

Time Allowed : Three Hours  
समय : तीन घंटे**ForumIAS**Maximum Marks : 250  
अधिकतम अंक : 250**GENERAL STUDIES / सामान्य अध्ययन**

Name Of Candidate परीक्षार्थी का नाम	SHUBHAM BHARDWAJ		
Roll No./अनुक्रमांक	1910085118	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	1901	Date/दिनांक	3/09/2023

\*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****INSTRUCTION / अनुदेश**

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

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 कर्ता का विवेक :	Start Time/प्रारंभ करने का समय : 9:30 AM	End Time/समाप्त करने का समय : 12:30 PM
Total Marks/कुल अंक :	Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन <input type="checkbox"/> Offline/ऑफलाइन <input checked="" type="checkbox"/>

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

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

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

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## EXAMINER'S REMARKS

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### 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.
-

Q.1) To what extent can the Jan Vishwas (Amendment of Provisions) Act 2023 help enhance trust-based governance for ease of living and doing business? (10 marks, 150 words)

जन विश्वास (प्रावधानों का संशोधन) अधिनियम 2023 किस हद तक जीवन और व्यवसाय करने में आसानी के लिए विश्वास-आधारित शासन को बढ़ाने में मदद कर सकता है? (10 अंक, 150 शब्द)

Indian society and governance runs in a perpetual trust deficit environment due to colonial overhang. In this context, the Jan Vishwas (JV) Act, 2023 becomes crucial.

JV Act in enhancing trust-based governance

★ For ease of living

- 1) Decriminalise petty offences, and move towards fine-based penalties.
- 2) Remove colonial baggage, and improves social trust.  $\Rightarrow$  self-certification of document.
- 3) Idea of 'innocence' of citizens, and not presumption of guilt.  $\Rightarrow$  IT returns mismatch  $\rightarrow$  option to revise.

## \* EoDB

1) Reduce regulatory burden on companies.

eg ~ 18000 laws done away with, since 2014

5) Decriminalise minor issues, to improve EoDB

eg Missing documents, overshooting deadline

6) Single-window clearances, unambiguous rules.

eg Building codes, labour codes.

## Further steps needed

1) Removal of unrequired colonial laws.

eg Sedition (Sec 143A)

2) Improve contract enforcement for ↑ EoDB.

3) Compounding offences as a rule, not an exception.

Only a trust-based system of governance can truly ensure 'Amrit Kaal' for citizens and business in India.

### Feedback

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	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS

Q.2) Fluctuations in the price of TOP (tomato, onion, potato) crops impact all strata of societies. Highlighting the reasons and implications of such fluctuations, evaluate the effectiveness of Operations Greens in stabilizing the otherwise restive horticulture sector. (10 marks, 150 words)

TOP (टमाटर, प्याज, आलू) फसलों की कीमत में उतार-चढ़ाव समाज के सभी वर्गों को प्रभावित करता है। इस तरह के उतार-चढ़ाव के कारणों और निहितार्थों पर प्रकाश डालते हुए, अन्यथा अस्थिर बागवानी क्षेत्र को स्थिर करने में ऑपरेशंस ग्रीन्स की प्रभावशीलता का मूल्यांकन कीजिए। (10 अंक, 150 शब्द)

TOP (Tomato, Onion, Potato)

crops are universal consumption crops, thus fluctuations in prices affect all segments, and the poor disproportionately.

## Reasons of fluctuations

- 1) Cobweb phenomena due to lack of market knowledge.
- 2) Low shelf life  $\Rightarrow$  quick selling.
- 3) Inadequate cold storage infrastructure e.g. Singapore  $\rightarrow$  stable.
- 4) International exports or dumping..

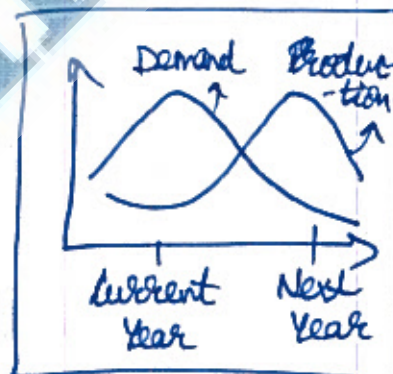


Fig 1: cobweb phenomena

## Impact of fluctuations

- 1) Hyperinflation in prices of TOP.  
e.g. Tomato prices  $\rightarrow$  ₹200/Kg  $\rightarrow$  then ₹17/Kg

- 2) Inability of poor to buy → cut down consumption.
- 3) Black marketing, hoarding → parallel economy.
- 4) Some farmers also see higher incomes.

## Effectiveness of Operation Greens

- 1) Push for cold storage and warehousing.  
↳ Stabilises prices in short term.
- 2) Price stabilisation measures → government procurement.
- 3) Subsidy and price support for horticulture

But also limitations

→ Global integration → external shocks.  
→ low yields → degraded land.  
→ climate change events.

Thus, time has come to extend Operation Greens from TOP to TOTAL (all horticultural crops) to improve farmer incomes by 2X.

### Feedback

(For OFFICE use only)

#	(C)	(A)	(P)
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Please put tick marks in the above table.

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TOTAL MARKS

Q.3) A focused and sustained promotion and pursuit of blue economy help meet the challenges of food security, national security, and climate security. Discuss. (10 marks, 150 words)

नीली अर्थव्यवस्था का एक केंद्रित और निरंतर प्रचार और अनुसरण खाद्य सुरक्षा, राष्ट्रीय सुरक्षा और जलवायु सुरक्षा की चुनौतियों से निपटने में किस प्रकार मदद कर सकता है? (10 अंक, 150 शब्द)

Blue economy is an umbrella term including inland and marine fisheries, seaweed cultivation, as well as mineral exploitation from water bodies.

[Blue economy focus to meet challenges of]:

★ Food security

- 1) Increasing fish production by new technology  
eg) Sage cultivation → 100x, seine fishing.
- 2) Better nutrition outcomes → fish and animal protein.
- 3) Increase income of farmers via mixed farming ⇒ aquaponics, fish in rice field.

★ National security

- 4) Increase exports, and earn forex reserves.  
↳ India is #1 in shrimp export.

- 5) Better nutrition  $\Rightarrow$  better demographic dividend.  
 $\hookrightarrow$  21st century as 'India's century'.
- 6) Marine seabed minerals  $\Rightarrow$  critical minerals  
 $\Rightarrow$  Polymetallic nodules  
 from Indian Deep Ocean Exploration.

## ★ Climate Security

- 7) Reduced exploitation and degradation of land.  
 $\hookrightarrow$  achieve SDG 14
- 8) Prevent risk from extreme weather events.  
 $\hookrightarrow$  Almost 52% land is rainfed [NITI]
- 9) Shift to green energy  $\rightarrow$  Hydropower  
 $\rightarrow$  Tidal and wind energy

Steps

- $\rightarrow$  PM Matsya Sampada Yojana
- $\rightarrow$  Deep Ocean Mission  $\rightarrow$  exploration
- $\rightarrow$  Improved support to coastal community

Thus, Blue economy can prove to be critical to achieve India's vision of ~~the~~ 'Global Leader in Energy'.

### Feedback

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#	G	A	P
AWIS			
CD & VA			
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Please put tick marks in the above table.

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TOTAL MARKS	
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**Q.4)** What advantages does Green Hydrogen and a hydrogen economy offer in addressing national and global concerns? Discuss the impediments in its adoption. (10 marks, 150 words)

राष्ट्रीय और वैश्विक चिंताओं को दूर करने में ग्रीन हाइड्रोजन और हाइड्रोजन अर्थव्यवस्था क्या लाभ प्रदान करती है? इसे अपनाने में आने वाली बाधाओं पर चर्चा कीजिए। (10 अंक, 150 शब्द)

Green Hydrogen refers to clean mode of production of hydrogen by electrolysis, using renewable energy to have zero carbon emissions.

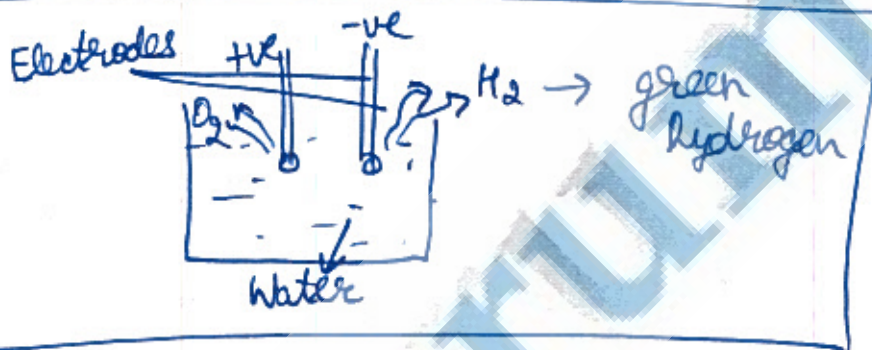


Fig 1:  
Production of green H<sub>2</sub>

Advantages of Green Hydrogen

★ National

1) Reduce India's energy imports, save forex.  
↳ Almost ₹ 14 lakh cr in oil imports. [NITI]

2) Achieving Panchamrit commitments -> COP27  
↳ Reducing C intensity by 45% till 2030.

3) Revolutionise green energy sector → Jobs  
→ FDI

★ Global

4) Help fight climate change and achieve target of 1.5°C under Paris Agreement.

5) Showcase to world potential of green energy in visible manner.

## Impediments in adoption

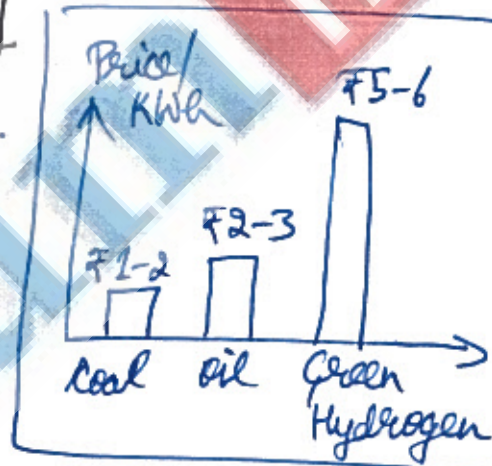
1) High cost of production.

2) Storage requirements

↳ need to be cooled till -270°C

3) No industry success yet. Fig 2: High Price.

4) Industrial lethargy → compert with fossil fuels.



## National Hydrogen Mission

under Budget 2023 to produce 5MMT of green hydrogen by 2030 is a progressive step in achieving India as 'Green Hydrogen Hub'

### Feedback

(For OFFICE use only)

	G	A	P
AWIS			
CD & VA			
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Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS

Q.5) In what ways do plastics harm human, animal, and ocean health? Bring out the various domestic and international efforts that have been put in this regard in recent times?

(10 marks, 150 words)

प्लास्टिक किस प्रकार मानव, पशु और समुद्री स्वास्थ्य को नुकसान पहुँचाता है? हाल के दिनों में इस संबंध में किए गए विभिन्न घरेलू और अंतर्राष्ट्रीय प्रयासों को उजागर कीजिए।

(10 अंक, 150 शब्द)

As per recent IPCC report, plastics present #2 risk of damage to marine life after climate change.

Micro-plastics



MOST DANGEROUS

Types of Plastics

Single Use Plastics (SUP)

Multi-layer plastics

## Harmful effects of plastics

### ★ On humans

- 1) Entering into food chain and affect health.
  - ⇒ Ingested by animals → contamination.
- 2) Pollute soil and groundwater by leaching.
  - ⇒ Chemicals like Benzene, Styrene.
- 3) Non-biodegradable ⇒ Pollute on incineration.

★ On animals

4) Ingested by animals → Internal organ failure  
→ choking

5) Disrupt marine ecosystem

eg Plastic garbage patch in Pacific

★ On ocean health

6) Affect microclimate of region → persist for long

7) Creation of 'dead zones' → lack of sunlight  
in depths.

Efforts Taken

Domestic

→ 1) Banning of SUPs in 2023.

→ 2) Promotion of alternatives  
eg Tute bag.

International

→ 3) R&D for biodegradable options  
eg Lactose polymers.

→ 4) Global collaboration to clean oceans.

Efforts to reduce plastic

pollution are necessary to achieve SDG 15:  
Protect life under water.

Feedback

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AWIS			
CD & VA			
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P & R			

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TOTAL MARKS	
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Q.6) Though spatially distributed across the length and breath of the country, incidents of cloud burst disproportionately impact the mountaneous regions. Comment (10 marks, 150 words)

हालांकि सम्पूर्ण देश में बादल फटने की घटना आम है, लेकिन बादल फटने से पर्वतीय क्षेत्रों पर प्रतिकूल प्रभाव पड़ता है। टिप्पणी कीजिए। (10 अंक, 150 शब्द)

Cloud burst refers to an extreme weather event of sudden, heavy downpour of heavy precipitation in an area.

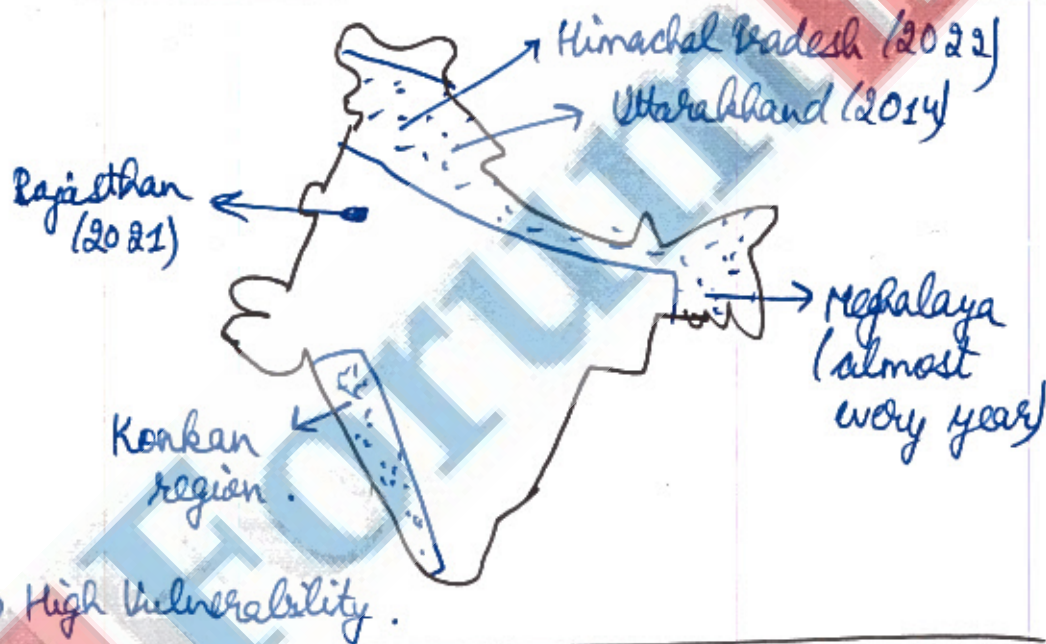


Fig 1: Spatial distribution of cloud burst.

Thus, we see that the mountainous regions bear disproportionate burden of cloud burst, due to its causative factors.

## Causative factors → Disproportionate burden

1) Sudden and heavy precipitation due to geography (orography)

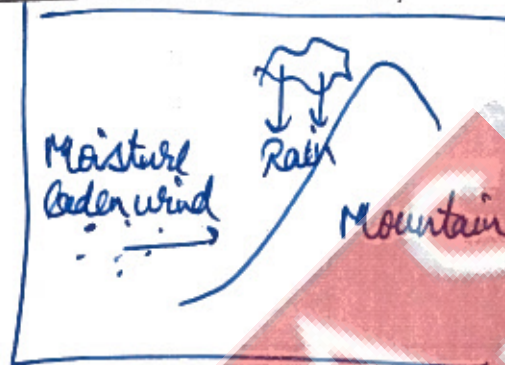


Fig 2: Orographic rainfall.

2) Land Use changes  
 ↳ Deforestation  
 ↳ Unsustainable construction

Increase vulnerability

3) Unsustainable tourism → more than carrying capacity of environment.

4) Poor socio-economic status → low income  
 ↓  
 No basic necessity support  
 ↓  
 difficult terrain.

low capacity to cope

### Steps

- 1) Afforestation, Agroforestry
- 2) Scientific construction.

Nature-based solutions and

blue-green infrastructure is necessary to reduce impact of cloud burst in mountains.

### Feedback

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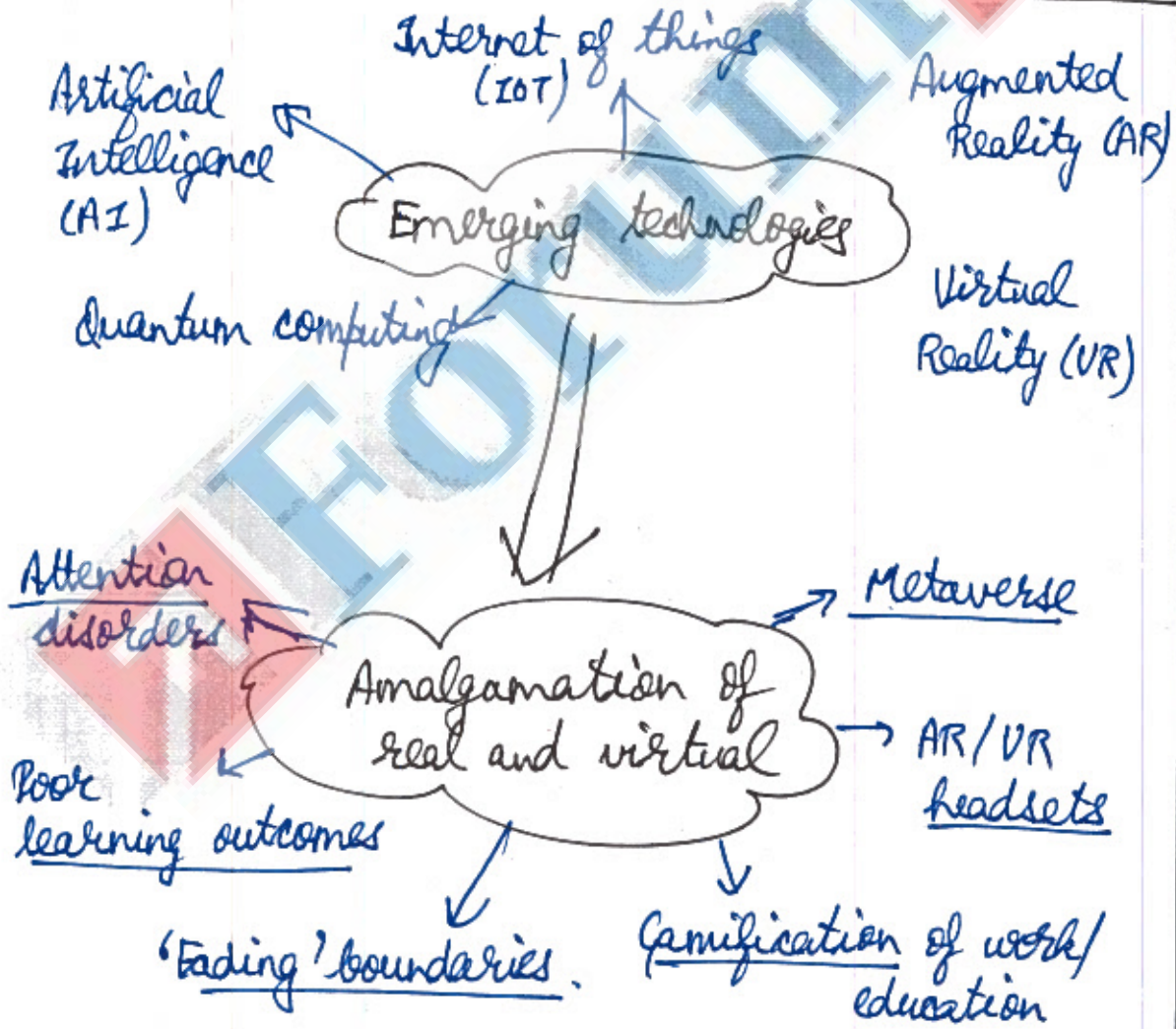
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TOTAL MARKS

Q.7) As the emerging technologies enhance their reach and extent, the amalgamation of real and virtual will become inevitable. In this perspective, discuss how metaverse will alter the lives of common man. (10 marks, 150 words)

जैसे-जैसे उभरती प्रौद्योगिकियाँ अपनी पहुंच और सीमा बढ़ाती हैं, वास्तविक और आभासी का सम्मेलन अपरिहार्य हो जाएगा। इस परिप्रेक्ष्य में, चर्चा कीजिए कि मेटावर्स आम आदमी के जीवन को कैसे बदल देगा। (10 अंक, 150 शब्द)

Metaverse refers to an emerging intersection of technology wherein multiple technologies like AR, VR, AI are synchronised to create a virtual world.



## Metaverse altering lives of common man

- 1) Alternate reality → travel anywhere you like  
 ↓  
 eliminate age/caste/money restriction
- 2) New experience of interaction with others.  
 ↓  
 ↳ virtual meet rather than physical  
 ↳ shopping online → growth of e-commerce  
 ↳ gamification of content.
- 3) Disruption of various services.  
 ↳ Movie cinemas / theatres.  
 ↳ office workspaces.

## Associated Problems

- 1) Emerging disorders → Attention Deficit  
 ↓  
 Hyperactivity Disorder (ADHD)  
 Relative deprivation → Depression → suicide.
- 2) Disorientation of real and virtual worlds.  
 As exciting as it sounds,  
 metaverse must be stepped into with proper  
regulation to hedge any potential issues

### Feedback

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S & F			
P & R			
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TOTAL MARKS			



Q.8) What makes dark matter difficult to detect? Also, analyse how the search for the elusive dark matter has influenced the trailing of modern pursuits in science. (10 marks, 150 words)

क्या कारण है कि डार्क मैटर का पता लगाना कठिन हो जाता है? साथ ही, विश्लेषण कीजिए कि मायावी डार्क मैटर की खोज ने विज्ञान में आधुनिक गतिविधियों को कैसे प्रभावित किया है। (10 अंक, 150 शब्द)

Dark matter is one of most abundant components of space matter [ $\sim 38\%$ ] and yet is elusive and difficult to detect.

Why difficult to detect

1) Dark, i.e., does not reflect light.

2) No interaction with magnetic or electric fields.

3) Has to be invertedly found.

eg) No activity here  $\rightarrow$  hence dark matter.

4) Abstract concept  $\Rightarrow$  difficult to grasp.

$\Downarrow$   
Low popularity/research.

## Influence Modern Pursuits

1) Study of origin of universe

2) Primordial substances.

eg Pillar of creation → Hubble telescope.

3) Gravitational waves study

↳ LIGO

4) Effect on expansion/contraction of universe.

Thus, study of dark matter has been an ongoing pursuit since postulated by Albert Einstein and Stephen Hawking

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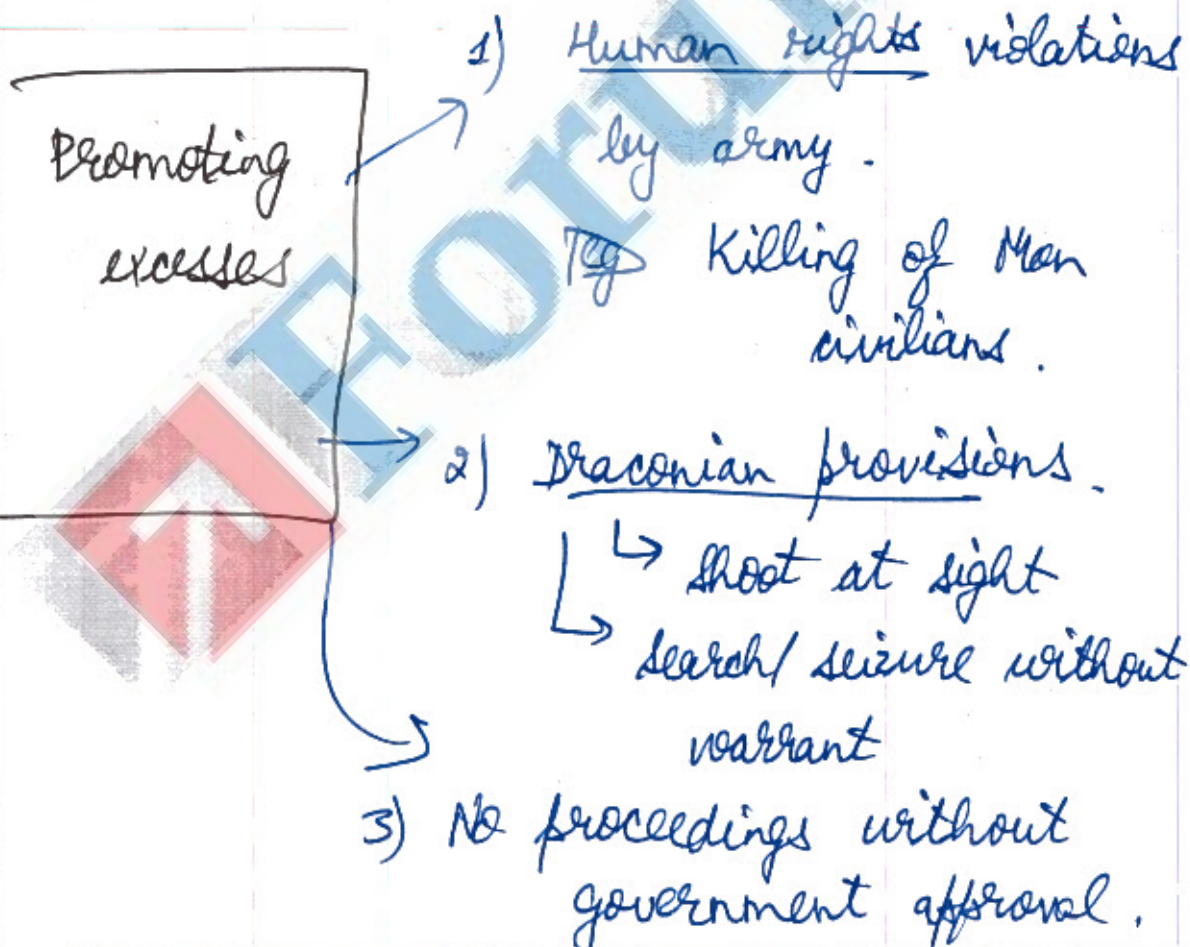
TOTAL MARKS

Q.9) While AFSPA has been criticised for promoting excesses by the security forces, its profound utility to upkeep the security situation cannot be overstated. Comment. (10 marks, 150 words)

हालाँकि सुरक्षा बलों की ज्यादातियों को बढ़ावा देने के लिए AFSPA की आलोचना की गई है, लेकिन सुरक्षा स्थिति को बनाए रखने में इसकी गहन उपयोगिता को नजरअंदाज नहीं किया जा सकता है। टिप्पणी कीजिए।

(10 अंक, 150 शब्द)

Armed Forces Special Protection Act (AFSPA) is a legal protection to security personnel working in high-risk, insurgency affected areas.



Profound utility

1) Insurgency affected areas.

Need quick decision making  
Safety of personnel.

2) National security is paramount.

Steps forward

Bezubariah Committee

- Community building measures
- Social image building
- Reduce excesses.

Several committees like 2nd ARC, have called for its repeal.

### Feedback

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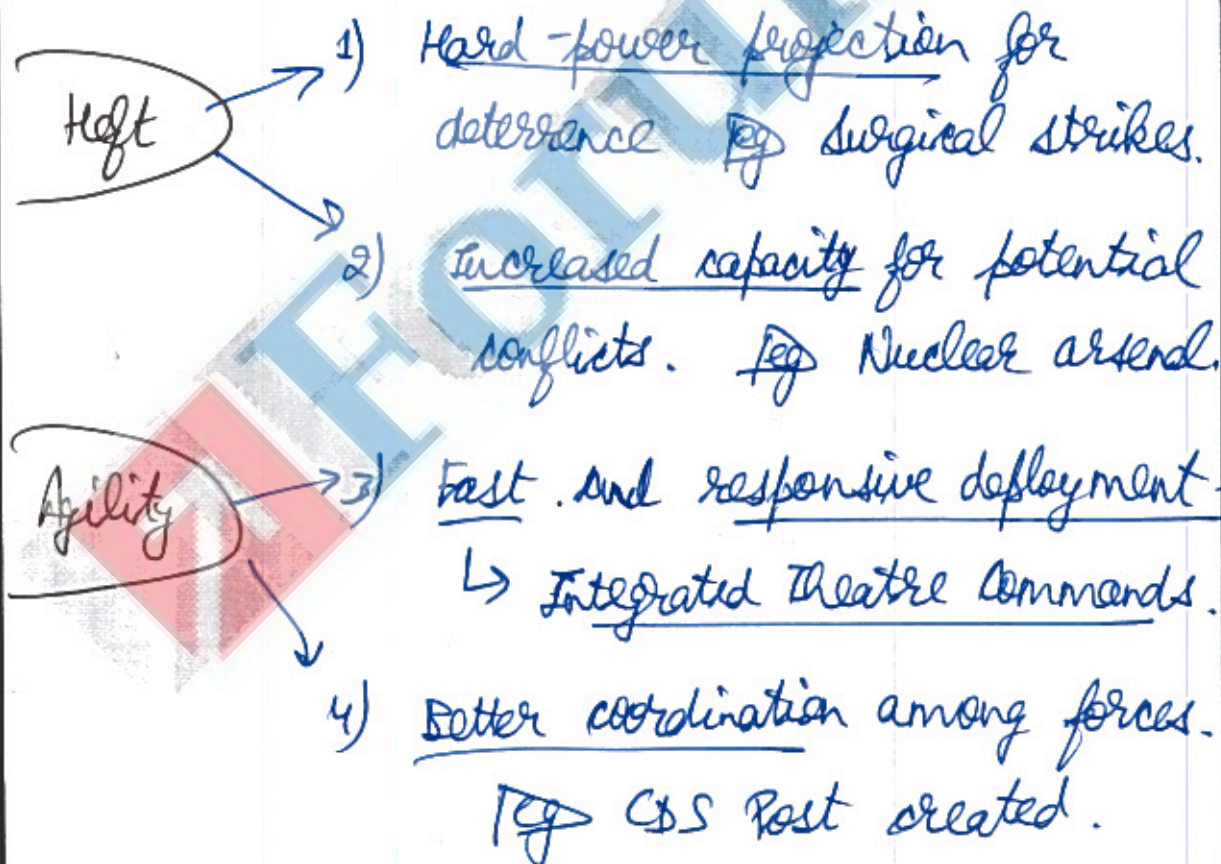
TOTAL MARKS

Q.10) Its not only the heft but also the agility, efficiency, and swiftness which will define the warfare in the contemporary times. In this context, discuss the relevance of the Agnipath scheme.  
(10 marks, 150 words)

यह न केवल अनुभव बल्कि चपलता, दक्षता और तेजी भी है जो समकालीन समय में युद्ध को परिभाषित करेगी। इस संदर्भ में अग्निपथ योजना की प्रासंगिकता पर चर्चा कीजिए।  
(10 अंक, 150 शब्द)

Changing geo-political scenario and present world order requires new kind of warfare.

New warfare



Efficiency

5) Latest weaponry  
eg S-400 from Russia.

6) Interoperability  
eg LEMOA, COMCASA

Swiftness

7) Fast deployment  
eg Tawang issue

8) Joint exercises  
eg Yudh-Abhyas → USA

Agnipath scheme

→ Improve youth profile of army

↓  
18-21 years requirement

serve nation after tenure ends.

Agnipath scheme is a progressive step towards modernisation of Armed Forces, as under Shekhar Committee.

### Feedback

(For OFFICE use only)

#	G	A	P
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Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS

Q.11) The path towards an Atmanirbhar Bharat traverses through an overhaul of industrial policies. Comment, with special reference to the Production Linked Incentive (PLI) scheme.

(15 marks, 250 words)

आत्मनिर्भर भारत की दिशा में मार्ग औद्योगिक नीतियों में व्यापक बदलाव से होकर गुजरता है। प्रोडक्शन लिंक्ड इंसेंटिव (पीएलआई) योजना के विशेष संदर्भ में टिप्पणी कीजिए।

(15 अंक, 250 शब्द)

Indian economy suffered from a unique situation of jobless growth due to direct transition from agriculture to services. Thus, robust industrial policy is needed.

## Overhaul of industrial policies

Incentivising business

1) Improve Ease of Doing Business

2) Reduce regulatory burden and achieve trust-based governance.

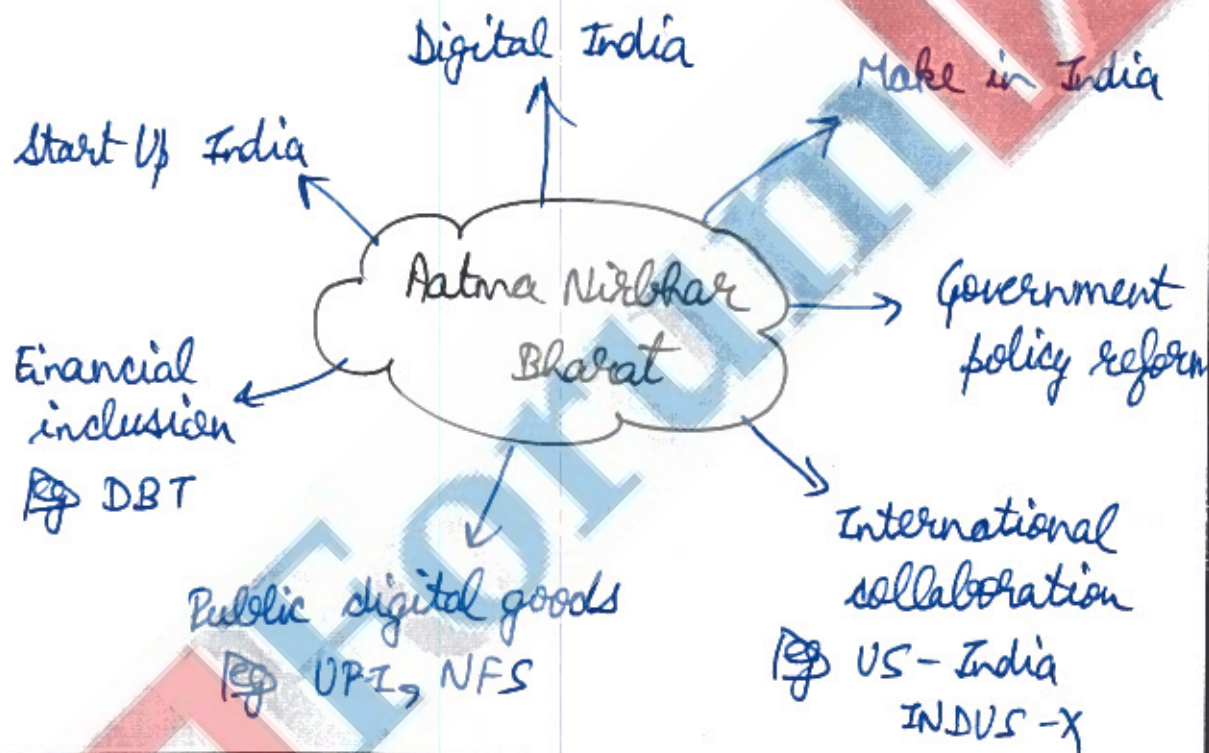
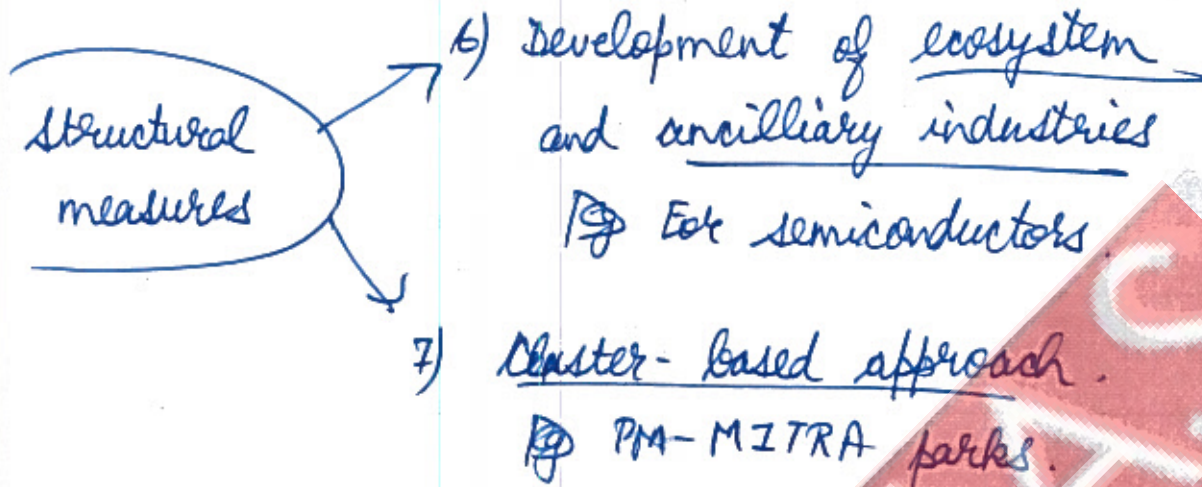
3) Government incentives for production - eg PLI scheme.

Providing employment

4) Upskilling of people to absorb people leaving agriculture.

eg PMKVY

5) Academia-industry linkages.



## Production-Linked Incentive Scheme

It is an incremental subsidy scheme to promote domestic manufacturing of certain key sectors in India.



## Benefits

- 1) Incentivise FDI inflow and greenfield asset  
 Eg New industries in textiles.
- 2) Creation of clusters and ancillary industries.
- 3) Export-led growth to increase incomes.  
 ↳ on model of 'East Asian Tigers'

## Shortcomings

- 1) Loss of revenue to government exchequer.  
 Eg SPECS → \$1bn for every fall.
- 2) Not holistic → left out several sectors.
- 3) Yet to see increased FDI inflows.

## Way Forward

There is a need to shift from band-aid solutions to whole of government approach to make share of manufacturing to GDP as 25%.

### Feedback

(For OFFICE use only)

	G	A	P
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Please put tick marks in the above table.

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TOTAL MARKS	
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Q.12) Infrastructure investments are crucial for socio-economic development, as they have a multiplier effect on economy, however, concerns for safety must not be ignored. Discuss in the light of recent events. (15 marks, 250 words)

बुनियादी ढांचे में निवेश सामाजिक-आर्थिक विकास के लिए महत्वपूर्ण है, क्योंकि उनका समाज पर गुणक प्रभाव पड़ता है, हालांकि, सुरक्षा के लिए चिंताओं को नजरअंदाज नहीं किया जाना चाहिए। हाल की घटनाओं के आलोक में चर्चा कीजिए। (15 अंक, 250 शब्द)

As per WEF Report, India needs additional \$10 trillion in infrastructure investments to pursue developed economy and maintain sustainable development.

## Importance of infrastructure investments

★ multiplier effects on economy

1) Capital expenditure has highest multiplier effect → 4.7 as per Eco survey '21.

2) Creation of hard infrastructure sets base for manufacturing & development.

3) Provides huge employment.

4) Increase income of people → increase consumption  
 ↑ virtuous cycle ↓  
Industrial growth ← increase demand

★ Socio-economic development

1) Provision of basic necessities to vulnerable.

eg PMAAY → houses to poor, women.

2) Improves FDI inflow ⇒ better economic opportunities

eg semiconductor deals → will improve entire region.

3) Development of community and region.

eg Jamshedpur → prime example.

4) Reduces social barrier → equal opportunity.

eg Urban areas → waning caste system.

Concerns for safety.

1) Hasty development ⇒ poor focus on quality.

eg Fall of Bhagalpur bridge in Bihar.

2) Lack of safety protocols for workers.

↳ Employ children, no helmets.

(Against legal provisions)

- 3) 'Race for numbers' → 'Race to the bottom'  
 eg 40km/day highway construction (2023) but saving in at various places.
- 4) No concern for wildlife safety/environment.  
 eg Tigers in Ken-Betwa interlinking.

## Steps Needed

- 1) strict development codes for buildings.  
 eg Building Promotion & Technical Council (BPTC) guidelines.
- 2) Incorporate global best practices.  
 eg Blue Dot Network certification.
- 3) Giving back to community and rehabilitation.  
 eg IARR Act 2013 → tribal displacement.

Infrastructure investments are key to drive exponential economic growth in India, and National Infrastructure Pipeline is a step in right direction.

### Feedback

(For OFFICE use only)

#	G	A	P
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Please put tick marks in the above table.

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TOTAL MARKS

Q.13) How will you explain the irony of poor adoption of millet crops despite their multifarious advantages? Also, recommend measures to curb this anomaly. (15 marks, 250 words)

आप मोटा अनाज की फसलों को उनके विविध लाभों के बावजूद खराब तरीके से अपनाने की विडंबना को कैसे समझाएंगे? इसके अलावा, इस विसंगति को रोकने के उपायों की सिफारिश कीजिए। (15 अंक, 250 शब्द)

2023 has been declared as International Year of Millets by UN-FAO.  
due to various benefits, but still adoption rates are low.

Multifarious advantages

For nutrition

- 1) Better nutrient ratios than cereals. eg More protein and fibre in ragi.
- 2) Low glycemic index → prevent obesity.
- 3) High fibre → good for gut.

For farmers

- 4) Climate hardy crop  
↳ grows in any soil and low water.
- 5) Improve farmer incomes in underdeveloped countries.  
eg African continent.

- Others
- 6) Reverse land-use degradation.  
 Eg Require low nutrients, and some replenish soil.
  - 7) Better nutrition outcomes.  
 ↳ Achieve SDG 2 - No hunger.

## Poor Adoption

- 1) Perception as 'poor person's' cereal.  
 Eg Rich people → prefer cereals.
- 2) Poor taste, texture vs traditional grains.
- 3) Lack of food processing → low recipes.
- 4) Low shelf-life → due to action of own enzymes.
- 5) Poor seed replacement rates.

Thus, irony of poor adoption is explained more so by public perception rather than resource constraints, despite multifold benefits.

Steps Taken

- 1) Branding as 'Nutri Cereals' / Shree Anna.
- 2) Millet Promotion Scheme. in Budget 2023.  
↳ seeds, credit to farmers.
- 3) collaboration with chefs for recipes.
- 4) Display at various fora → Parliament canteen  
↳ 920 meets.

Recommend Measures

- 1) comprehensive behaviour overhaul of people by → better recipes  
→ attractive branding.
- 2) Inclusion in mid-day meals etc.
- 3) Government procurement (MSP) of millets.

Millets hold key to achieve twin incentives of ~~at~~ nutrition security as well as climate objectives.

**Feedback**

(For OFFICE use only)

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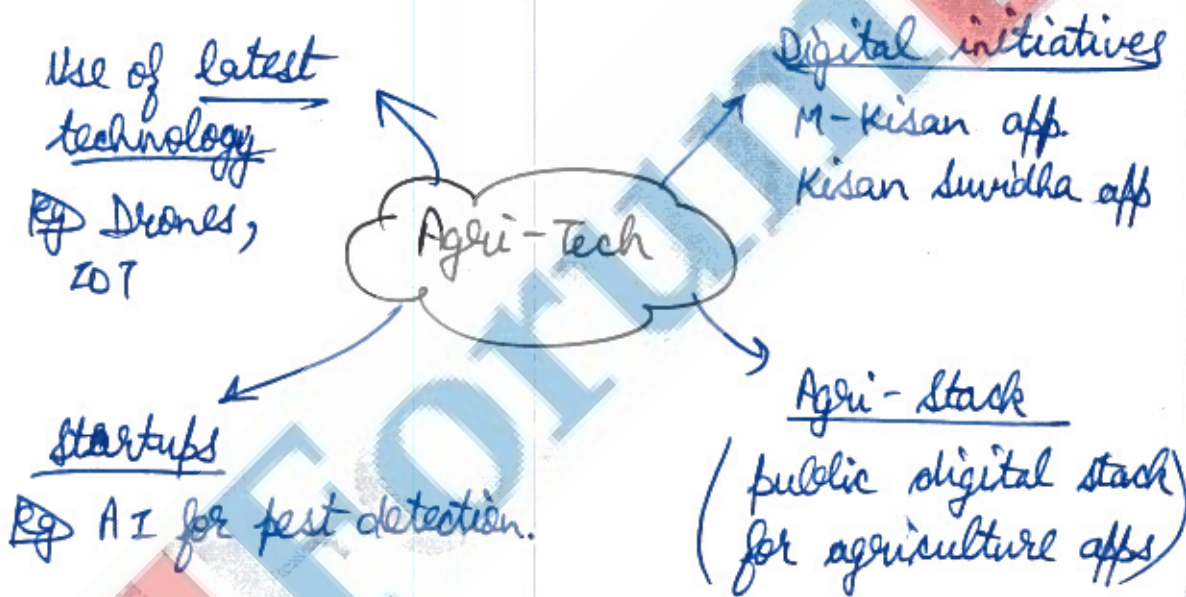
Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.14) Analyze the role Agri-tech can play in penetration of technology in agriculture. In what ways can Agri-stack help address the crisis in the farm sector. (15 marks, 250 words)

कृषि में प्रौद्योगिकी के प्रवेश में कृषि-प्रौद्योगिकी की भूमिका का विश्लेषण कीजिए। एग्रिस्टैक किस तरह से कृषि क्षेत्र में संकट का समाधान करने में मदद कर सकता है। (15 अंक, 250 शब्द)

Agri-tech is a holistic term used to refer to various technological interventions and digital initiatives for improving agricultural sector.



## Role of agri-tech in technology penetration

- 1) Improve digital literacy of farmers.  
 Eg JAM trinity push has increased banking penetration.

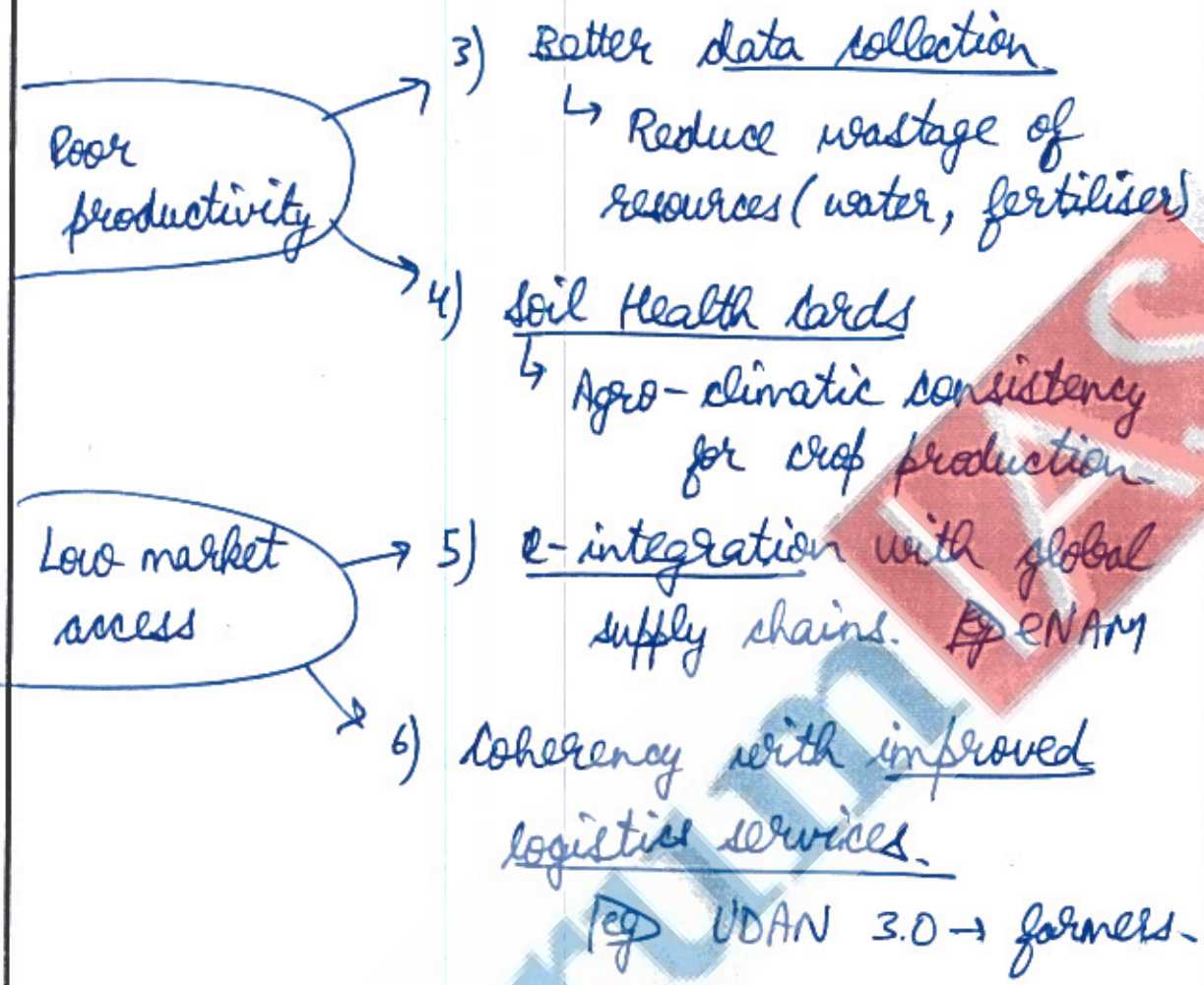


- 2) Create infrastructure for future agri-preneurs.  
 ↳ open application interface to develop apps.
- 3) Better data collection → target benefit delivery.  
 ↳ DBT transfers under PM-KISAN.
- 4) 'Crowd-in' of private sector to improve efficiency in processes.  
 ↳ eNAM → link with Agri Index on stock market.

## Role of Agri stack to address farm crisis

low farmer income

- 1) Better market information about demand.  
 ↳ Prevent cobweb phenomena.
- 2) Digital interventions towards precision agriculture.  
 ↳ Reduce input cost (fertilisers).



- Steps Taken**
- 1) Agriculture Infrastructure Fund.
  - 2) PM Sampada scheme.
  - 3) Agri Accelerator Fund → for startups
  - 4) Digital push for efficiency

Agri-tech, through AgriStack can bring about a revolution in agriculture sector, like India Stack did with UPI in financial sector.

### Feedback

(For OFFICE use only)

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Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.15) The objective of an inclusive clean energy transition will remain incomplete without leveraging the potential of the biofuels. Enumerating the seminal provisions of the National Biofuel Policy, analyze the possible challenges in its smooth implementation. (15 marks, 250 words)

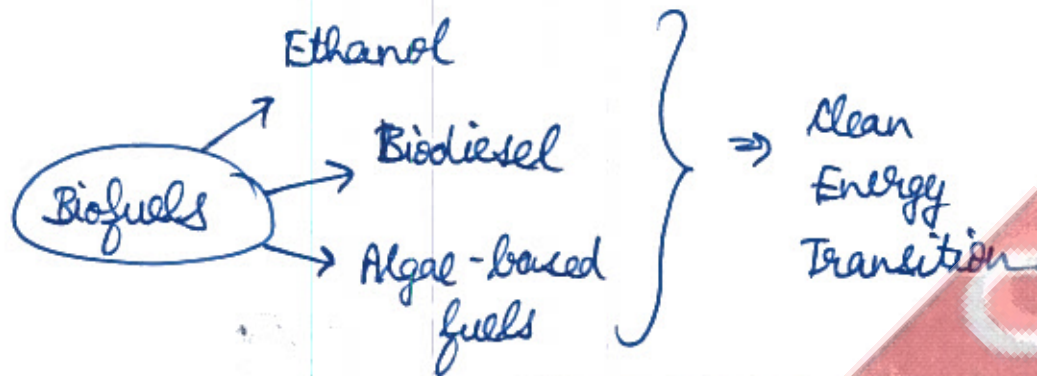
जैव ईंधन की क्षमता का लाभ उठाए बिना समावेशी स्वच्छ ऊर्जा परिवर्तन का उद्देश्य अधूरा रहेगा। राष्ट्रीय जैव ईंधन नीति के मौलिक प्रावधानों की गणना करते हुए इसके सुचारु कार्यान्वयन में संभावित चुनौतियों का विश्लेषण कीजिए।

(15 अंक, 250 शब्द)

As per India's Paris Agreement commitments, India plans to have at least 500 GW of non-fossil fuel energy by 2030. Bio-fuels will play an important role in it.

## Potential of Bio-fuels.

- 1) Better alternative to oil-based fuels.  
 ↳ E20 in place of petrol (by 2025)
- 2) Pillar to circular economy, and waste to wealth → produce from food wastes.  
 ↳ Food wastage in India ~ ₹10 Lk cr.
- 3) Wide industrial applications.  
 ↳ Automobiles  
 ↳ Lubricants, machine oils  
 ↳ Heavy good transport ↳ Railways.



## National Biofuels Policy → Provisions

1) It envisages a 4-stage bio-fuel transition:

Stage 1 ○ From cereals or food crops  
 Eg Rice, maize

Stage 2 ○ From food wastes and cash crops.  
 Eg Cassava.

Stage 3 ○ From algal using other materials.  
 Eg Sludge, algae.

Stage 4 ○ Make Carbon negative using algae.  
 Eg Alfa Alfa.

2) Provides government support for production.

3) Sets target for implementation.

Eg E20 compliant by 2025.

Challenges in implementation

- 1) Need to balance food security and energy security → still at stage 1/2
- 2) Poor technology and R&D ecosystem.
- 3) Lack of funding and FDI.
- 4) Low skilled human resource.



1) Private sector participation.  
 Eg Recently unveiled Toyota Innova on E20.

2) GOBAR Dhan scheme → production of bio-fuels for waste.

3) Decentralised production → rural livelihood and economy.

Government initiatives like PM-JIVAN are step in the right direction to popularise biofuels.

**Feedback**

(For OFFICE use only)

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Please put tick marks in the above table.  
 Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.16) Despite having a robust legal architecture in the form of Disaster Management Act, 2005, a coordinated on ground response to disaster remains in a state of want. Comment.

(15 marks, 250 words)

आपदा प्रबंधन अधिनियम, 2005 के रूप में एक मजबूत कानूनी संरचना होने के बावजूद, आपदा के लिए जमीनी स्तर पर समन्वित प्रतिक्रिया अभाव की स्थिति में है। टिप्पणी कीजिए।

(15 अंक, 250 शब्द)

Disaster is any hazard of situation creating loss of human life, infrastructure, economy where impact exceeds ability of community to cope.

## Disaster Management Legal Architecture

### Disaster Management Act 2005

National Executive Council (NEC)

National Disaster Management Authority (NDMA)

State DMA

District DMA

National Disaster Response Force (NDRF)

Other Provisions

Creation of National Disaster Response Fund, and at State.

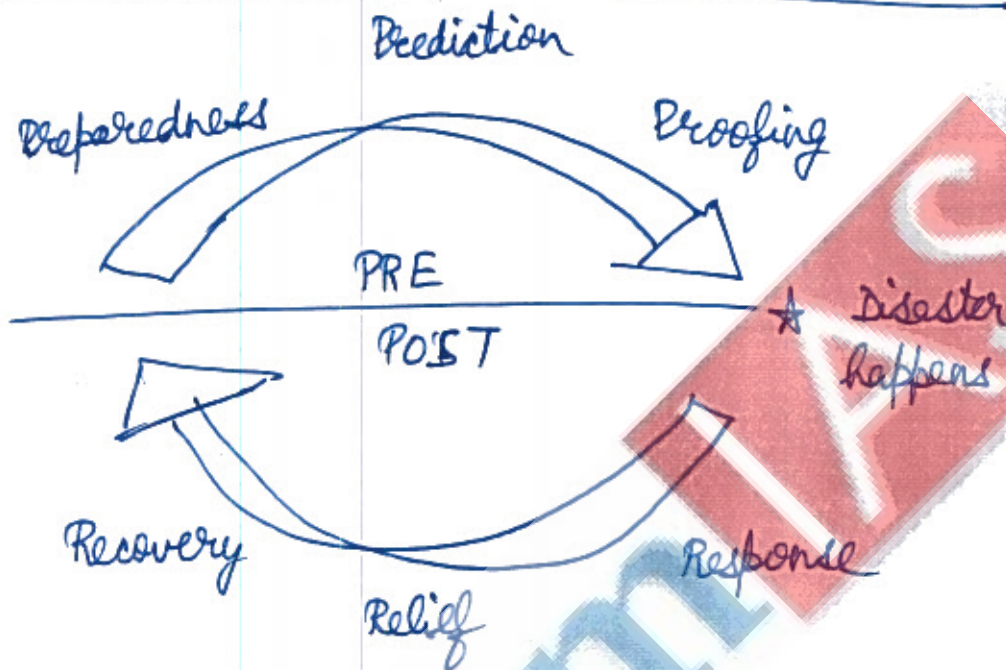
Fixing responsibility, and SOPs

Issues in coordinated ground response

- 1) Disaster Management under Union List, but States are first responders.
- 2) One-size-fits-all approach instead of localized approach.
- 3) Lack of funds and training with NDRF.
- 4) Centre-State coordination issues.
- 5) Changing forms of disaster due to climate change
  - Delhi flooding
  - ↳ Uttarakhand landslides.

(due to extreme weather events)

## Steps Needed



- 1) Move from Disaster Response to Disaster Reduction (3R to 3P)
- 2) Implementing Sandai Framework for Disaster Risk Reduction (DRR)
- 3) Community-level solutions by training, escape routes, structural measures.

Following National Disaster Management Guidelines, 2016 in letter and spirit is need of hour.

### Feedback

(For OFFICE use only)

#	G	A	P
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Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS



Q.17) With suitable examples, throw light upon the use of disruptive technologies like Big Data and Artificial Intelligence (AI) in enhancing the service delivery component of good governance.

(15 marks, 250 words)

उपयुक्त उदाहरणों के साथ, सुशासन के सेवा वितरण घटक को बढ़ाने में बिग डेटा और आर्टिफिशियल इंटेलिजेंस (एआई) जैसी विघटनकारी प्रौद्योगिकियों के उपयोग पर प्रकाश डालिए। (15 अंक, 250 शब्द)

In today Digital Era of 21<sup>st</sup> century, rise of disruptive technologies all around us have made it impossible to avoid them from use in Good Governance.

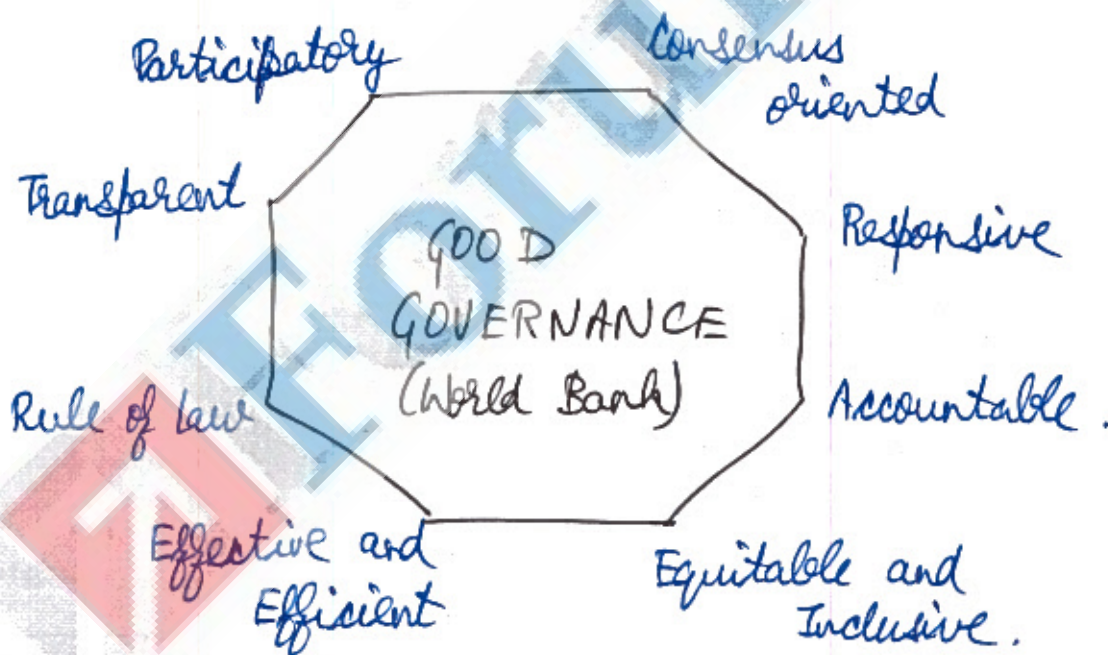


Fig 1: Good Governance → Components.

Technologies like AI and Big Data ensure several of these.

## Role of disruptive technologies

★ Big Data → collection and processing of large data to automate tasks and pre-empt problems.

### Contribution

- 1) Better data collection → scientific policy making
- 2) Optimise resource flows  
↳ Reduce wastage, improve quality.
- 3) Feedback systems → constantly improve
- 4) Improve speed and efficiency of public service.

★ Artificial Intelligence → Training computers to think and act like human intelligence.

### Contribution

- 1) Automate tasks to reduce human error.  
↳ Inclusion and exclusion.

- 2) Faster services  
eg Better land record management
- 3) Improve transparency due to digital traceability. eg Blockchain
- 4) More equitable and inclusive.  
eg Can be trained to ensure gender pay parity.

Issues

- 1) Inherent algorithmic bias.  
eg Against Blacks/women.
- 2) Issue of privacy and hacking.  
eg Aadhar Data Leak 2018
- 3) Loss of employment  
↳ NEE → 70 mn by 2030.

Efficient regulation and international best practices like GDPR of EU are essential to improve adoption and legitimacy.

**Feedback**

(For OFFICE use only)

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Please put tick marks in the above table.  
Here G is Good, A is Average and P is Poor.

TOTAL MARKS	
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Q.18) Trace the evolution of Indian Space Research Organization (ISRO) from its humble beginnings as the space agency of the government to becoming a technology behemoth, spearheading innovations with respect to satellites, launch vehicles, and planetary explorations.

(15 marks, 250 words)

भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) के सरकार की अंतरिक्ष एजेंसी के रूप में मामूली शुरुआत से लेकर प्रौद्योगिकी दिग्गज बनने तक, उपग्रहों, प्रक्षेपण वाहनों और ग्रहों की खोज के संबंध में नवाचारों का नेतृत्व करने तक के विकास का अन्वेषण कीजिए।

(15 अंक, 250 शब्द)

Indian Space Research Organisation (ISRO) is the premier government agency in field of space research, exploration, and missions.

## Evolution

Humble beginnings

- 1) Started as a small agency under Department of Space.
- 2) Low funding, high regulations  
 ↳ Carry satellite on cycle!
- 3) Challenge due to nation's priority to improve food security, jobs.  
 NOT space exploration.

Technology Behemoth

- 4) Able leaders like Vikram Sarabhai, Nambi Narayan, K. Sivan, S. Somnath.
- 5) Achieved almost all feats as NASA/ESA, at much less cost.

Role in spearheading innovations

Satellites

- 1) 1<sup>st</sup> satellite → Aryabhata.  
(in association with Russia)
- 2) For earth observation → EOS-1/2.  
navigation → IRNSS/NavIC  
security → GSAT 9B (navy)
- 3) Plan of space missions.  
(Gaganyaan → manned mission)

Launch vehicles

- 4) Versatile launch vehicles.  
eg PSLV Mk III → LEO  
→ geostationary.
- 5) Commercial operations.  
eg launching 100 satellites in one go!

Planetary explorations

6) Mission to moon

eg Recent Chandrayaan 3

↳ 1st to achieve soft landing on South Pole.

7) Mars Mission → in 1st attempt.

8) Recent Aditya L1 Mission (seen)

Further steps needed

1) Better collaboration with global agencies.

eg NASA - ISRO → NISAR satellite.

2) Improved funding and government support.

eg Chandrayaan 3 → only ₹635 cr (NASA → 10X cost)

3) Better curriculum for aeronautics/space.

↳ Better human resource.

It is without a doubt that ISRO has catalyzed the scientific rigour in whole of India towards 'Vishwaguru India'

### Feedback

(For OFFICE use only)

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TOTAL MARKS

Q.19) In what ways has Drug trafficking taken new forms and new routes in recent years. Elucidate the steps taken by the govt in this regard, with special reference to Operation Samudragupta. (15 marks, 250 words)

हाल के वर्षों में नशीले पदार्थों की तस्करी ने किस तरह से नए रूप और नए रास्ते अपनाए हैं। ऑपरेशन समुद्रगुप्त के विशेष संदर्भ में, इस संबंध में सरकार द्वारा उठाए गए कदमों को स्पष्ट कीजिए। (15 अंक, 250 शब्द)

As per UNODC, India is home of largest increase in drug trafficking due to geographical proximity with major growing regions.

Traditional Reasons for Drug Trafficking

Proximity to golden crescent and golden triangle

Rising domestic demand due to:

- large youth
- Westernisation



Fig 1: Geography

## Evolution of Drug Trafficking

Rise of narcotics related cases, especially in Punjab and Haryana is a major cause of worry.

- New Forms**
- 1) Smuggling along with medical cannabis → later misutilised.
  - 2) Home-grown plants in North-East  
↳ increased due to Myanmar insurgency and refugee inflow
  - 3) Rise in rave parties (gga etc)  
↳ In food/drinks.  
↳ Easy availability.  
eg. Aryan Khan case.

- New routes**
- 1) Utilisation of open borders with Nepal and Bhutan.
  - 2) Other routes





Steps Taken by Government

- Legal and Institutional** →

  - 1) Narcotics Control Bureau  
↳ lead / nodal agency.
  - 2) Decriminalising small amounts of drugs found
- Others** →

  - 3) Frequent raids on illegal shops / distributors.
  - 4) Shelter and rehabilitation homes for addicts. eg Punjab.
  - 5) Awareness campaigns.  
eg Nalla Mukti Abhiyaan.

Thus, a 'zero tolerance Policy' is required to get rid of this creeping disaster of drug menace of India, to utilise Youth Power under Saptarishi targets.

**Feedback**

(For OFFICE use only)

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Please put tick marks in the above table.  
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TOTAL MARKS	
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Q.20) Why does the North East remain a hotbed of insurgency? With special emphasis on government measures, discuss the steps to ameliorate the situation. (15 marks, 250 words)

पूर्वांचल उग्रवाद का केंद्र क्यों बना हुआ है? सरकारी उपायों पर विशेष जोर देते हुए स्थिति सुधारने के कदमों पर चर्चा कीजिए। (15 अंक, 250 शब्द)

North-East is a unique part of India with surplus of land, water, natural resources; but deficit of governance, development, and employment.

North-East as hotbed of insurgency

Governance Issues

1) lack of infrastructure development since 75 yrs of independence.

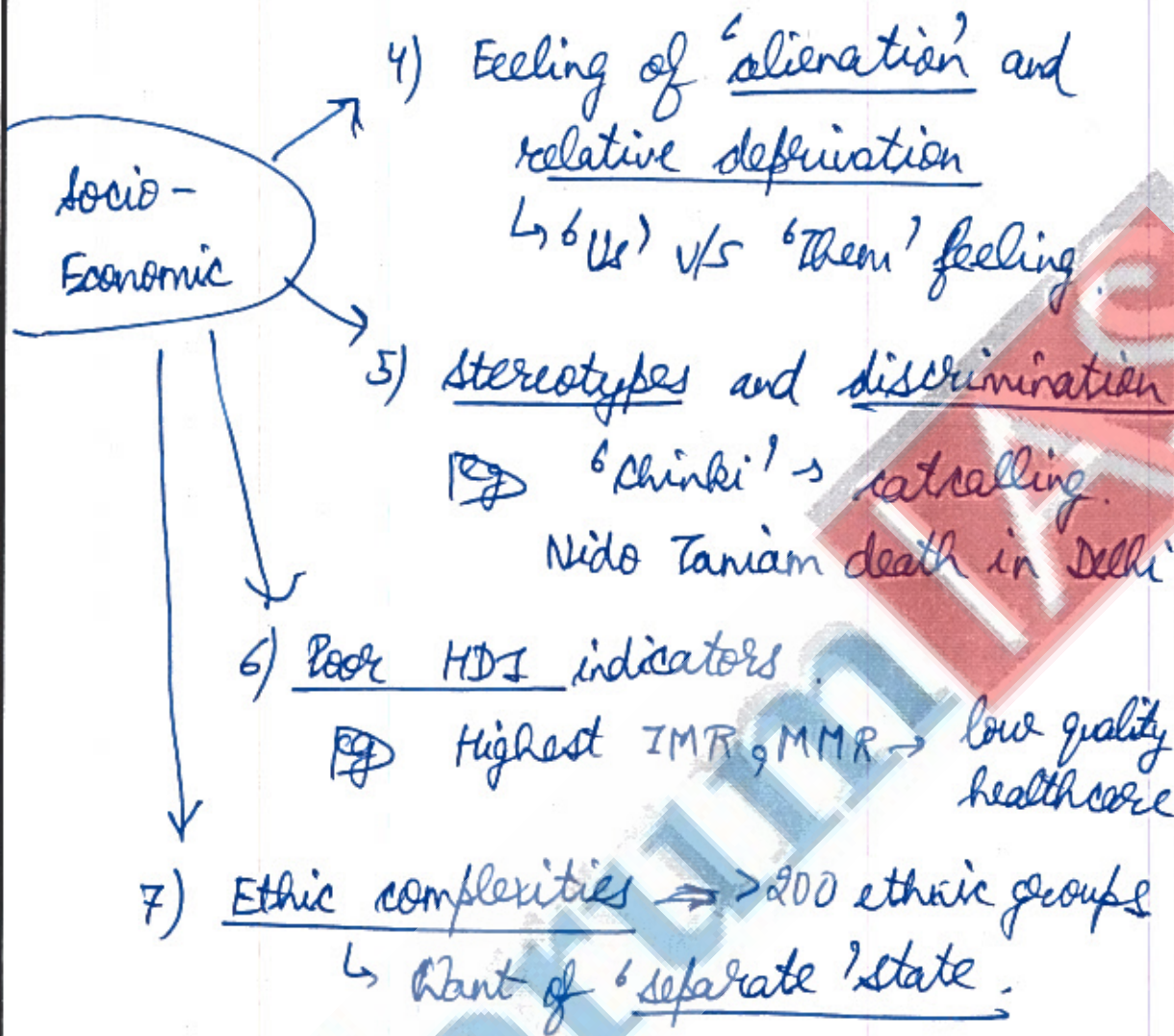
eg) Tripura capital only recently got railway!

2) Alienation from developmental benefits, since long.

eg) Poor jobs → migration.

3) Bureaucratic apathy and unwillingness

↳ Armchair bureaucracy.



Government Measures

- 1) Peace accords with various insurgent groups.  
eg Bodo Peace Accord  
Naga Peace Accord  
↓  
with NSCN (IM)

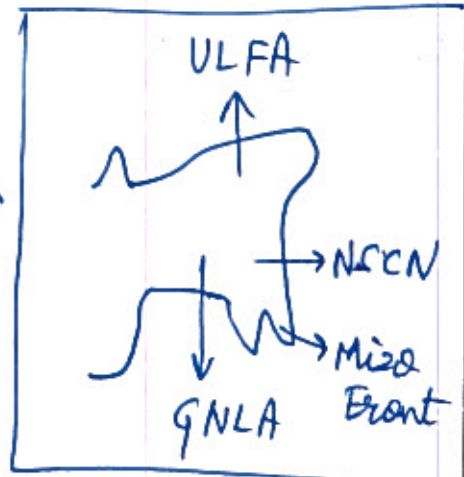


Fig 1: Insurgent group

- 2) Strategy of 'Winning Hearts & Minds'.  
 ↳ Governance + Cultural integration.  
 eg Youth exchange programmes.
- 3) Rapid infrastructure development.  
 eg PM DeVINE scheme, development of NER  
 ↳ Bogibel Bridge.
- 4) Providing amenities and good governance.

4) Safeguarding borders.

eg Integrated and Comprehensive Border Management System (ICBMS)

2) Infrastructure and governance deficit needs to be filled.

3) Train own people → Nehru's Banchsheel

North East is an inalienable part of India, and it is high time that their isolation from "mainland" is reduced.

Steps Required

### Feedback

(For OFFICE use only)

#	G	A	P
AWIS			
CD & VA			
S & F			
P & R			

Please put tick marks in the above table.

Here G is Good, A is Average and P is Poor.

TOTAL MARKS

**Mentor Feedback Questions**

- 1 .....
- 2 .....
- 3 .....
- 4 .....
- 5 .....

**Test Goal**

**Outcomes**

- |         |                          |       |
|---------|--------------------------|-------|
| 1 ..... | <input type="checkbox"/> | ..... |
| .....   |                          | ..... |
| 2 ..... | <input type="checkbox"/> | ..... |
| .....   |                          | ..... |
| 3 ..... | <input type="checkbox"/> | ..... |
| .....   |                          | ..... |

**Marking Scheme**

Mark	Good	Average	Below average
<b>10 Marker</b>	3.75 - 5.0	3.0 - 3.5	< 3.0
<b>15 Marker</b>	5.75 - 7.0	4.0 - 5.5	< 4.0
<b>20 Marker</b>	7.75 - 10	6 - 7.5	< 6
<b>✓✓</b>	<b>Key / Relevant Point</b>		
<b>✗</b>	<b>Vague / Irrelevant</b>		

\* Subject to change without prior notice.

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