TEST CODE | 8 | 1 | 3 | 4 | 1 | 1 |

MGP 2025

Time Allowed : Three Hours
समय : तीन घंटे

ForumIAS

Maximum Marks : 250
अधिकतम अंक : 250

GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	DSK PRACHET.		
Roll No./अनुक्रमांक		Medium/माध्यम	English ☑ · हिंदी ☐
Center Code/परीक्षा केंद्र		Date/दिनांक	8/7/25.

*Center Code : For Online – 1900 / Delhi : Karol bagh – 1901, ORN – 1902, Mukharji Nagar – 1903 / Patna : Boring Rd. – 2001 / Hyderabad : Jawahar Nagar – 2101

INDEX TABLE / अनुक्रमणिका

Q. No. प्र.सं	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक
1		
2		
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20		
Total/कुल अंक	250	

INSTRUCTION / अनुदेश

1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet.
कृपया उत्तर–पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।

2. There are **TWENTY** questions printed in ENGLISH & HINDI, all questions are compulsory.
उत्तर पुस्तिका में अंग्रेजी/हिंदी में **बीस** प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।

3. The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।

4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided.
उत्तर प्रवेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।

5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off.
प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न–सह–उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।

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Examiner's Discretion/मूल्यांकन कर्त्ता का विवेक :	Start Time/प्रारंभ करने का समय :	End Time/समाप्त करने का समय :
	11: 25	2:25

Total Marks/कुल अंक :	Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन ☑ Offline/ऑफलाइन ☐

*Examiner's Discretion is the marks awarded at the discretion of the examiner based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy.

मूल्यांकन कर्त्ता का विवेक अंक आपकी लिखावट, प्रस्तुति, आरेखों के उपयोग, फ्लोचार्ट, तथ्यों और आकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्त्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक है।

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ECN CODE/ ईसीएन कोड :	EG/ईजी : ① ② ③ ④ ⑤	Evaluation Date/ मूल्यांकन तिथि :

Note: Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion the tests are also available online in your portal to aid in your preparation. Further, students are requested to see copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

EXAMINER'S REMARKS

CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS = Answered What is Asked.** This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first place. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjectivity of the examiner.

2. **CD & VA = Content Density & Value Addition.** Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit and space limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of (but not all!) suggestions, ideas quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.

3. **S & F = Structure & Flow =** Whether you have structured your answer properly or not. Whether the answer has been broken into parts and sub-parts and each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.

4. **P & R =** How your answer performs on the criteria of **presentation, ease of read, clarity and apparent effort** in writing the answer. This affects the subjective components of assessment.

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Q.1) The Union Budget 2025-26 outlines a shift towards the 'debt-to-GDP ratio' as the fiscal anchor starting from FY 2026-27. Discuss the rationale behind this shift. (10 marks. 150 words)

केंद्रीय बजट 2025-26 में वित्त वर्ष 2026-27 से राजकोषीय आधार के रूप में 'ऋण-से-जीडीपी अनुपात' की ओर बदलाव की रूपरेखा तैयार की गई है। इस बदलाव के पीछे के तर्क पर चर्चा करें। (10 अंक, 150 शब्द)

). FRBM Act 2003 outlines 4 indicators for fiscal health measurement, two of which are Fiscal Deficit (FD) and Debt-to-GDP Ratio (D2G). 2025 Budget announced shift from FD to D2G.

Rationale behind the shift.

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① Limited flexibility in Fiscal Deficit framework → Only budgetary focus

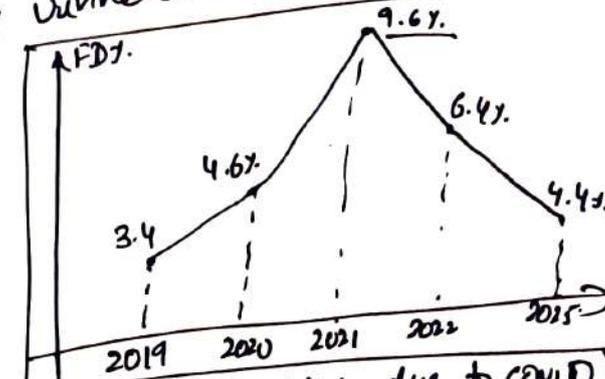   ↳ Reduced scope for financial innovations, or sectoral adjustments

        Eg→ Deficit in one sector can't be supplemented in another sector.

② Narrow scope of FD

    ↳ Balance sheet emphasis, doesn't effectively account for extra-budgetary measures.

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③ Adaptability to global conditions
    ↳ FD very vulnerable to global

shocks ⇒
        ↓
Huge uptick due
to COVID

④ Compliance paradox
        ↓

Monetary policy affected
due to FD compliance.

Fig: FD uptick due to COVID

However, D2G ratio is also counter-productive, despite addressing above FD concerns:

① Reduced regulation → can lead to increased Debt-servicing costs = already (19%).

② New target of 52% Debt-to GDP by 2030 still higher then FRBM target of 40%.

③ Broad target - no specific action plan for different sector / states.

A way forward for the government could be to adopt a mixed and sector-specific approach — FD regulations for specific ministries and Overall Debt 2 GDP regulation

Q.2) Why does India need to transition from a 'build to print' to a 'build to design' model in manufacturing? What steps has been taken by the government in this regard? (10 marks. 150 words)

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भारत को विनिर्माण में 'अनुसारी निर्माण' (Build to Print) से 'डिजाइन आधारित निर्माण' (Build to Design) मॉडल की ओर संक्रमण की आवश्यकता क्यों है? इस संदर्भ में सरकार द्वारा कौन-से कदम उठाए गए हैं? (10 अंक, 150 शब्द)

Q.3) Explain the concept of a nutrition-sensitive food system and suggest strategies to achieve it in the country.

(10 marks. 150 words)

पोषण-संवेदनशील खाद्य प्रणाली की अवधारणा को समझाइए तथा देश में इसे प्राप्त करने के लिए रणनीति सुझाइए।

(10 अंक, 150 शब्द)

3). Nutrition-sensitive food system refers to one which acknowledges the differential nutrition needs of a society according to the region, social group, community etc and aims at fulfilling these gaps through tapping into the indigenous nutrition systems.

Strategies to achieve nutrition-sensitive food systems can be.:

① Identification of region-specific, or gender/community specific nutritional inadequacies.
   ↳ (Ex) → Iron deficiency among Indian women.

② Capacity development of frontline workers like ASHA-School teachers etc to incorporate

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and educate & nutritional information.

③ Reorienting welfare — PDS, ICDS, Poshan
Abhiyan like nutrition schemes
↳
focus on enhancing dietary diversity
(Ex) Provision of eggs and milk in Tamil Nadu

④ Improving nutritional awareness, among
underprivileged especially.
↳ (Ex)→ Tribals suffering from
Vitamin D deficiency — Rickets.

⑤ Encouraging crop diversification
↳ Procurement via [MSP], provision of
[seed material], [Market linkages] etc.
for establishing dietary diversity.
↳ [Ashok Dalwai's] suggestion of farm
to fork model be adopted.

⑥ Local body empowerment ⇒ for inculcating
dietary diversity campaigns and initiatives
to ensure intra-household nutritional enrichment

Establishing a nutrition-sensitive food system
can enable India to achieve goal of | Swasth Bharat
| Suposhit Bharat.

Q.4) Give a brief overview of the Digital Agriculture Mission. How can it benefit the agriculture sector?

(10 marks. 150 words)

डिजिटल कृषि मिशन' का संक्षिप्त विवरण दीजिए। इससे कृषि क्षेत्र को क्या लाभ हो सकता है? (10 अंक. 150 शब्द)

Digital Agriculture mission refers to complete digitalization of Indian agriculture, covering all activities from end-to-end. It was established in 2021.

Brief Overview of Digital Agriculture mission (DAM).

① Agri-Stack → DPI for agriculture.
   Includes 3 components:-
   ⓐ Farmer registry — Digital database of all farmers, along with agri. details.
   ⓑ Geo Referenced village maps
      ↳ based Cadastral maps digitalization.
   ⓒ Crop-sown registry— Digital registry of different crops sown.

② Krishi Decision support system (KDSS)

Includes Agro- advisories, integration of weather and monsoon forecasts and extension services for best technology.

③ Soil Health profile mapping — to ensure fertility of soil.

Benefits of DAM for agricultural sector.

① Enhance crop productivity → KDSS enabled advisories & extension services.

② Market stability of agriculture → [Crop Sown Registry]
   (Ex)→ Prevents distress imports of pulses every year - reducing forex burden.

③ Remunerative pricing for farmers
   (Ex) ↳ Effective MSP procurement through farmer and crop sown registry

④ Targeted agricultural interventions
   ↳ (Ex)→ (FPO) formation based on crops and area.

⑤ Risk mitigation for farmers —
   (Ex) Through forecasting monsoon variability

Thus, DAM helps realise the vision established by [Ashok Dalwai] in 2017 to double the farmer's income

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Q.5) Rare earths are not just elements; they are foundational inputs that act like 'seeds of technology'. Elaborate. (10 marks. 150 words)

दुर्लभ मृदा तत्त्व (Rare Earths) केवल रासायनिक तत्त्व नहीं हैं; ये प्रौद्योगिकी के 'बीज-तुल्य' मूलभूत निवेश हैं। सविस्तार वर्णन कीजिए।
(10 अंक. 150 शब्द)

Rare Earth elements are also called Lanthanides, start from Atomic number (57) Lanthanum. Other significant REEs include Cerium, Neodymium, Samarium, Europium etc. They are divided into light REEs (upto Europium) and heavy.

REEs act as ⟨seeds of technology⟩ in today's world, because they are the foundational inputs for the same :—

⟨REEs as foundational inputs.⟩

① ⟨Inputs for digitalization⟩
↓
Hard disk drives, Electromagnetic receptors, Semiconductor chips all use REEs.
↓
Europium, Terbium, Gadolinium etc

Enable digitalization of world economy, and are crucial for other manufacturing also

② |Green transition|
  ↳ Solar PV modules, Semiconductors for energy transmission and conversion, Battery technology ⟹ all use REEs.

③ Artificial intelligence, Quantum computing and Super computing
                        ‖
  (REEs) like (Yttrium, Scandium) etc.

④ New age technologies — IoT, IR4.0, Deep industrialization etc all rely on REEs.

However, there are significant challenges associated with REEs :-

  ① (Resource and technology nationalism)
    ↳ Refining technology and 80% REEs sourced from china- vulnerable to supply chain disruptions

  ② Limited technology with India to (refine), despite presence in (Monazite sands)→ External dependency.

  ⊕ The new 30 mineral - (Critical mineral list) includes many REEs which must be secured in supply to achieve (Bharat @ 2047 Vision)

Q.6) Why retrofitting Electrostatic Precipitators (ESPs) in Indian thermal power plants is a more viable and effective option compared to the installation of flue gas desulfurization (FGD) systems?

(10 marks, 150 words)

भारतीय तापीय विद्युत संयंत्रों में फ्लू गैस डिसल्फ्यूराइजेशन (FGD) प्रणालियाँ लगाने के बजाय विद्युत-अवक्षेपकों (ESPs) का पुनर्संयोजन क्यों अधिक व्यवहार्य और कारगर विकल्प है?

(10 अंक, 150 शब्द)

Indian thermal power plants are one of the most highly polluting industries, run by coal and generating (60-70%) of India's power. Recent (Principal Scientific Adviser report) advises against Flue gas desulphirization installation (FGD) in these plants.

Advantages of Refrofitting ESPs instead of FGDs in thermal power plants.

① High cost of FGDs → reduces viability of thermal power plants.

② Low adoption of FGDs in thermal power plants — less then 10% across 10 years (since 2015).

③ ESPs → capture PM 2.5 and PM 10 greater pollutants in atmosphere

then SO_2 captured by FGD.

④ Simpler and easier concept ①
ESPs → easier removal, limited
processing of PM waste.

FGD ≠ complicated processing process.

⑤ (ESP)→ waste generated can be used
as fly ash for buildings, or carbon
capture.

However, FGDs also have their own
benefits compared to ESPs.

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① Production of Gypsum — India
import same, can help reduce
forex bills.

② Inadequacy of ESPs criticized by many
for capturing other pollutants like
SO_2, Heavy metals etc.

Thus, the government must push for
reducing pollution from thermal power plants
through both ESPs and FGDs to meet NDCs ①
Paris agreement.

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Q.7) 'The Environmental Impact Assessment (EIA) regime in India remains weak and is often reduced to a procedural formality.' In light of this statement. examine the key challenges in EIA implementation and suggest reforms.

(10 marks, 150 words)

'भारत में पर्यावरण प्रभाव आकलन (EIA) व्यवस्था कमजोर बनी हुई है और अक्सर इसे प्रक्रियात्मक औपचारिकता तक सीमित कर दिया जाता है।' इस कथन के आलोक में, EIA कार्यान्वयन में प्रमुख चुनौतियों का परीक्षण करें और सुधारात्मक उपाय सुझाएँ।

(10 अंक. 150 शब्द)

). Environmental Impact assessment (EIA), backed by (EPA 1986) was first officially notified by MoEFCC in 1994. However, it faces plenty) challenges in implementation.

> Challenges in EIA implementation.

① No independent, central authority to monitor EIA reports.
   ↳ Supreme Court in Lafarge Umiam mining case;

② Poor quality of EIA reports
   ↓
   Interdisciplinary knowledge is limited by (State IAA) boards.

③ Fradulent EIAs → Dandeli fraud, Kali River project fraud → criticised by NGOs

Call no. o2

④ Limited public engagement and ineffective implementation

↓

Ex IAS→EAS Nareshwan → Many EIAs not consulting local public— instead consulting far away NGOs (non-local).

⑤ Arbitrary executive actions ⇒ Last 5 years, 100+ notifications | for EIAs. released.

EIA draft 2020 criticised by many for executive overreach.

Reforms for EIA.

① Independent, Central authority for implementation.

② Establishing Strategic Impact assessments instead of EIAs— more expansive and early public engagement.

③ Institutionalising EIAs — Federal body for same, like GST → Example from Canada

EIAs are fundamental to establish a culture of Ecocentrism, and enable inclusion of LiFE policy into development process.

Q.8) Plastic pollution is emerging as a serious environmental threat in India. Discuss the various mitigation measures to address this problem and also government's initiatives in this regard.

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(10 marks, 150 words)

प्लास्टिक प्रदूषण भारत में एक गंभीर पर्यावरणीय खतरे के रूप में उभर रहा है। इस समस्या से निपटने के लिए विभिन्न शमन उपायों और इस संबंध में सरकार की पहलों पर चर्चा करें।

(10 अंक, 150 शब्द)

A) India ranks very high on the Plastic Waste mismanagement index — at about (98.5%), as released by Conservation International.

Various mitigation measures have been promoted to address the same :-

Mitigation Measures for addressing plastic pollution.

① Environmental nudges + Adoption of wooden cutlery, decreasing single-use plastic.

② Deploying no-plastic zones — Kodaikanal (TN), Sikkim etc => at tourist places.

③ Strengthening collection and processing facilities at cities,

ㄴ(Eg.) (Hyderabad) => [Swachh Autos] initiative

ㄴ BMCs collecting in Gujarat

> Government initiatives for same

① Plastic waste management - Rules - Proactive, multiple amendment.

ⓐ Ensured (EPR) for producers, packagers, importers and brand owners, facilitating funding.

ⓑ CPCB based registration for plastic producers.

ⓒ Banning of 19 types of Single-use plastic, Multilayer plastics etc.

However, challenges persist :-

① Fradulent certificates posted on CPCB, affecting claim veracity.

② (SE report) → Disputed claims of 60% waste recycling of government → only at 12%.

Thus, plastic waste management is imperative, especially due to latest reports of microplastic infiltration in brain and foetus also.

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Q.9) Amid evolving threats and need to blend private sector capabilities with India's current inter- nal security architecture. In this context, elaborate on the ways in which the private sector can contrib- ute to strengthening internal security.

उभरते खतरों के बीच, भारत की मौजूदा आंतरिक सुरक्षा संरचना के साथ निजी क्षेत्र की क्षमताओं को जोड़ने की आवश्यकता है। इस संदर्भ में, उन तरीकों पर विस्तार से चर्चा करें जिनसे निजी क्षेत्र आंतरिक सुरक्षा को सशक्त करने में योगदान दे सकता है।

(10 marks, 150 words)

(10 अंक, 150 शब्द)

). The recent Operation Sindhoor showed blending of private sector capabilities into the internal security architecture of the country.

Need to blending the same

① Decreasing burden of armed forces
   ↳ in production, innovation, maintenance

② Promotion of innovation ⇒ Entrepreneurship and scientific advancement.

③ Promotion of private defence sector, export potential enhancement.

Ways in which private sector can contribute.

① Production of: arms, drones, military equipment, clothing etc.

(Ex)→ L&T & Adani made drones - Lakshya.

② Scientific innovation - (iDEX) - Aditi scheme
for encouraging a tech-based solutions

(Ex)→ (IITB) developed water-purifier
bottle.

③ Maintenance of equipment ⇒ Howitzers
⇓   Tanks.etc
Decreasing external reliance for same
⇓
(Self-reliance)

④ Surveillance of borders, digital system etc
⇓
Through GIS, NRSc, drones etc.
(Ex)→ (Project Himeshakti) → China border

⑤ Space-based support ⇒ (Ex)→ Space Situational
Awareness. by (Netra).

(Reforms required for same) → Industry- Defence
linkage. ⇒ DRDO based
tech-transfer.
Deregulating defence sector
fostering participation

Thus, Private partnership can help strengthen
internal security architecture, taking on enemies
↪ USA and its private defence sector.

Q.10) 'Radicalisation in Jammu and Kashmir is driven as much by socio-economic factors as by external influences.' Discuss how education and youth engagement can play a role in countering radicalisation in J&K . 10M.

(10 marks, 150 words)

जम्मू और कश्मीर में कट्टरपंथ सामाजिक-आर्थिक कारकों के साथ-साथ बाहरी प्रभावों से भी प्रेरित है।' चर्चा करें कि शिक्षा और युवा भागीदारी किस प्रकार जम्मू और कश्मीर में कट्टरपंथ का मुकाबला करने में भूमिका निभा सकती है।

(10 अंक, 150 शब्द:)

Radicalisation in Jammu and Kashmir refers to the conversion of youth and locals by terrorists, indoctrinating into terror ideology. It is a major threat and reason for persistence of insurgency.

Internal factor		External factors
Poor Socio-economic development, lack of livelihood, stagnation of economy, neglect & exclusion.	Factors for Radicalisation	Terror outfits (LeT), Social media influence, Financing from outside.

Countering radicalisation in J&K

① Education
- ⓐ Enables greater literacy rate, more employment opportunities.
- ⓑ National scheme of education
  ↳ foster nationalism, counter radicalisation.

© Adult education — [Project UMMEED] enable
employment opportunities.

② | Youth engagement. |

ⓐ Demystifying indoctrination ⇒ Operation

ⓑ (Sahi Raatha) → Many youth apply
applied for army also.
Π.
ⓒ Countering narratives by terrorists.

ⓓ Provision ① employment opportunities
for youth ⇒ | Operation Sadh bhavana|
↓
socio-economic development.

ⓒ Capacity development → Enable digital
skills, english awareness etc ⇒ youth
mobility ⇒ [Op. Himayet].

Ⓠ However, such operations are not
enough, as socio-economic development also
dictates, infrastructure development — Channels
bridge and public engagement to win "Hearts
and minds" of terrorism & affected people.

Q.11) Outlining the key characteristics of the care economy, discuss how India can better integrate the value of unpaid and underpaid care work into its economic framework.   (15 marks. 250 words)

देखभाल अर्थव्यवस्था (केयर इकोनॉमी) की प्रमुख विशेषताओं को रेखांकित करते हुए चर्चा कीजिए कि भारत किस प्रकार अवैतनिक और अल्प वैतनिक देखभाल कार्य के मूल्य को अपने आर्थिक ढांचे में बेहतर ढंग से एकीकृत कर सकता है।

(15 अंक, 250 शब्द)

Ans World Bank revealed India's care work, unpaid and underpaid accounts for over 6% of GDP indirectly. There is an urgent need for ~~an~~ direct inclusion and integration
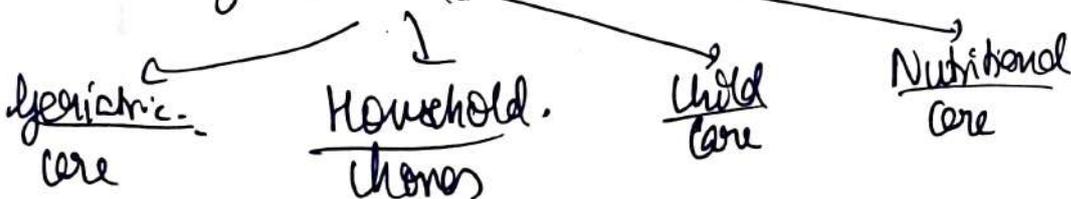

Key characteristics of care Economy.

① Participants — women mainly.

[2019] (Time use Survey NSO) → 284 minutes spent by women for household care work, compared to 84 by men.

② Remuneration — None economically.
   ↳ social recognition rarely

③ Aim and nature of work → Provision of care to other members of family

Geriatric care   Household chores   Child Care   Nutritional Care

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④ Lack of upward mobility / skilling potential.

⑤ Motivation → Social obligations towards family
  └ Patriarchel norms also.

Measures for integration of care work

---

① Financial empowerment of women
  ⇓
  ⓐ Providing access to financial resources.
  ⓑ En → PMJDY → 50% women accounts.
  ⓑ Financial literacy campaigns

② Capacity development of women
  ⇓
  PMKVY skilling (60% women)
  SHG based mobilization also.

③ Health and educational satureation.
  ⇓
  Social security, literaay → enabling
  equitable empowerment.

(4) Recognition of care burden/double shift of women
⊔
(En) → Maternity leave provisions.

(5) Empowerment of care workers
⊔
ASHA / Anganwadi workers → mostly female
↳ Enable [care economy formalization].

(6) Privatisation of care work — through creches / Anganwadis & geriatric care for effective participation

Challenges however persist → Persistence of Patriarchal norms
↳ Mental and physical overexertion of women — (Dual careers)
↳ Poor quality of auxiliary care units (creches)

As Swami Vivekananda said — "A bird can't fly on one wing", Women empowerment is likewise highly essential for economy, as world Bank says → [1% ↑ in LFPR → 0.3% ↑ in GDP.]
                                    female

Q.12) 'The rapid advancement of artificial intelligence (AI) presents both unprecedented opportunities and significant challenges for India's labour market.' Examine. Also suggest strategies to align AI adoption with inclusive and resilient labour market outcomes.

(15 marks, 250 words)

कृत्रिम बुद्धिमत्ता (AI) की तीव्र प्रगति भारत के श्रम बाजार के लिए अभूतपूर्व अवसर और महत्वपूर्ण चुनौतियाँ प्रस्तुत करती है।' परीक्षण करें। साथ ही, समावेशी और तन्यशील श्रम बाजार परिणामों के साथ AI अपनाने को संरेखित करने की रणनीतियाँ भी सुझाएँ।

(15 अंक, 250 शब्द)

Ans) AI advancement poses serious challenges for the labour market, as seen in the recent layoff of 10,000 workers in Intel.

But it also provides opportunities.

> AI's impact on labour market.

Positives ⇒ Opportunities.

---

① Opportunities for new jobs
↳
AI developers, technicians, Maintenance experts.

② Improves productivity of worker →
greater economic contribution
↳
Rise in wages

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③ Enables bridging of social gaps.
ↄ

Linguistic gap ⇒ Multilingualism.

Gender gap → AI assistance and
flexibility of work.

PoD gaps ⇒ AI based assistance.

④ AI expans scope and sector of
organization — leeding to higher
employment.

Negatives = Challenges.

① AI displacement of labour
ↄ
Tech-based companies, mid-level
positions ⇒ fired for freshers hired.

② Changing skilling needs ⇒ employment
opportunities declining for ~~AI~~
AI unfamiliar candidates.

③ ~~~~ Manufacturing replacement as
AI-led automation ⇒ (firing).

④ Increased productivity → doesn't account for increased wages.

Strategies to align AI adoption with labour market positive outcomes.

---

① Education advancements — Pedagogy and curriculum from Secondary to university level
to reflect changing industry demands.

② Enable skilling initiatives for AI (meity's future skills. pletform) to ensure AI adaptability.

③ Encourage retention of old employees →
with skilling programmes for companies

④ AI development — human-centric, and public-aligned. →[Paris Summit guidelines.]

AI ~~them~~ represents the other previous advancements ~~and~~ in technology, which led to workforce enhancement. However development of AI collaborative and consensus

Q.13) Why does India's agricultural export performance remain weak despite high production levels? What measures would you suggest to improve agri export competitiveness? (15 marks, 250 words)

उच्च उत्पादन स्तर के बावजूद भारत का कृषि निर्यात प्रदर्शन कमजोर क्यों है? कृषि-निर्यात प्रतिस्पर्धात्मकता में सुधार के लिए आप क्या उपाय सुझाएँगे?

(15 अंक, 250 शब्द)

An) India is one of the largest agri- producers in the world, second only to China. Yet, agri exports from India are limited in the world, with India leading in only rice exports.

Reasons for India's poor agri-export performance.

---

① lack of export linkages
   ↳ 85% of farmers are small and marginal.
   ↓
Lack linkages to external markets
            ↓
     Transportation. Market information,
     Storage etc.
            ↓
   Limited logistics support.

② Limited processing capacity
   ↳ only 10% of agri-yield processed.
   ↓
However processed product account for
even 13% Exports → potential for
                    exports through processing

(3) Lack of certification systems — No backward
tracing models
↓
required for exports by developed
countries → organic exports.

(4) Sanitary & Phyto sanitary ⇒ Non-tariff barriers
↓
Limiting exports of agri-products, and
WTO disputes.

(5) Low agri productivity ⇒ 50% lower than
china — leads to decreased production per
capita
↓
low exports

(6) Limited diversification of crops.
↓
Only rice exported → fruits and limited
vegetables in huge demand, but too exports.

Measures to improve agri-export competitiveness.

---

(1) Collectivisation and FPOs formation.
↓
Economies of scale, easier export linkages.
(Ex)→ Araku coffee FPOs, Vizag. AA

② Establishing commodity boards →

Turmeric board, Coconut board etc

⇊

Enable export oriented cultivation, source certification etc.

③ Encourage food processing industry

⇊

Processed foods → greater shelf life, better profit realization etc.

⇊

Export market expansion.

(Ex)→ Mozzarella cheese plants of Amul.

④ FTAs and international disputes resolution   ↳ to eliminate non-tariff barriers.

⟨UK-FTA⟩ a example.

⑤ Certification programmes — ⟨NPOP support⟩ for organic certification.

∴ Following on ⟨Ashok Dalwai's committee's⟩ recommendation, aggressively promoting external trade can help double farmers income

Q.14) "The agricultural subsidy regime in the country needs reforms to address the distortions it causes." Comment.

(15 marks. 250 words)

देश में कृषि सब्सिडी व्यवस्था में सुधार की आवश्यकता है ताकि इससे होने वाली विकृतियों को दूर किया जा सके। टिप्पणी करें।

(15 अंक, 250 शब्द)

An) Agricultural subsidies in India account for over (16% of agricultural output), limiting growth of the industry. It urgently requires reforms.

Distortions caused by subsidies in agriculture.

① Market distortions — (MSP-led)

Majorly rice and wheet ⟵ leads to artificial valudon of produce.
 ↳ although mainly controlled by (FCI)
crowding out private investment.

② (Fiscal distortions) — Agri subsidies ~ 2% of GDP → significent fiscal burden.

③ (Agricultural distortions) →

(a) Prevents crop - diversification
   ↳ based on procurement policies
                    ↳
              Cereals favoured.

(b) Limits innovation → Irrigation reform
    disincentivized ⇒ power subsidy
                           ↓
              Borewell usage, flood irrigation

(c) Restrictions on agri policy → Performance
    incentives, corporate incentives etc
                    ↓
    Met with public backlash.

(d) Environmental distortions — Fertilizer
    indiscriminate usage, groundwater
    depletion, Salinization of land - & Punjab.

(e) Farmer economic mobility also
    distorted   ↓↓

    PM Kisan like subsidies → ~~changing~~ restricting
    economic contribution
                    Subsidies promoting parasitical
    [Justice BR Gavai] →   existence

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Measures to reform subsidies.

① Promote targeted subsidies
⇩
only for SAM farmers.

② Rationalization of subsidies
Ex → Fertilizer - 43%, Power - 46%
and Irrigation - 7%. Subsidies only → MoA&FW
⇩
Must increase irrigation subsidies
through PMKSY

③ Incentives promotion → PM-Kisan
⇩
Modernization and Subsidy
Sustainable farming - linked.

④ Ashok Dalwai Comm. → 14% Agriculture
Infrastructure investments growth annually required.

⑤ Promote alternative income sources — for
Risk mitigation ↳ livestock, agroforestry etc.
As Thirukkural says → " If the farmers hands
slacken, the ascetic state shall fall." A productive
agricultural sector is crucial for Developed India by 2047

Q.15) How can biomanufacturing transform today's consumptive manufacturing paradigm to the one based on regenerative principles? Also discuss how BioE3 Policy (Biotechnology for Economy, Environment, and Employment) aims to foster biomanufacturing in the country. (15 marks, 250 words)

बायोमैन्युफैक्चरिंग आज के उपभोगात्मक विनिर्माण प्रतिमान को पुनर्योजी सिद्धांतों पर आधारित प्रतिमान में कैसे बदल सकता है? यह भी चर्चा करें कि बायोई3 (BioE3) नीति (अर्थव्यवस्था, पर्यावरण और रोजगार के लिए जैव प्रौद्योगिकी) का उद्देश्य देश में बायोमैन्युफैक्चरिंग को बढ़ावा देना है।

(15 अंक, 250 शब्द)

An). Biomanufacturing refers to focusing on manufacturing process inspired by biological systems, incorporating the same for expanding manufacturing potential.

> Role of biomanufacturing in transforming manufacturing paradigm.

① Biomanufacturing → Circular economy emphasis. → enable changing Current consumption trends to one based on regenerative trends.

② Waste utilization → Waste to Energy framework, biorecycling etc to enable reduction D waste.

(En)→ GobarDhen scheme enables
waste utilization to produce CNG.

③ Plastic waste management
    ↳ Bacteria like Acidophillus
                         ↓
                    Recycling and breakdown
    Re-utilization   ← of plastic waste.

④ Waste reduction → Sustainable designing
   through enzyme based Biomanufacturing
   principles.
   (En)→ Bookmark that transforms into
         a tree if planted.

⑤ Regenerative products → self-sustaining
   designs through mimicking biological
   processes
           ↓
   (En)→ Electronics design on satellites
   using self-repair technology

Bio E3 has been announced by Dept of Biotechnology to ensure Biotechnology-fuelled manufacturing :-

How Bio E3 aims to foster biomanufacturing

① Different components of Bio E3 →
Smart foods, functional proteins, theraeupetic medicines, bio enzymes etc
↓
Catering to different sectors of industry.

② International pioneering → Export led bio manufacturing → boost the Indian economy

③ Innovation and scientific biomanufacturing
↓
Industry - academic linkages, fostering (biotechnology startups) etc.

Biomanufacturing can form one of many sectors of manufacturing industry, contributing to achieving 🅑 (Arvind Panagriye draft comm)(2016) recommendation on a competitive, tech-fuelled manufacturing

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Q.16) The future of digital innovation depends on self-reliant, domain-specific AI capabilities. In this context, bring out the key considerations in developing indigenous AI models and tools. Suggest measures to build an enabling ecosystem for AI innovation in India. What initiatives have been taken by the government in this regard?

(15 marks, 250 words)

डिजिटल नवाचार का भविष्य आत्मनिर्भर, डोमेन-विशिष्ट AI क्षमताओं पर निर्भर करता है। इस संदर्भ में, स्वदेशी AI मॉडल और उपकरण विकसित करने में प्रमुख विचारों को स्पष्ट करें। भारत में AI नवाचार के लिए एक सक्षम परितंत्र बनाने के उपाय सुझाएं। इस सबंध मे सरकार द्वारा क्या पहल की गई है?

(15 अक, 250 शब्द)

An) Artificial intelligence has revolutionised the digital and sectors, with far reaching impacts on society. It kicked off with Chat GPT introduction by Open AI, and recently was revolutionised by Deepseeks emergence as well.

Key considerations for AI development.

① Availability of data — Structured, disaggregated, Expansive data for processing

② Ensuring privacy of the data
   Ex→ UK Open safely initiative for anonymous, public health records.

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③ <u>AI skills proficiency</u>

    ↳ to ensure effective model design.

④ <u>Compute capacity</u> ⇒ for training and deploying of LLMs.

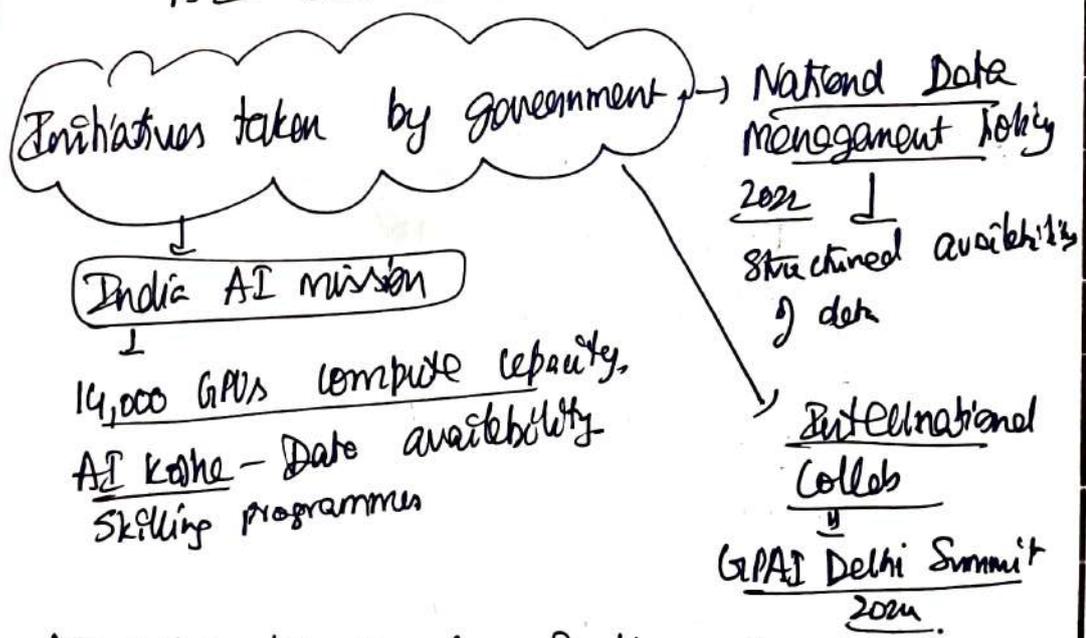⑤ <u>Societal linkages</u> — effective application of AI to solve <u>socio-economic</u> problem.

Measures to build AI ecosystem in India.

---

① ● <u>Educational changes</u>

    ↳ ⊕ Curriculum to include <u>AI from high school.</u>

    (Skilling) ⇒ Relevant AI development skills.

② <u>Easy availability</u> and <u>accessibility</u> of anonymous, <u>structured data</u> from government websites.

③ Collaborative AI research ↓ International university linkages, Societal linkages → NGOs etc → Human-centric AI deployment.

④ Revision of public compute capacity for AI development.

⑤ Ethical and legal Rights Commission ↓ to ensure transparent and responsible AI development.

Initiatives taken by government → National Data Management Policy 2022 ↓ Structured availability of data

India AI mission ↓ 14,000 GPUs compute capacity, AI Kosha - Data availability Skilling programmes

→ International Collab ↓ GPAI Delhi Summit 2021.

AI represents the face of the 21st century, and India must quickly get onto the AI bus for @ economic and geo-strategic reasons.

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Q.17) Marine oil spills are a form of environmental disaster, with far-reaching consequences for biodiversity and coastal livelihoods: however, India's preparedness to prevent such incidents and mitigate their impact has significant gaps. Analyze.

(15 marks, 250 words)

समुद्री तेल रिसाव एक प्रकार की पर्यावरणीय आपदा है, जिसके जैव विविधता और तटीय आजीविका पर दूरगामी परिणाम होते हैं; हालाँकि, ऐसी घटनाओं को रोकने और उनके प्रभाव को कम करने के लिए भारत की तैयारियों में महत्वपूर्ण अंतराल हैं। विश्लेषण करें।

(15 अंक, 250 शब्द)

A). The recent cases 1) shipping accidents in Arabian Sea - MSC ELA3, Hanoi indicate significant gap in India's marine oil spill prevention framework.

Consequences of marine oil spills.

① Biodiversity impact

ⓐ Affects local fa → Toxic ingestion ⇒ Mess mortality Events.

ⓑ Food chain disturbances
Bioaccumulation & Biomagnification of pollutants -

ⓒ Sunlight penetration affected by oil → Corals, aquatic plants, fish harmful impact

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ⓐ can lead to formation of dead zones
ꜜ
lack of oxygen
ꜜ
stops supporting life.

② |Coastal livelihood impact|

ⓐ Fishering industry affected
ꜜ
Restrictions on fishing. ⟹ Recently
Decline in fish stocks.   in Kerala.

ⓑ Coastal ingress - Tamil Nadu
affected   Chennai coastal
   agriculture   ↳ oil spill

ⓒ Water contamination.

Significent gaps in India's framework.

① limited capacity ⟹ [MSC ELA3]
ꜜ
lack of ships large enough to
collect oil.

② (Delayed response) → Hanoi case.
‖
Limited inter- ← delayed mobilisation
-agency coord. ↓ emergency measures

③ Liability Mechanisms enforcement
‖
Cross-border mechanisms lacking

④ Poor safety and regulatory checks
‖
2 incidents back to back in one
month off coast of Kerala.

⑤ India not signed on international
liability agreement → to enforce liability
measures on ship owner.

(Way forward) → Oil spills integration
into DMA (2005).

↳ Capacity development, immediate
response → strengthening coast guard.

Demarcating
responsibilities → NDRF, Coast guard, Navy etc.

For India to be a first responder in
the Indian Ocean, it is imperative that it establish
effective marine disaster framework in accordance
with Sendai framework → Disaster Risk Governance

Q.18) 'The United Nations has declared 2025 as the International Year of Glacier Preservation.' Bring out the ecological and socio-economic significance of glaciers. What are the key challenges in preserving them? What measures have been taken at national and international levels towards preservation of glaciers?

(15 marks, 250 words)

'संयुक्त राष्ट्र ने वर्ष 2025 को अंतर्राष्ट्रीय ग्लेशियर संरक्षण वर्ष घोषित किया है।' ग्लेशियरों के पारिस्थितिक और सामाजिक-आर्थिक महत्व को उजागर करें। उन्हें संरक्षित करने में मुख्य चुनौतियाँ क्या हैं? ग्लेशियरों के संरक्षण के लिए राष्ट्रीय और अंतर्राष्ट्रीय स्तर पर क्या उपाय किए गए हैं?

(15 अक, 250 शब्द)

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Q.19) What are the determinants of insurgency in the north-eastern region of India? What strategy should the Government of India. civil administration and security forces adopt to counter the threat in the affected areas?

(15 marks, 250 words)

भारत के उत्तर-पूर्वी क्षेत्र में उग्रवाद के निर्धारिक तत्व क्या हैं? प्रभावित क्षेत्रों में खतरे का मुकाबला करने के लिए भारत सरकार, नागरिक प्रशासन और सुरक्षा बलों को क्या रणनीति अपनानी चाहिए?

(15 अंक, 250 शब्द)

A) North Eastern Region (NER) of India has historically witnessed insurgency, from the Nagalim movement of 1950s to the recent meitei-kuki conflict.
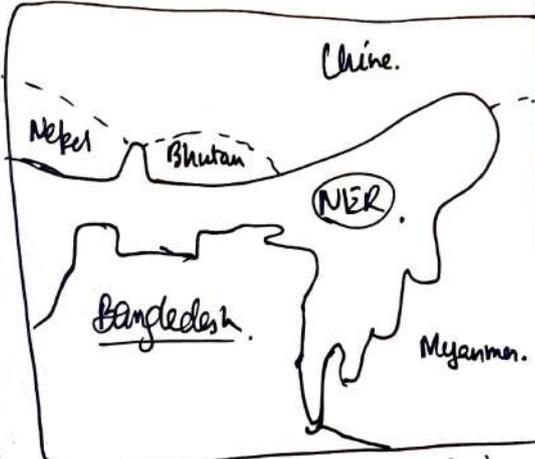
Determinants of insurgency in NER.

Fig: NER- geostrategical position

① **Multiple ethnicities**
→
Many tribes, leading to inter-ethnic conflict.
Ex → meitei-kuki

② **Political alienation** — Demands for autonomy — NSCN -IM — Nageland / Nagalim

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③ (Governance Neglect)

ⓐ Development deficiency. ⇒ (Infrastructure)

ⓑ Exploitation by outsiders and governments.

ⓒ Limited services disbursal.
↓
Water, Electricity etc.

④ (Outsider influx)

ⓐ Bengali immigrants.
ⓑ Bangladeshi illegal immigration. (ULFA protested in Assam)

⑤ (Politics of recognition) ⇒ Bodos (NDFB)
fighting for self-state.

⑥ (Cultural imposition) - By government.
↓
Protection of cultural autonomy.

⑦ External factors ⇒
ⓐ Shared sovereignty from Myanmar.
ⓑ Conflict spillover ⇒ Drugs, Arms, weapons

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Refuge from Myanmar civil war.

① Chinese support to insurgents.

Strategy to counter insurgency.

① Government of India

 ⓐ Extension of development ⟹ NER
   Roads extension, Sela tunnel etc

 ⓑ Protection and preservation of
   Cultural identity.

② Civil administration.

 ⓐ Eradication of social evils like Bonded
   Labour.
 ⓑ Ensure effective delivery of services.
   ↳ prevent socio-economic
     distress

③ Security forces

 ⓐ Prompt response and targeted operations
   like Op. Brahma — Myanmar.
 ⓑ Civic Action programmes, lenient AFSA
   usage.

Insurgency in the NER must not be treated
with force alone, but also ensure civilian protection during
the same ⟶ Hoode Committee.
                                    & promote

Q.20) Unmanned Aerial Vehicles (UAVs) have become an integral aspect of modern conflict and warfare, employed by both state and non-state actors. Discuss its implications for India's security architecture and state the measures being taken to address them. Also suggest other steps to tackle the threats emanating from UAVs
(15 marks, 250 words)

मानव रहित हवाई वाहन (UAVs) आधुनिक संघर्ष और युद्ध का अभिन्न अंग बन गए हैं, जिनका उपयोग राज्य और गैर-राज्य दोनों ही प्रकार के अभिकर्ता करते हैं। भारत की सुरक्षा संरचना के लिए इसके निहितार्थों पर चर्चा करें और उन्हें संबोधित करने के लिए किए जा रहे उपायों का वर्णन करें। UAVs से उत्पन्न होने वाले खतरों से निपटने के लिए अन्य कदम भी सुझाएं।
(15 अंक, 250 शब्द)

Ar) UAVs recently seen in Operation Sindhoor have emerged as an integral aspect of modern warfare. Same was also observed in Russia-Ukraine and Israel-Iran war

Implication of UAVs for Indian security architecture

① Larger volume of attacks → unlike planes earlier, UAVs more expendeble
↓
close to 500 shot down in Operation Sindhoor.

② Easier availability → Kinetic warfare by non-state actors also. → Enhanced risk.
Terror outfits - let, Hurriyet.

③ Surveillance threat from 'HAPS
in atmosphere → security compromise.

④ Logistical support through UAVs
   ↳

Across Pakistan and Myanmar
border- Arms, funds etc to
insurgents.

⑤ Smuggling of drugs — undetected
across usual fences
           ↳ ineffective.

Measures taken to address threat.

① Anti- UAV air defence system — Project
Kushe ⇒ Russian S400.
                                    ↓
                        Directed Energy weapons
                        systems

② Enhanced aerial surveillance and
   radars → detection of UAVs.

③ Electromagnetic warfare — Jamming signals across borders.

④ UAVs of self also deployed
  ↳ Lakshya, MQ-9B etc

Other reforms to be adopted.

① (Home Minister) ⇒ recent announcement
   ⓘ border modernization in 5 years
   Border idea ⓘ only territorial to be
   replaced by heavil — naval) integration
   also.

② Anti- UAV surveillance deployed across
   border, as part ⓘ (CIBMS) ⇒ expand
   application to Drones.

③ AI-based intelligence to track drone
   movement.
   The definitions ⓘ warfare have changed,
   as proclaimed by (CDS General Chauhan) and
   India must adopt its internal security architecture
   to the evolving threat.