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Name of Candidate : SHIVAM

Roll No. : PTTP221000

Registration Number : ..... Date of Examination : .....

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

**Test - 7** **Code : TC077**

# MTS IGP Batch 2023

## GENERAL INSTRUCTIONS

**This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the 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.**

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**Question paper will be provided separately and can be taken by the candidates after conclusion of the exam.**

.....

SUBJECT/PAPER
GENERAL STUDIES III

**Invigilator's Sign. :** .....

*(For filling by Examiners only)*

**Evaluator Code :**

| Q.No | Pg No. | Maximum Marks | Marks | Total |
|---|---|---|---|---|
| 1 | 1 | | | |
| 2 | 3 | | | |
| 3 | 5 | | | |
| 4 | 7 | | | |
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| 14 | 30 | | | |
| 15 | 33 | | | |
| 16 | 36 | | | |
| 17 | 39 | | | |
| 18 | 42 | | | |
| 19 | 45 | | | |
| 20 | 48 | | | |
| Grand Total | | | | |

**Signature**

## MACRO COMMENTS

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2. Write your registration number and other particulars, in the space provided on the cover of QCA Booklet.
3. Write legibly and neatly. Do not write in bad/illegible handwritings.
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.
6. Handover your QCA Booklet personally to the invigilator before leaving the examination hall.

Candidates must write on this mar

1. भुगतान संतुलन (बीओपी) के घटकों के रूप में पूँजी खाते और चालू खाते के बीच अंतर का सविस्तार वर्णन कीजिए। भारत के बीओपी घाटे को संतुलित करने के लिए कुछ उपाय सुझाएँ। (150 शब्दों में उत्तर दीजिए) 10 अंक

Elaborate on the difference between Capital Account and Current Account as components of Balance of Payment (BOP). Suggest a few measures to balance the BOP deficit of India. (Answer in 150 words) 10 Marks

**Balance of Payment** refers to the difference between import and export of a country in goods and services as well as investments.

**Difference between:**

| Capital Account | Current Account |
|---|---|
| Accounts investment; eg FPIs, FDIs etc. | Balance of trade in goods and services. eg Merchandise, Software as a service etc. |
| Creates liability or assets | Doesn't create |
| Increased/Decreases future productivity of economy. | Shows the current productivity of economy |

Candidates must not write on this margin

**Measures to balance BOP deficit in India**

**Imbalance**: high current account deficit and Capital Account surplus.

1. New Trade Policy: shift from incentives to tax remission a positive step.
2. Ease of Doing Business in spirit of Atmanirbhar Bharat
3. Increasing productivity of Economy through Gross Fixed Capital formation
4. Building capabilities: Upskilling of labour force and female labour force participation increase (only 17%)
5. Boost Exports: One district One product approach etc.
6. Integrating supply chain and reducing logistics cost

With balanced BOP, India will be able to achieve target of 3rd biggest economy..

2. लॉजिस्टिक्स (रसद) क्षेत्र, विनिर्माण उद्योग के विकास के महत्त्वपूर्ण घटकों में से एक है। चर्चा कीजिए। साथ ही, हाल ही में घोषित राष्ट्रीय लॉजिस्टिक्स नीति, 2022 के विभिन्न घटकों का भी उल्लेख कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The logistics sector is one of the important components of the growth of the manufacturing industry. Discuss. Also, mention various components of the recently announced National Logistics Policy 2022.

(Answer in 150 words) 10 Marks

Logistics cost in India is considered to be higher than that of developed economies due to inefficient transportation, lack of connectivity infrastructure (road, rail) etc.

logistic sector as important component of manufacturing industry

① Connects the value chain from manufacturer to consumer.

② Reduced logistic cost leads to reduced cost of product and increased demand.

③ • Efficient logistics boosts investment in sector.

Candidates must not write on this margin

In view of the highest ever capital expenditure of 10 lakh crores in Budget 2023-24,

**National logistics Policy 2022 components**

① Development of multi-modal connectivity.

② Developing Inland Water Transport through National Waterways

③ Improving Last Mile Infrastructure and connectivity
- eg) Sagarmala and Bharatmala Pariyojana.

④ Reducing time taken by rail transport
- eg) ⑤ Dedicated Freight corridors etc.

Thus, efficient logistic sector can be a big boost to Indian economy and can improve the investment ecosystem also.

3. डब्ल्यूटीओ के तहत मत्स्य पालन सब्सिडी पर नए समझौते पर भारत का क्या रुख है? भारत के लिए मत्स्यपालन क्षेत्र किस प्रकार महत्त्वपूर्ण है? इस क्षेत्र के विकास के लिए सरकार द्वारा उठाए गए कदमों का उल्लेख कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

What is India's stand on the New Agreement on Fisheries Subsidies under WTO? How is the Fisheries sector significant for India? Enumerate the steps taken by the Government to develop this sector.
(Answer in 150 words) 10 Marks

New agreement on fisheries subsidies under WTO envisages the discontinuation of unsustainable fisheries subsidies and banning illegally unreported unregulated (IUU) fishing.

**India's stand**: India has been reluctant to support these efforts. But support gradual phase down.

**Significance of fisheries sector**

① More than 7000 km long coastline and inland fisheries provides :-
① Livelihoods to fisherfolk.
② Food security of country.

Candidates must not write on this margin

③ Export Income for country
eg) Shrimps etc.

④ Nutritional Security of country

⑤ Food Processing sector of fisheries can solve agricultural distress and provide employment.

**Government efforts**

- PM Matsaya Sampada Yojana
- Sagar Mitras to assist in extension services.
- PM formalisation of micro-food processing enterprises.
- Agriculture Infrastructure Fund.

Fisheries sector have immense potential to boost exports and employment generation. Need of the hour is sustainable fishing.

4. उन प्रणालीगत और संस्थागत बाधाओं का विश्लेषण कीजिए जो भारत में भूमि सुधार प्रयासों में बाधा बनी हुई हैं और भूमि के न्यायसंगत वितरण को सुनिश्चित करने के लिए व्यावहारिक समाधान प्रस्तावित कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

Analyze the systemic and institutional constraints that continue to hinder land reform efforts in India and propose pragmatic solutions to ensure equitable distribution of land.

(Answer in 150 words) 10 Marks

Land reform efforts began after independence to provide social Justice to landless and poor farmers.

**Systemic Constraints**

① Judicial review of land reform laws
eg: IR Coelho case : schedule 9 Justiciable

② Land lords - Bureaucratic nexus preventing reforms.

③ Benami properties and diversion of land.

**Institutional Constraints**

① lack of coherent policy and political will.

② red-tapism and corruption.

Candidates must not write on this margin

③ Small landholdings proving unviable for technology integration and economies of scale. (86% small and medium)

**Pragmatic solutions**

① Promoting cooperative farming, agri-clusters and food processing organisations (FPOs)

② Create land banks for public and leasing to farmers.

③ Promote Contract farming.

④ Digitisation of land records eg SVAMITVA scheme.

⑤ Evergreen revolution as per Swaminathan commission.

To achieve goal of Doubling farmer's income, Ashok Dalwai committee has recommended an effective land use policy.

5. ब्रह्मोस सुपरसोनिक क्रूज मिसाइल की अद्वितीय विशेषताएँ और क्षमताएँ क्या हैं,और इसने भारत की रक्षा क्षमताओं और सामरिक स्थिति के क्षेत्र में किस प्रकार योगदान दिया है? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the unique features and capabilities of the BrahMos supersonic cruise missile, and how has it contributed to India's defence capabilities and strategic position in the region?
(Answer in 150 words) 10 Marks

BrahMos missile has been developed by a joint venture between Russian and Indian agencies.

Features and Capabilities

① Can hit target with accuracy. vis-a-vis Inter-continental Ballistic Missile.

② Range extendable to 1000 km.

③ Supersonic speed i.e. between 3 to 5 Mach.

④ Can be used from land, air or water.

⑤ Nuclear warhead capabilities.

Candidates must not write on this margin

## Contribution of BrahMos to :-

- Defence Capabilities
  - → Indigenisation of Defence equipments
  - → SIPRI : Highest importer
  - → Reducing dependence of exports
  - → Step in direction of hyper-sonic missiles.
- Strategic position
  - → Geopolitical strength
    - eg) can target accurately
  - → Exports of defence
    - eg) recently Philippines pressed
  - → Net Security Provider role in Indo-Pacific.
  - → Countering adversaries and showing capability of developing sophisticated technology

BrahMos has been a successful and glorious depiction of Indian defence achievements, its learning should be extended to other sectors also.

6. समुद्र की गहराई का पता लगाने और उसमें मौजूद संसाधनों का दोहन करने के देश के प्रयासों के अनुरूप, भारत सरकार ने गहरे समुद्र में अन्वेषण मिशन 'समुद्रयान' का प्रस्ताव रखा है। यह मिशन देश में समुद्र विज्ञान और प्रौद्योगिकी की प्रगति में किस प्रकार योगदान दे सकता है? (150 शब्दों में उत्तर दीजिए) 10 अंक

In line with the country's efforts to explore the depths of the ocean and harness the resources it holds, the Indian government has proposed a deep-sea exploration mission Samudrayaan. How can this mission contribute to the advancement of ocean science and technology in the country?
(Answer in 150 words) 10 Marks

Samudrayaan mission envisages the exploration of ocean bottom relief for purposes of mineral exploration etc.

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Contributions (Possible) of Samudrayaan for ocean science and tech.

---

① Deep Sea Mining : Poly-metallic Nodules at Abyssal plain can be mined with suitable tech.

② Tourism potential of ocean bottom.

③ Health : Ocean biodiversity might give solution to diseases.

④ Defence : development of submersibles and submarines.

Candidates must not write on this margin

⑤ Research and development related to submersibles under immense pressure.

⑥ Material sciences : Unique materials are required to withstand pressure

## Challenges in Mission

① Human lives can be in danger.
eg) Recent Titanic submersible tragedy.

② Difficult to build materials that can withstand such pressure.

③ Uncertainty on organisms at bottom plane.

④ Deep sea mining still unviable

Only a few countries have capability of deep sea exploration and India can be first few to show this capability, thus the mission holds importance for us.

7. वैश्विक मीथेन प्रतिज्ञा क्या है? क्या आपको लगता है कि वैश्विक मीथेन प्रतिज्ञा मीथेन उत्सर्जन को कम करने की दिशा में एक सकारात्मक कदम है? इस मुद्दे पर भारत का रुख स्पष्ट कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

What is Global Methane Pledge? Do you think the Global Methane Pledge is a positive step toward mitigating methane emissions? Explain India's stance on this issue. (Answer in 150 words) 10 Marks

Global Methane Pledge refers to efforts of countries to reduce Methane emission from anthropogenic sources. COP26 outcome

eg Paddy fields, Animal husbandry, industries etc.

Global Methane Pledge

Positive step

① Methane → short term pollutant can be controlled effectively.

② Methane → High Global Warming Potential

↳ can lead to faster results.

③ Point source emissions of methane ⇒ easier to reduce.

Candidates must not write on this margin

## limitations

① Might hamper food and nutritional security.

② Large population dependent on agriculture ⇒ loss of livelihoods

eg India: 70% of population and 43% of labour force.

③ Should be supplemented with CCUS (carbon capture utilisation and storage) tech.

**Indian Stance** → reluctant to join efforts due to above-mentioned reasons.

Global Methane Pledge have right intentions to reduce Global warming but have danger to be against the climate Equity or Justice.

Q. कोविड–19 महामारी ने सार्वजनिक स्वास्थ्य में आपदा प्रबंधन के महत्त्व पर प्रकाश डाला है। महामारी और अन्य संक्रामक रोग के प्रकोप के प्रबंधन के लिए प्रमुख रणनीतियों और चुनौतियों पर चर्चा कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

The COVID-19 pandemic has highlighted the importance of disaster management in public health. Discuss the key strategies and challenges for managing pandemics and other infectious disease outbreaks.
(Answer in 150 words) 10 Marks

COVID-19 pandemic imposed very unique challenges in terms of disaster management which were hitherto unknowable to humans.

key strategies for managing pandemics and infectious diseases

① Regular and rigorous testing of infected (suspects).

② Indentifying source of infection
eg) Jaundice (infectious) → water.
Dengue - mosquitoes.

③ Awareness generation regarding prevention.
eg) COVID → social distancing.

④ Increasing capabilities to treat

Candidates must not write on this margin

patients → Human and Infrastructure capabilities both

eg) COVID → oxygen deficit

⑤ Monitoring of variants through genomic testing

eg) INSACOG facility

⑥ Vaccine development

eg) DNA, RNA - vaccines of COVID

## Challenges of management

① Restricted human and infra-structure capabilities

② lack of awareness among people

③ Measures like; lockdown etc hamper economic activities.

④ Mental health of patients

⑤ Highly infectious → difficult to control.

Pandemics can be great learning source of improving our capabilities to reduce disaster risks.

9. "पूर्वी और मध्य भारत का संसाधन अभिशाप वामपंथी उग्रवाद का एक महत्वपूर्ण चालक रहा है"। इन क्षेत्रों के सतत और समावेशी विकास के लिए उपायों को विस्तार से बताइए और सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"The resource curse of Eastern and Central India has been a crucial driver of LWE". Elaborate and suggest measures for sustainable and inclusive development of the region.

(Answer in 150 words) 10 Marks

Development Deficit and abundant resources is the dichotomy that have been a crucial driver of LWE in Eastern and central India.

Resource curse leading to LWE

① Mineral deposits and mining leading to diversion of land (forests) and negatively affect tribals

② They are more prone to propaganda and radicalisation due to lack of awareness.

③ Loss of livelihood and community Forest resources due to mining and mineral exploration

Candidates must not write on this margin

④ Poor rehabilitation efforts and policies.

## Measures for sustainable and inclusive development

① Giving rights over land and community resources
eg) Forest Rights Act 2006.

② Social sector infrastructure
eg) Eklavya Model schools etc

③ Employing SHGs to mobilise Minor forest produce and products.

④ Political and administrative efforts.
eg) 5th and 6th schedule implementation

To counter LWE, the security efforts should be complemented with development efforts to induce long-lasting changes.

10. उत्तर पूर्व और जम्मू–कश्मीर क्षेत्र में हिंसा की घटती प्रवृत्ति के आलोक में क्या आपको लगता है कि एएफएसपीए (अफ्स्पा) अपनी उपयोगिता बरकरार रख पाया है? टिप्पणी कीजिए (150 शब्दों में उत्तर दीजिए) 10 अंक
In light of the declining trend of violence in the North East and J&K region do you think that AFSPA has lived its utility? Comment. (Answer in 150 words) 10 Marks

AFSPA give special immunity and powers to armed forces to search, arrest without warrant and fire with warning etc.

They are given legal immunity.

Recent trend of declining violence in North East and J&K have shown reducing area under AFSPA.

AFSPA has lived its utility?

YES

① It hinders outreach efforts of government.

② Reduced exercise of Fundamental Rights of people,

③ Make people more prone to propaganda and radicalisation

Candidates must not write on this margin

④ Justice Santosh Hegde Committee
↳ AFSPA : legal immunity in case of Rape etc. should be withdrawn

⑤ Jeevan Reddy committee : It is a menace on society. UAPA should be strengthened and AFSPA repealed.

NO

① Sudden withdrawal might lead to re-introduction of military.

② Security forces should be given special powers for effective operations

③ Militants might induce people to false charges against forces.

④ Might reduce morale of security forces.

Thus, gradual withdrawal of AFSPA from peaceful districts should be the way forward.

Candidates must write on this s

11. अंतर्राष्ट्रीय व्यापार प्रमुख मुद्रा प्रतिमान (डीसीएम) पर केंद्रित है। अंतर्राष्ट्रीय व्यापार में हार्ड करेंसी (दुर्लभ मुद्रा) के महत्त्व का आलोचनात्मक विश्लेषण कीजिए और डॉलर साम्राज्यवाद के विकल्प के रूप में वैश्विक व्यापार में रुपये की स्वीकार्यता की संभावना पर चर्चा कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

International trade is centred on the dominant currency paradigm (DCM). Critically Analyze the importance of Hard currency in International trade and Discuss the potential of rupee acceptance in global trade as an alternative to dollar imperialism. (Answer in 250 words) 15 Marks

International trade is currently dominated by Dollar as a currency.

Importance of Hard Currency in International Trade

① Provide single measure of value for products of different countries.

② Smooth trade between countries.
eg: International payment mechanisms.

③ Comparing the growth of countries using single measure.

④ Easy for investors to gauge the investment environment of different countries.

Candidates must not write on this margin

## Limitations of Hard Currency

1. Undue advantage and Hegemonic influence of one country.
2. Countries susceptible to Balance of Payment crisis.
3. Need to Maintain forex reserves burden on resources of country.

## Rupee as alternative

**Potential**

1. India being the fastest growing economy.
2. Ease of Doing Business efforts of government.
3. RBI's image as independent and effective regulator
4. India being an open and inclusive democracy

Limitations

① India having Current Account Deficit reduces capabilities

② fluctuating value of Rupee

③ RBI's interventions in open market to stabilise value reduces credibility.
i.e. Pegged Currency.

④ Lack of full capital account convertibility deters investors.

⑤ Import dependence of India.
eg: recently Russia switched to Yuan

India should promote bilateral trade in rupees and at the same time improve trade and regulatory measures to boost image of Rupee.

Candidates must not write on this margin

12. जनसांख्यिकीय लाभांश संवृद्धि सुनिश्चित नहीं करता है; यह केवल सामर्थ्य उत्पन्न करता है। जनसांख्यिकीय परिवर्तन से उत्पन्न अवसरों का लाभ उठाने के लिए सरकार द्वारा उठाए गए कदमों पर चर्चा कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

A demographic Dividend does not ensure growth; it only generates potential. Discuss the steps made by the government to take advantage of the opportunities presented by the demographic transition.

(Answer in 250 words) 15 Marks

Demographic Dividend refers to the bulge at the middle of population pyramid i.e. increase in working age population.

It only generates a potential for growth and if not employed effectively might be a Demographic disaster

steps taken by government

① Improving education
eg: New Education Policy 2020.

② Improving health of all and accessible health infrastructure
eg: Ayushman Bharat
PM Jan Aarogya Yojana.

③ Skill development: Bridge courses, certification etc.

eg) PM Kaushal Vikas Yojana
Future Skill Prime

④ Social Security and Financial Inclusion

eg) Jan Dhan Accounts → linked → PM Suraksha Bima Yojana
→ PM Jeevan Jyoti Yojana

⑤ Emphasis on localisation of SDGs

⑥ Employment generation through
eg) Shram Portal, Asseem Portal

⑦ Boosting MSMEs
eg) new criteria, Priority Sector lending

⑧ Boosting Food Processing Enterprises
eg) PM Sampada Yojana

⑨ Boosting Entrepreneurship
eg) Startup India Scheme

Candidates must not write on this margin

Opportunities of demographic transition

① Economic growth : large working population ⇒ more productivity of economy.

② Increased Investment : cheap labour force.

③ less burden on social security schemes.

④ Increased resources at helm of government
↳ Increased welfare activities

⑤ Limitations of govt. steps →
- reduced reach of schemes
- high illiteracy rates
- lackadaisical bureaucracy
- less budgetary allocation to schemes eg → MNREGA

Thus, demographic dividend have the capacity to make India a developed country by 2050.

13. 'जीनोम एडिटिंग (जीनोम संपादन) में फसल सुधार की अपार संभावनाएँ हैं, लेकिन यह नैतिक और सुरक्षा संबंधी चिंताओं को भी जन्म देती है।' भारत में जीनोम-संपादित पादपों के सुरक्षा मूल्यांकन के लिए नए दिशानिर्देश आनुवंशिक रूप से संशोधित फसलों की सुरक्षा को कितना सुनिश्चित करते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक

'Genome editing holds immense potential for crop improvement, but it also raises ethical and safety concerns'. How far do the new guidelines for the safety assessment of genome-edited plants in India, ensure the safety of genetically modified crops? (Answer in 250 words) 15 Marks

Genome Editing refers to snapping a string of DNA and sometimes introducing a foreign DNA also.

eg) Bt Cotton have DNA of bollworm

Techniques → CRISPR - Cas 9
→ zinc finger nuclease (ZFN) etc.

Potential for Crop Improvement

① Introducing pest and disease resistance.

② Making crops drought resistant

③ Improving Resource Use Efficiency of crops

④ Improving yields

⑤ Reduced usage of fertilisers for same yield

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## Ethical and Safety concerns

① Monopoly of big companies and plight of small farmers (86%)
eg) Monsanto.

② Unintended consequences on local biodiversity
eg) cross pollination with genetic modified plant

③ Reduced gene pool and threat to indigenous variety of crops.

④ Affordability for farmers

⑤ Pests and diseases might develop immunity or new pests and disease attack.

## New guidelines for safety assessment

① Field trials only after permission of Genetic Engineering Appraisal Committee

② Segregation and maintaining distance between fields of

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seeds.

③ Rights of indigenous breeders.

④ Traditional knowledge libraries

⑤ Access and Benefit sharing.

Limitations of guidelines.

① Decreased scope of farmers rights.

② Relaxations in terms of approval of new varieties.

③ Limited address to concerns of environmentalists related to biodiversity, gene pollution etc.

④ Doesnot address the consumer health and safety

Genome Editing in crop improvement can bring 2nd Green Revolution in our country but its safety and Ethical concerns should be addressed proactively.

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14. भारत में कृषि क्षेत्र पर प्रत्यक्ष और अप्रत्यक्ष कृषि सब्सिडी के प्रभाव की चर्चा कीजिए। न्यूनतम समर्थन मूल्य (एमएसपी) ने कृषि अर्थव्यवस्था को किस प्रकार प्रभावित किया है? (250 शब्दों में उत्तर दीजिए) 15 अंक

Discuss the impact of direct and indirect farm subsidies on the agriculture sector in India. How have Minimum Support Prices (MSP) affected the agricultural economy? (Answer in 250 words) 15 Marks

**Subsidies** in a developing country are measures for **Social Justice** and help in **generating livelihood, food and nutritional security** etc.

**Farm subsidies** are given to farmers to **boost productivity** and **remuneration** to farmers (Just).

**Indirect Farm Subsidies** → Fertiliser, Power, Social security etc.

**Impacts :-** (Negatives)

① Inefficient utilisation of fertiliser
eg NPK ratio — desired → 4 : 2 : 1, current → 8 : 3 : 1

② Misuse of Power :- drawdown of ground water table

③ Misuse and corruption in PM Fasal Bima Yojana

Direct Farm Subsidies → PM KISAN
↳ Farm loan waivers

Impacts (Negative) :-

① Distorts market

② Negative feedback mechanism

eg) farm loan waivers ⇒ disincentivise disciplined repaying farmers.

③ Fiscal Burden

Positive Impacts of Farm subsidies

① livelihood to farmers

② Food and Nutritional security

③ Inclusive development : large population dependent on agriculture (70%)

MSP : is the minimum support price guaranteed by government to farmers

Calculated by CACP as : (A2 + FL)
i.e. (input cost + imputed cost of family labour)

Positive effects of MSP

① Guaranteed remuneration to farmers

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② Increases area under crop

③ Improves investment in agriculture

④ Incentivises adoption of new farm techniques and technologies.

## Negative effects of MSP

① Distorts the agricultural market in favour of supplier.

② Disincentivise investment by private players.

③ Cropping pattern restricted to like - wheat system

④ Rice and wheat : Irrigation reducing ground water table.

Shanta Kumar Committee and Swaminathan commission recommendations for food grain management should be implemented to improve effectiveness of farm subsidies and MSP.

15. रोगाणुरोधी प्रतिरोध (एएमआर) एक तेजी से बढ़ता संकट है जो दुनिया भर में सार्वजनिक स्वास्थ्य के लिए एक गंभीर खतरा है। रोगाणुरोधी प्रतिरोध की बढ़ती समस्या में योगदान देने वाले प्रमुख कारक क्या हैं, और इस वैश्विक स्वास्थ्य खतरे से निपटने के लिए कौन से कदम उठाए जा सकते हैं? (250 शब्दों में उत्तर दीजिए) 15 अंक

Antimicrobial resistance (AMR) is a rapidly escalating crisis that poses a grave threat to public health worldwide. What are the major contributing factors to the growing problem of antimicrobial resistance, and what steps can be taken to address this global health threat? (Answer in 250 words) 15 Marks

Antimicrobial Resistance refers to the resistance developed by bacteria against the anti-biotics.

Threats of AMR →
- reduced efficacy of anti-biotics
- difficult to control epidemics or life-threatening diseases eg) TB
- Poverty (vicious cycle)
- Burdenon limited health infrastructure
- reduced human development
- Fiscal Burden
- Generating new epidemic and pandemics.

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## Major Contributing factors

① Overuse of anti-biotics

② Over the counter availability of antibiotics.

③ Use in animal husbandry and allied activities

eg) Animals → Milk, meat etc.
↑ given antibiotics
↓
human consumption
[AMR]

④ Water treatment unable to remove anti-biotics.

eg) human/animal excreta → water source
↓
cannot be treated

⑤ Pharma companies releasing untreated sewage to water bodies.

⑥ lack of regulation for anti-biotic use.

Steps that can be taken

① Banning over the counter sale

② Improving research on new anti-biotics to counter AMRs

③ Restrict use for animal husbandry.

④ Mandatory treatment of waste by pharma companies

⑤ Guidelines for disposal of Bio-waste

⑥ Import - Export monitoring of pharma

Tackling Anti-microbial resistance requires a multi-pronged approach and effective governance and One Health approach.

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16. विघटनकारी नवाचारों से आप क्या समझते हैं? हाल के दिनों में विघटनकारी नवाचार के कुछ उदाहरण बताइए और यह भी बताइए कि इन नवाचारों ने उद्योगों के संचालन के तरीके को किस प्रकार परिवर्तित किया है?

(250 शब्दों में उत्तर दीजिए) 15 अंक

What do you understand by Disruptive innovations? What are some examples of disruptive innovation in recent times, and how have they changed the way industries operate?

(Answer in 250 words) 15 Marks

**Disruptive Innovations** are those technological inventions which change the way we produce, consume or maintain economic activities.

Examples of Disruptive Innovations (recent)

- Artificial Intelligence
  - eg) Generative AI.
- Machine learning
  - eg) Facial recognition
- Internet of Things
- 3D - manufacturing
- Quantum computing
- Telecommunication
  - eg) Satellite telecom.

## Changes in way industries operate

① Manufacturing. Traditional → additive manufacturing

↓ change

Robotic 3-D manufacturing.

↳ can even manufacture very sophisticated products efficiently.

② Software Traditional → Human codes and debugging

↓ change

Generative Artificial Intelligence producing codes.

③ Data Processing Traditional → Humans using computers eg) MS Excel.

↓ change

Deep learning using Neural Networks

④ Construction Traditional → Human labour

↓ change

Robots pre programmed using 3D manufacturing.

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① Agriculture — Traditional: Farmer's traditional knowledge for irrigation, nutrient cycle etc.

↓ change

Internet of things (Sensors)

↳ can assess nutrients in soil and recommend nutrient dose and irrigation cycle

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## Concerns of technology use

① loss of jobs
eg: software developers etc.

② Personal data privacy and Identity theft issues.

③ Cybersecurity concerns

④ Dehumanising economic activities
↳ human turned only consumer

Thus, technology is a double-edged sword and it should be humanised and utilised for human ends and not vice-versa

17. हानि और क्षति (L&D) कोष के क्रमिक विकास को चिह्नित कीजिए। COP27 में हानि और क्षति कोष से संबंधित कौन–से प्रमुख घटनाक्रम हुए हैं? इस सम्मेलन में भारत ने क्या प्रतिबद्धताएँ व्यक्त की हैं?

(250 शब्दों में उत्तर दीजिए) 15 अंक

Trace the evolution of the Loss and Damage fund What are the major development related to loss and damage funds in COP 27?, What are the commitments made by India in this conference?

(Answer in 250 words) 15 Marks

Loss and Damage fund aims to compensate countries for irreversible losses and damages incurred due to climate change and Global warming

Evolution of L&D fund

COP 26 → Santiago Network

COP 27 → Action group and framework on L&D fund.

Western Countries :- Oppose separate fund and lobbying to use existing mechanism

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## Developments related to L&D fund in COP27

1. New action group formed to work on modalities.
2. Commitment of $200 Million only for L&D fund.
   - ↳ more than $2000 Billion damages (IPCC)
3. Santiago network to start functioning.
4. focus on adaptation efforts also.
5. Compensation to small Island Developing states.
6. Commitments of historical polluters to compensate.
7. Separate fund to be operationalised from next COP28

Commitments made by India

① Supporting Common But - Differentiated Responsibilities and Respective Capabilities (CBDR-RC)

② Help to Small Island Developing States under Coalition for Disaster Resilient Infrastructure.

③ Humanitarian Assistance and Disaster Response for Indian Ocean Island Countries.

Loss and Damage Fund is important pillar of Climate Equity and Justice and should be mobilised at priority.

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18. आपदा प्रबंधन सिर्फ आपात स्थिति से निपटने के बारे में नहीं है, बल्कि लचीले समुदायों के निर्माण के बारे में भी है। उन प्रमुख रणनीतियों पर चर्चा कीजिए जिनका उपयोग सामुदायिक लचीलापन बनाने और आपदाओं के प्रभाव को कम करने के लिए किया जा सकता है। (250 शब्दों में उत्तर दीजिए) 15 अंक

Disaster management is not just about responding to emergencies but also about building resilient communities. Discuss the key strategies that can be used to build community resilience and reduce the impact of disasters. (Answer in 250 words) 15 Marks

Disaster Management according to Sendai Framework refers to building resilient infrastructure as well as rehabilitation measures also

Strategies to Build Community Resilience

① Training and awareness efforts.

② Creation of Disaster Resilience infrastructure.

③ Communities are first responders

↳ given adequate tools and equipments for response.

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④ Conducting mock drills and safety exercises.

⑤ Appointing community coor-dinator for mobilisation during crisis.

⑥ Taking help of local bodies like: RRTs etc.

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Strategies to reduce impact of disasters

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① Holistic development and planning of infrastructure development.

② Investment in health infrastructure and treating associated health consequences of disaster-
eg) Floods → Dengue.

③ Building Disaster Resilient Infrastructure.

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④ Building community centres which can withstand impacts and can be used for congregation at time of disaster.

In addition to these various institutional measures also required:-

① Contingency Reserve fund should be augmented.

② Developing human capabilities to respond.

③ Early Warning System for all disasters.

④ Incentivising Research and Development for disaster preparedness.

India is a disaster prone country and building disaster resilience is imperative for saving lives.

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19. मेटावर्स और वर्चुअल एसेट्स जैसी नई और उभरती प्रौद्योगिकियों के उपयोग के माध्यम से आतंकवाद का परिवर्तन चिंता का विषय है। हम आतंकवादी उद्देश्यों के लिए नई और उभरती प्रौद्योगिकियों के उपयोग का मुकाबला किस प्रकार कर सकते हैं? इस संबंध में "दिल्ली घोषणा पत्र" के महत्व को स्पष्ट कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

The transformation of terrorism through the use of new and emerging technologies like metaverse and virtual assets is a matter of concern. How can we counter the Use of New and Emerging Technologies for Terrorist Purposes and Elucidate the importance of the "Delhi declaration" in this regard?

(Answer in 250 words) 15 Marks

Terrorism is an act of disproportionate use of violence to achieve the political or religious objectives.

Use of new and emerging technologies by terrorists

- Propagandising and disseminating information to cadre eg Social media
- Use of deep fakes etc. to influence people
- using communication tech. to pass orders within organisation eg) satellite telecom
- Doing harm by hacking, surveillance etc.

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How can we counter the use of New and Emerging tech for terrorist purposes

① Proper authentication of users, before access to tech.

② Tracking the equipments through unique ID.

③ Building intelligence sharing capabilities
eg) CCTNS, NATGRID etc.

④ Increasing cyber-security capacity
eg) currently less than 50,000 professionals.
Agencies like → Cert-In

⑤ Reducing import dependence for hardware or software

⑥ Increasing cooperation between security agencies.
eg) Police - state list and terrorism - NIA central agency

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## Importance of Delhi Declaration

① Provides a framework to tackle the use of new and emerging tech by terrorists.

② Provides for SOP for inter-agency coordination.

③ Emphasis on knowledge sharing and interoperability of data

④ Provides for increasing cyber-security capabilities of security forces.

New and emerging tech provides varied challenges for internal security and it becomes important that efforts are made in spirit of Delhi Declaration to tackle these challenges.

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20. "अग्निपथ योजना हमारे सशस्त्र बलों के लचीलेपन और प्रभावकारिता के लिए आवश्यक एक कड़वी गोली है।" प्रासंगिक तर्कों के साथ कथन का आलोचनात्मक विश्लेषण कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

"The Agnipath scheme is a bitter pill needed for the resilience and efficacy of our armed forces." Critically Analyze the statement with relevant arguments. (Answer in 250 words) 15 Marks

Agnipath scheme provides for temporary recruitment to armed forces for 4 years and permanent commissioning of only 25% of recruits.

Need for resilience and efficacy ?

① It will keep the average age of armed forces lower and will improve efficacy.

② Reduced burden of expenditure on pensions.

③ Create capacity to invest in arm acquisition and new technology

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④ Create a reserve of trained personnel who served for 4 years.

⑤ Meritocracy : more capable and disciplined recruits only allowed to continue.

## Criticism of Agnipath Scheme

① Discourages best talent to choose armed forces.

② Lose of morale of aspirants.

③ Difficult to train recruits in only 6 months

④ less incentive for loyalty to armed forces of recruit. eg) only 4 years serving period.

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⑧ Doesn't make adequate provision for Gurkha recruits

⑨ Might increase problem of unemployment.

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Thus it should be complemented with

① Bridge courses to recruits before de-commissioning.

② Incentives for higher education.

③ Placement opportunities directly to industries.

Thus, Agnipath scheme is a major reform to improve resilience and efficacy of armed forces and must be made more recruit-friendly to reap benefits