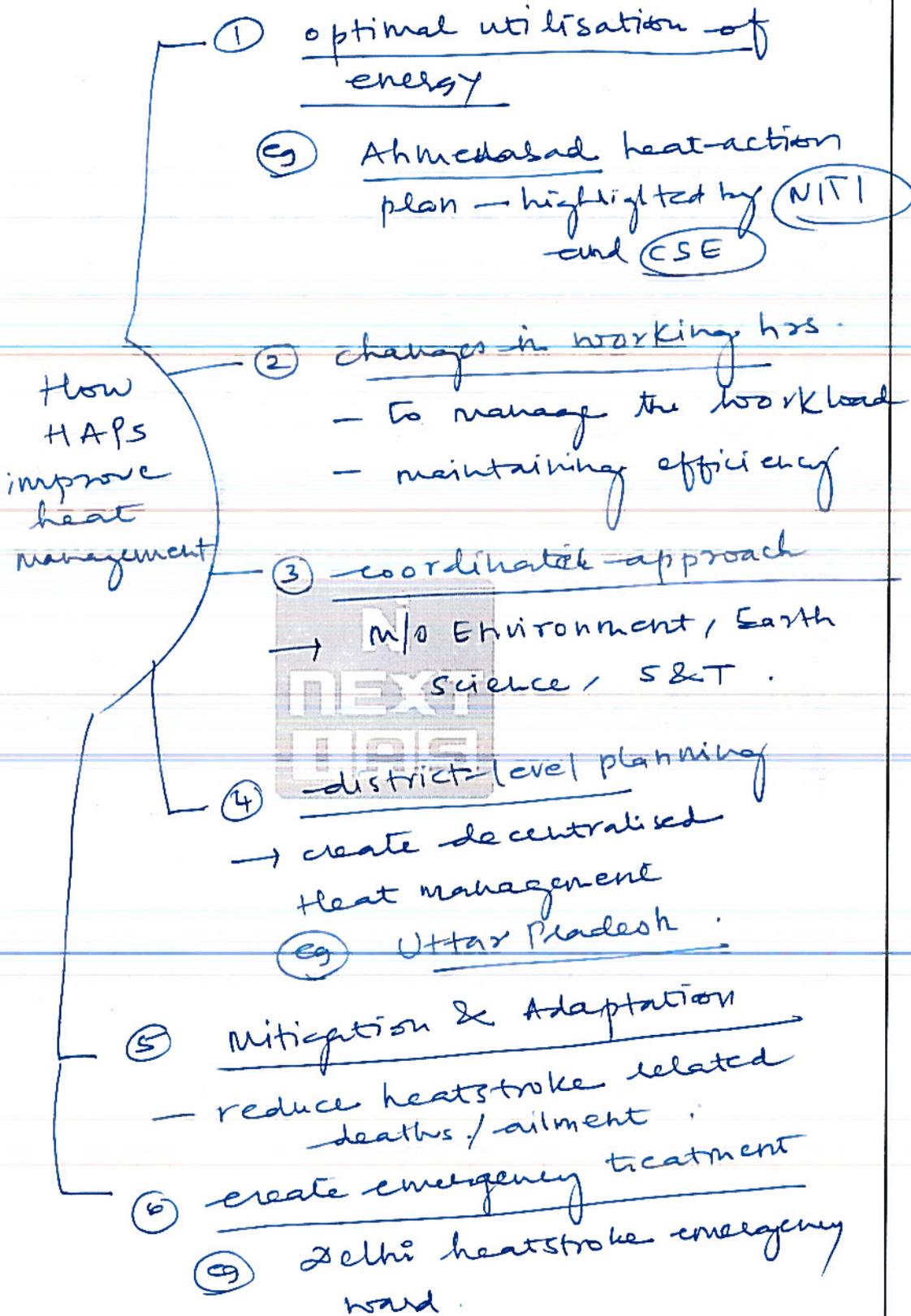
7. effect on worker productivity
→ (WB) world Bank report
→ 1.5-2% ↓ GDP loss

8. effect on agri-productivity
→ 15-20% loss in crop yield.
→ horticulture → even higher (30%.)

How
HAPs
improve
heat
management

① optimal utilisation of energy

eg Ahmedabad heat-action plan — highlighted by NITI and CSE

② changes in working hrs.
— to manage the workload
— maintaining efficiency

③ coordinated approach
→ M/o Environment, Earth science, S&T.

④ district level planning
→ create decentralised Heat management
eg Uttar Pradesh.

⑤ Mitigation & Adaptation
— reduce heatstroke related deaths / ailment.
— create emergency treatment
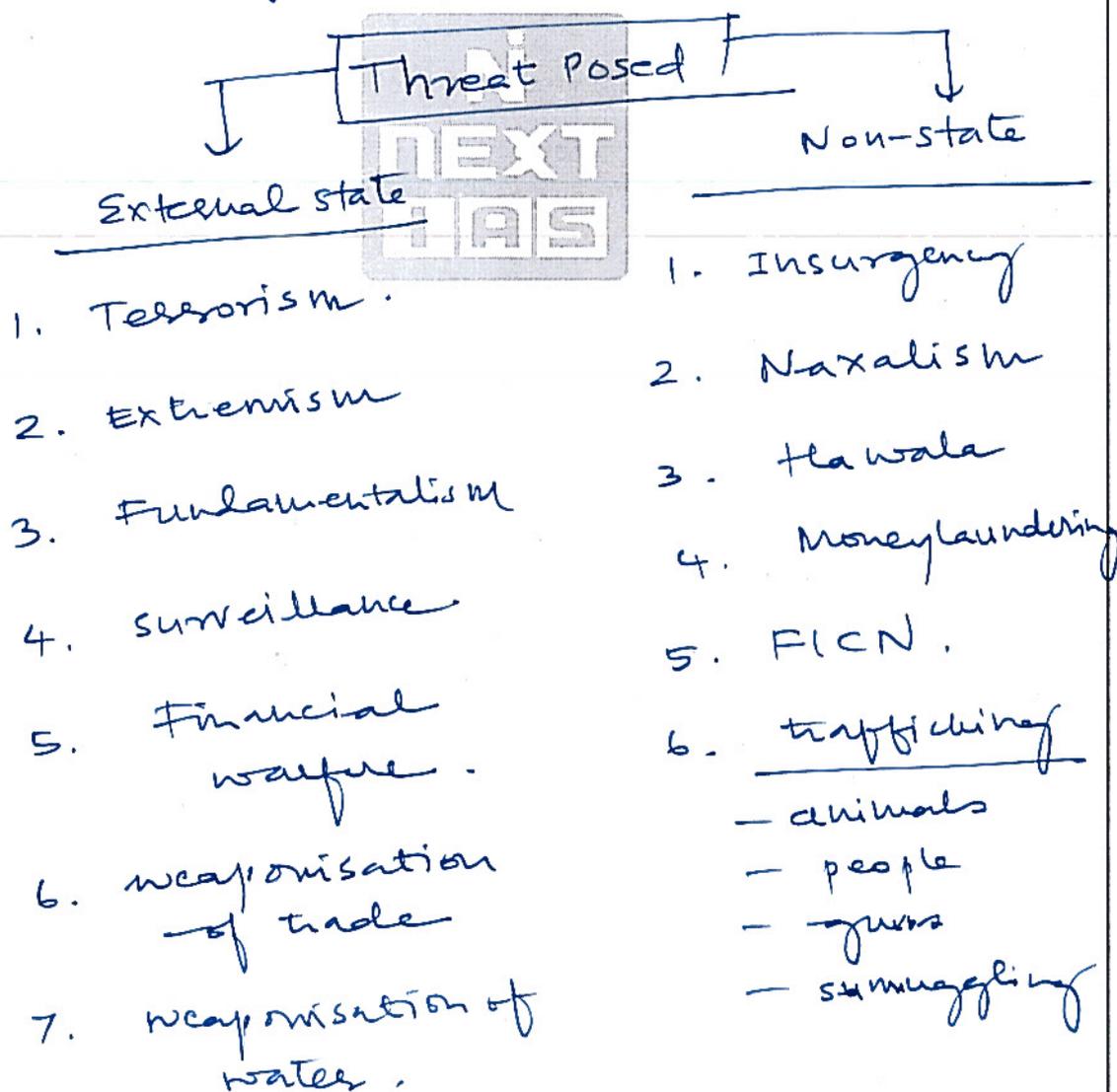
eg Delhi heatstroke emergency ward.

India should brace to the increasing no. of days of heatwaves. HAPs have the potential to mitigate them.

19. बाह्य सरकारी एवं गैर-सरकारी तत्वों द्वारा भारत की आंतरिक सुरक्षा के लिए उत्पन्न खतरे क्या हैं? इन खतरों से निपटने के लिए आवश्यक रणनीतियों पर चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए) 15 अंक

What are the threats posed to India's internal security by external State and non-state actors? Discuss the strategies necessary to tackle these threats. (Answer in 250 words) 15 Marks

NSA Ajit Doval said " India needs to beace against two types of actors. For that internal security garners same attention as external security."

Threat Posed

External state
1. Terrorism.
2. Extremism
3. Fundamentalism
4. surveillance
5. Financial warfare.
6. weaponisation of trade
7. weaponisation of water.

Non-state
1. Insurgency
2. Naxalism
3. Hawala
4. Money laundering
5. FICN.
6. trafficking
   - animals
   - people
   - guns
   - smuggling

Strategies Necessary

1. Terrorism:
   → India's New Common (PM Modi)
      i) No differentiation b/n state sponsored (or) non-state actor terrorism
      ii) terror and - talks cannot happen
   → iii) global coordination — "zero tolerance to terrorism"

2. Naxalism
   → development-led approach to reduce the spread of Red corridor
   → from corridor of violence to corridors of growth

3. extremism
   - WHAM: winning hearts and minds
     (eg) Op. Sadhbhavana.

4. Insurgency
   → inclusion and decentralised governance
     (eg) NE as "Ashta Laxmi"
        → Development package of 25,000 cr

5. Money laundering
   → FAFT guidelines like Mutual
     Technical Audit
   → use of tech- for fraud detection
   → "Wolfsberg Declaration"

6. Fundamentalism
   → platforms like RATS under SCO

7. Drug Trafficking
   → Nasha Mukti Bharat campaign.
   → strong border — covering the
     transit points btn golden triangle
     and global cresent   (G. Cresent)

8. 'whole of govt =
   approach
   → interministerial
     coord → Home Affairs,
             Panchayat Raj,
             Rural Development,
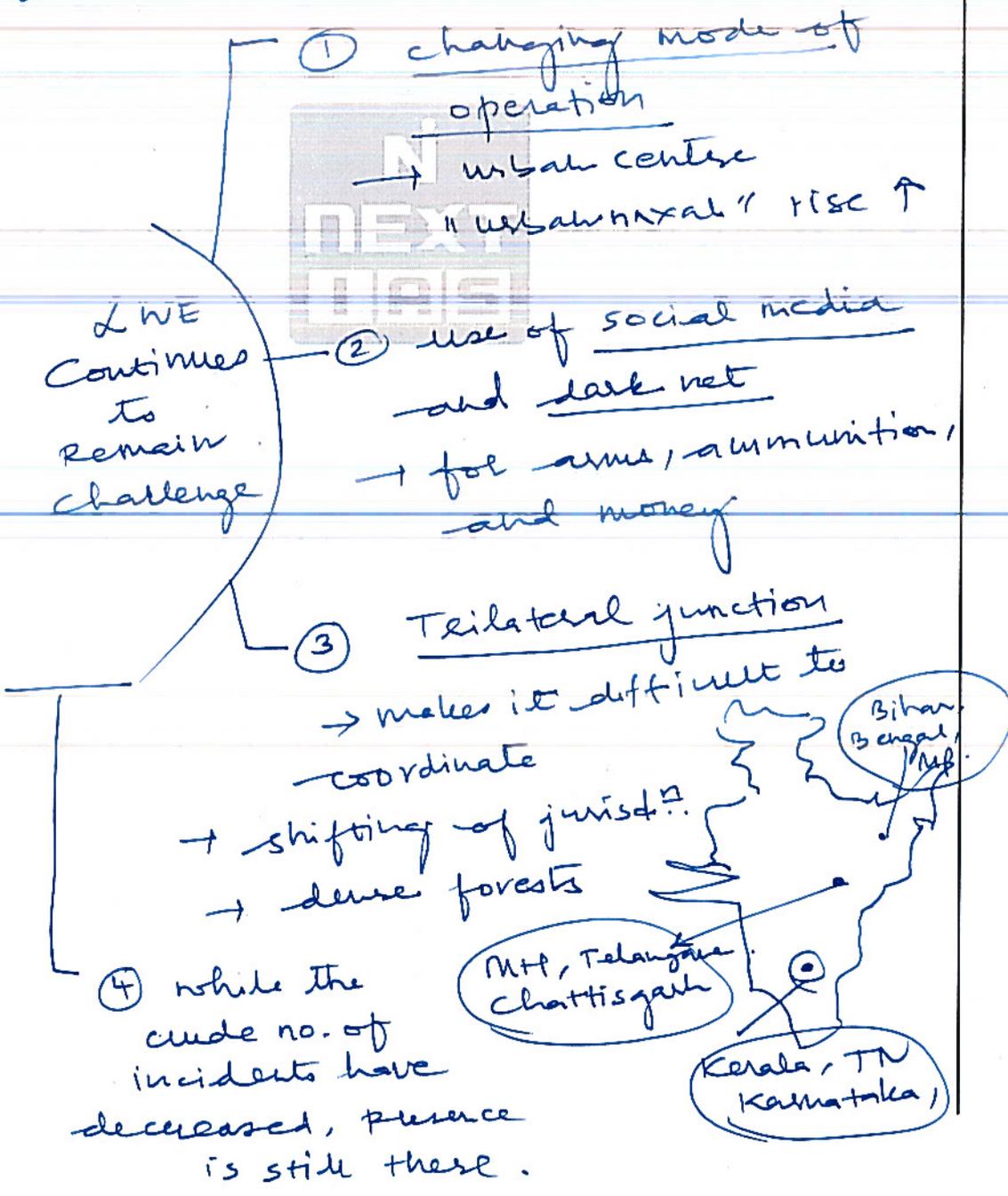9. " 'whole of system approach"
   — Defence forces, paramilitary,
     reserve, intelligence.

   A carefully crafted collaboration,
one that encompasses domestic and global
convention, is needed to tackle these and
ensure safety within boundaries.

20. वामपंथी उग्रवाद (एलडब्ल्यूई) भारत की आंतरिक सुरक्षा के लिए चुनौती बना हुआ है। देश में वामपंथी उग्रवाद के मुद्दे को हल करने के लिए भारत सरकार के दृष्टिकोण पर चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए) 15 अंक

Left-wing extremism (LWE) continues to remain a challenge to India's internal security. Discuss the Government of India's approach towards solving the issue of LWE in the country.
(Answer in 250 words) 15 Marks

The government has set a strong target of creating NAXAL-MUKT BHARAT by March 31st 2026, as LWE continues to remain a challenge.

αWE Continues to Remain Challenge

① changing mode of operation
→ urban centre "urban naxal" rise ↑

② use of social media and dark net
→ for arms, ammunition, and money

③ Trilateral junction
→ makes it difficult to coordinate
→ shifting of jurisd.ⁿ
→ dense forests

Bihar, Bengal, MP

MP, Telangana Chattisgarh

Kerala, TN Karnataka,

④ while the crude no. of incidents have decreased, presence is still there.

Governments approach in solving

1. Use of Technology
   - (e) Operation KAGAR, march 2025
     - → AI, surveillance tools, drones
     - → leveraging tech.

2. Recognising that development is at the core of issue
   - ee It is as much a development issue as is a security issue ''
     — [Manmohan Singh]

3. surrender and rehabilitation approach
   - → leading to major decline via non-violent, voluntary method.

4. Keeping tribals at the centre
   - — resurgence of schemes / policies and inclusion
   - (e) — Dharti Abha Utkarsh Abhiyan
     - — PM-JANMAN, EMRS.
     - — ⑤ constitutional provision. (5th schedule)
     - — PESA.

5. Central and state coordination

  (eg) Operation Black forest → @ the
       trilateral junction

6. State led initiatives

  - Chattisgarh panchayat initiatives
  - 10% of development projects, if
    help in countering naxalism.

7. Urban Naxalism

  - MH/'s recent " Maharashtra Special
                      Public security Act "
  → to counter urban naxals.

8. Investing in defence forces

  (eg) Police Modernisation scheme
       Road development → PM Sadak
                              Yojana.

9. Winning hearts and minds (WHAM)

10 whole of system approach
    → COBRA, Police, intelligence.

       The multi-sectoral approach has
  led to reduce the red corridor from 164+
  districts to 38 districts. From Red corridor
  to corridor of hope & development is
  the goal.

Space for Rough Work

NEXT IAS

Space for Rough Work

NEXT IAS

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2. Do not write anything other than the actual answers to the questions anywhere inside your QCA Booklet.	2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
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4. Do not leave behind your QCA Booklet on your table unattended, it should be handed over to the invigilator after conclusion of the exam.	4. For rough notes or calculation, the last two blank pages of this booklet should be used. The rough notes should be crossed through afterwards.
	5. If you wish to cancel any work, draw your pen through it or write "Cancelled" across it, otherwise it may be evaluated.
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महत्वपूर्ण निर्देश

अभ्यर्थियों को निम्नलिखित निर्देशों को ध्यानपूर्वक पढ़ना चाहिए। किसी भी निर्देश का उल्लंघन करने पर दण्डित किया जा सकता है।

क्या न करें-

1. इस प्रश्न-सह-उत्तर पुस्तिका के भीतर कहीं भी अपना नाम या पंजीकरण संख्या न लिखें।

2. अपनी QCA पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तरों के अलावा कुछ भी न लिखें।

3. अपनी QCA पुस्तिका से कोई भी पृष्ठ न फाड़ें, यदि आपको कोई पृष्ठ गायब लगे, तो पर्यवेक्षक/निरीक्षक को सूचित करना न भूलें।

4. अपनी QCA पुस्तिका को अपनी टेबल पर न छोड़ें, परीक्षा समाप्त होने के पश्चात इसे निरीक्षक को सौंप देना चाहिए।

क्या करें-

1. कवर पृष्ठ पर दिए गए निर्देशों को ध्यान पूर्वक पढ़ें और उनका सख्ती से पालन करें।

2. QCA पुस्तिका के कवर पृष्ठ पर दिए गए स्थान पर अपना पंजीकरण नंबर और अन्य विवरण लिखें।

3. स्पष्ट और पठनीय तरीके से लिखें। खराब/अपठनीय लिखावट में न लिखें।

4. रफ नोट्स या गणना के लिए, इस पुस्तिका के अंतिम दो खाली पृष्ठों का उपयोग किया जाना चाहिए। रफ नोट्स को बाद में क्रॉस कर देना चाहिए।

5. यदि आप किसी कार्य को रद्द करना चाहते हैं, तो उस पर अपना पेन चलाएं या उस पर "रद्द" लिखें, अन्यथा उसका मूल्यांकन किया जा सकता है।

6. परीक्षा हॉल छोड़ने से पहले अपनी QCA पुस्तिका व्यक्तिगत रूप से निरीक्षक को सौंप दें।

ऑनलाइन सुविधा का लाभ उठाने वाले अभ्यर्थियों के लिए विशेष अनुरोध

1. QCA पुस्तिका को ठीक से स्कैन करें। हम चाहेंगे कि आप स्कैनिंग के लिए कैमस्कैनर ऐप (CAM SCANER) का प्रयोग करें। (यह कोई प्रमोशन नहीं है)।

2. कृपया QCA पुस्तिका को पर्याप्त रोशनी में स्कैन करें कम रोशनी में स्कैन की गई पुस्तिकाएं, उनके मूल्यांकन की गुणत्ता को बाधित कर सकती हैं।

3. स्कैन के दौरान छाया वाले किसी भी पृष्ठ/पीडीएफ को फिर से स्कैन किया जाना चाहिए। कृपया सुनिश्चित करें कि आपके द्वारा अपलोड की गई पीडीएफ यथा संभव स्पष्ट हो ।

4. QCA पुस्तिका का उपयोग नहीं करने वाले उम्मीदवारों को अपना विवरण पहले पृष्ठ पर देना चाहिए और मैक्रो टिप्पणियों के लिए अगला पृष्ठ खाली छोड़ दें। यह समझना चाहिए कि उत्तर स्कैन की गई पीडीएफ में पृष्ठ नंबर 3 से शुरू होना चाहिए।

5. QCA पुस्तिका का उपयोग नहीं करने वाले उम्मीदवारों को प्रश्नपत्र के अनुसार उत्तर के अनुक्रम का पालन करना चाहिए।

6. कृपया स्कैन किए गए संस्करण में उत्तर के अनुक्रम और कुल पृष्ठों की संख्या की जाँच करें। सुनिश्चित करें कि यह उसी के भौतिक संस्करण के अनुरूप है।