

Your representation of the answers is quite impressive.
Content of the answers can be improved to fetch more marks.
Include some more examples, case study, committee
recommendations to get the edge.
Keep writing answers.
All the best.



APTI PLUS
Academy For Civil Services
The Best IAS Academy In Eastern India SINCE 2008
An ISO 9001: 2008 Certified Institute

MAINS MOCK TEST-3 (2021)

U.P.S.C

103/250

1. Inter governmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report estimates unprecedented Biodiversity loss in recent times. What are its important observation and discuss efforts towards the conservation and protection of Biodiversity.
(10 Marks, 150 Words)

IPBES is an independent body that acts as a think tank for efforts on biodiversity conservation. Among other concerns, recent report claims that 40% of amphibian species are threatened with extinction.

Important observations

- about one-third of reef forming corals are threatened.
- increased natural disasters due to global warming
- habitat fragmentation - major cause of biodiversity loss.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Shaping Civil Servants for the Nation

U.P.S.C

- introduction of invasive alien species such as water hyacinth.

Efforts towards conservation

- Convention on Biological Diversity (CBD) was adopted in 1992 - to conserve biological diversity.

- UNESCO Biosphere Reserve

- Wildlife Protection Act, 1972 -

national parks, wildlife sanctuaries etc

- Project Tiger, Project Rhino etc of Indian government.

Biodiversity loss is detrimental to planet's viability. Global as well as local efforts must pave the way. 3.5/10

MAINS MOCK TEST-3 (2021)



APTI PLUS

Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

2. Does Shailesh Nayak Committee Report on Coastal Regulation Zone promote sustainable development of coastal areas. Discuss the CRZ 2018 in this regard. (10 Marks, 150 Words)

The Coastal Regulation Zone (CRZ) guidelines are aimed to give impetus to both tourism and developmental activities.

Features of CRZ 2018

- temporary tourist structures in CRZ III allowed.
- Floor Space Index (FSI) norms eased —
So can help in affordable housing development.
- easing restrictions for highly populated areas — so no development zone, norms eased.



APTI PLUS

Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

MAINS MOCK TEST-3 (2021)

- raising norms for development of waste treatment facilities ✓

Issue in CRZ norms 2018.

 ✓

- commercialisation of coast may adversely impact ecosensitive zone. ✓
- can affect ecotone nature of beaches and intertidal wetlands. ✓
- Sea level rise impact not considered while diluting NDZ norms. ✓

Way forward

 ✓

- inclusion of citizen feedback window to allow feedback before taking on large projects. ✓

CRZ norms today aim to balance development and conservation. It must be improved by involving multistakeholder

approach ✓

Good representation.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Empowering Civil Servants for the Nation

U.P.S.C

3. What are the opportunities and challenges in the Cyber Security framework in India? (10 Marks, 150 Words)

Cyber space is critical for India's long term image as well as national security. Protection of cyber space is referred to as cyber security ✓.

Opportunities in Indian cyber security framework ✓

- critical infrastructure protection - eg: banking, defence equipment ✓
- data protection and its integrity ✓
- prevent anonymous hacker/attacks
eg: role of CERT-In in cyber security ✓
- economic security of shares, stocks, banks etc ✓



U.P.S.C

Challenges

- no national level architecture for cyber security. unlike ED
- human resource crunch - less trained workforce.
- no independent coordinating body
- inter ministerial coordination bottleneck.

Way forward.

- implement National Cyber Security Policy 2013 in letter and spirit eg: training 500000 professionals in cyber security.

Include Budapest Convention, NITI Ayog suggestions, etc.

Cyber security is growing in importance as critical aspect of national security. Multi stakeholder approach is necessary.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

4. Global Assessment Report 2019 highlights India's vulnerability towards disaster. Mention its findings and discuss the reasons for disaster Vulnerability. (10 Marks, 150 Words)

With India's unique geographical location and physiography, it is one of the most vulnerable nations from a disaster prone perspective.

Global Assessment Report 2019.

- geology of India - one of the most important reasons for its vulnerability.
- Himalayan region - most vulnerable to earthquakes due to faults in between continental plates.
- rising population eg: unplanned urbanisation - giving rise to increased vulnerability.
- vulnerability of cyclones due to long coastline and pressure conditions.



U.P.S.C

both before and after monsoon.

Challenges

- ▷ focus more on post disaster relief in India.
- ▷ poor economic conditions limit people's ability to give attention to disaster management.

Way forward

- ▷ Apada Mitra initiative - that allows community involvement in relief and rescue.

Implementation of Sendai framework

India's vulnerability to disasters is a reality that must be dealt with

international cooperation (eg CDRI) 4/10

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

5. What are the current National and International efforts towards disaster risk reduction? How will coalition for Disaster Resilient Infrastructure help in this regard. (10 Marks, 150 Words)

Disaster risk reduction is critical for a vulnerable nation like India. Define DRR.

National efforts

- India enacted the Disaster Management Act 2005 - shift from relief centric approach to proactive approach.

- National Disaster Management Policy and National Disaster

- Management Plan 2016

GRIHA rating system.
Eco Nivas Samhita

- India is part of the Sendai Framework - that covers all phases - prevention, mitigation as well as

manag



U.P.S.C

International efforts

- Hyogo Framework for Action till 2015 that detailed multi-sectoral approach.

- Sendai Framework (2015-2030) - state has primary role but multi-stakeholder approach is needed along with targets

Way forward

- Strengthen best practice sharing as part of CDRI - coalition for disaster resilient infrastructure

Repetitive content.

- Apada Mitra - community involvement.

Disaster Risk Reduction success will help India meet and sustain its SDG goals.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

6. How does climate change lead to desertification? Suggest measures to minimize land degradation. (10 Marks, 150 Words)

Desertification is process where land is degraded in arid, semi arid regions, that makes the land unsuitable for flora and fauna sustenance.

Climate change leads to desertification

- intensification of water scarcity in some areas - so areas like Vidarbha see desertification.

- erratic rainfall - excess rainfall leads to loss of topsoil.

- excess CO_2 in air - **Include some examples.**

↓
proliferation of invasive alien species

↓
loss of endemic species.

↓
indirect desertification



U.P.S.C

Measures to minimise negative impact

- PM ~~Water~~ Kisan Sanchayee Yojana - more crop per drop
- National Green Mission: in sync with recent Bonn challenge.
- UN's SDG goal of achieving LDN (Land Degradation Neutrality) by 2030.
- GEF and Government of India's joint implementation - SLFM - sustainable land and ecosystem management - for sustainable land use.

Preventing / slowing desertification has strong forward and backward linkages.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

7. Paris deal is said to be a true successor of Kyoto protocol to save global climate. In this regard, highlight the challenges involved in global cooperation and implementation of Paris deal. (10 Marks, 150 Words)

Paris deal refers to the broad global agenda for fighting climate change chalked out at COP21 in 2015 at UNFCCC meet.

Challenges involved in global cooperation

- no agreement on implementation mechanism for Loss and Damages, that aim to finance ~~the~~ adaptation efforts in the developing countries.
- disagreement on the future of Article 6 — carbon markets and carry forward of carbon credits.
- 100 billion a year target — broad consensus not reached.
- concern of pulling out of US from the Paris climate deal.



U.P.S.C

Utility of Paris climate deal

- adoption and communication of NDC - nationally determined contribution
- review mechanism of NDCs every 5 years

The Paris climate deal is paramount to limiting global temperature rise within 2°C of pre industrial levels

3.5/10

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

8. Does Recent Amendment in Environment impact Assessment dilute the public participation in policy making? Critically Examine. (10 Marks, 150 Words)

Recently the government has amended the EIA rule. It calls for a careful analysis. **Define EIA.**

Positives of the recent amendment:

- allows for post facto approval for projects - that can boost investment,
- greater clarity on status of existing projects that hadn't sought approval.
- enhances Ease of Doing Business
- decentralisation - more powers to the states for giving approvals.

Issues with the amendment:

- post facto approval - goes against principle of "precautionary principle"



U.P.S.C

that is ~~corner~~ cornerstone of environmental sustainability ✓

- reduction in public consultation process time. → so less participatory process
- sweeping exemption for "strategic projects" to be relieved from putting information in the public domain ✓

Way forward

- case by case based relaxation against publishing public information ✓
- increasing time window for public consultation. **Include Aarhus Convention principles**

EIA rules need to balance development as well as environmental sustainability. For this, principle of precautionary principle must be guiding light. ✓

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

9. Genetic Modified Crops can be a viable solution if used carefully. Analyze the statement with reference to GM Crops in India. (10 Marks, 150 Words)

A genetically modified (GM) crop has gene / genes that are artificially inserted in its genome.

It involves manipulation of the DNA of the plant.

Indian Scenario

- India - 4th largest GM crop area.
- Bt Cotton - the only GM crop allowed for cultivation in the country.

Challenges related to GM crops

- lack of knowledge of long term effects
- mutant gene can accidentally



U.P.S.C

cause ecological disaster

- concern over eventual food safety ✓

- gene hopping ✓ phenomenon that can be transferred into wild plants via horizontal gene transfer

Way forward

- need clear ✓ regulatory system in India

eg: GM soybean being imported without FSSAI approval. - need to curb.

- mandatory and clear labelling

GM crops are vital for food security ✓ but can be double edged sword. Clarity in regulation

Mention about GEAC.

is key.

3.5/10

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

10. Californian, Amazon and Australian wild fires are the new normal. How is Climate change causing forest fires? Examine. (10 Marks, 150 Words)

Wild fires cause carbon emissions
as well as loss of immense biodiversity

Climate change and forest fires

• rising temperatures due to climate change
↓
reduce humidity in soil, leaves

↓
friction based fires easily caused

• climate change reduce productivity of
agricultural land - so cutting down
or burning of forests to make land
for agriculture

↳ so man made cause of wild fires

• erratic winds due to rising temperatures
and changed in global weather patterns



U.P.S.C

lead to faster spread of wildfires.

[Way forward -]

- gaps - "fire gap" between two forest stretches.
- building safety codes for houses in forest / civilisation interface.
- quick response codes for instant leakage based alarm spread.
- training local in fire safety and isolation of wildfires. - eg: Australia's Project Zero initiative.

Forest fire risk is exacerbated by climate change. Preventive as well as standard operating procedures for fire management is necessary.

4.5/10

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

11. Discuss the status of Waste management in India. Provide suggestions to tackle various kind of wastes and related problems. (15 Marks, 250 Words)

Waste management involves segregation, collection, transportation, recycling and disposal. Only about 33% of municipal solid waste is treated by municipal authorities in India.

Problems associated with waste management

- lack of use of scientific techniques of disposal.
- poor landfill management.
- poor performance of waste segregation at source.
- plastic waste management - poor.
- extended producer responsibility organisations' performance.



U.P.S.C

- demand for outpatient supply eg: municipal waste and sewage treatment facilities.
- ~~lack of~~ lack of awareness among Indians.

Suggestions to tackle waste related

problems

- pyrolysis and gasification as well as pelletization
- promoting best practices eg: Ambikapur in Chhattisgarh - scientific land fill management - good.
- bioremediation
- social change and awareness drives must be stepped up eg: 2nd phase

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

of Swachh Bharat Mission

- research into waste to energy mechanisms. ✓

Waste management is both a problem and a solution in India today. We need decent ~~and~~ approach for tackling this. ✓

6/15

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

12. Is it right the time for ISRO to diversify its operations to private players like its American counterpart NASA? Write the potential in this step. (15 Marks, 250 Words)

ISRO established in 1969 to use space technology for national development, along with research. ✓

Benefits of ISRO diversifying operations ✓

• Antrix ✓ - commercial wing of ISRO aimed at increasing launches for private firms - to more revenue for ISRO

NSIL.

• In SPACE ✓ - provide level playing field for the private companies to use Indian space infrastructure.

• India collaborated with Aurora Authority of India ✓ to develop



U.P.S.C

GAGAN for indigenous aero navigation system.

- diversification into new areas

such as human space flights eg:
Gaganyaan missions.

Benefits

- greater competition in line with market principles
- boost to space based start ups
- additional revenue for ISRO
- increase in India's soft power

Way forward

- schemes to raise industry academia



U.P.S.C

Imkageel eg: SPARC scheme.

- raising indigenous production of space related capital goods by having negative list of imports.
- putting ISRO's non strategic data in the public sector - so that API based ones will crowd source new applications.

ISRO is a bright feather in India's cap. Diversification of its operations in line with a market based approach and is a needed step to take Indian space program to the next level.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

13. In the wake of COVID-19 pandemic, evaluate current disaster management framework in India. (15 Marks, 250 Words)

The covid 19 pandemic put India on uncharted territory. It put India's disaster management framework to the extreme test.

Disaster management framework in India.

- Disaster Management Act 2005 - powers to central and state government to make rules for prevention, evacuation, relief during pandemic.
↳ lockdown under Disaster Management Act.
- Epidemic Diseases Act 1897 - state govt and lower authority allowed to issue directions.



U.P.S.C

- Essential Commodities Act - allow delivery of essential items as well as prevents hoarding of such items.
- Section 144 under CrPc to prevent gathering of people in an area.

Issue that cropped up

- less focus on community led disaster management.
- lack of coordination between centre and states.
- health infrastructure was overburdened.
- limited funding for research in disaster management.



Way forward

- Apada Mitra scheme - for community involvement in disaster management.
- amendment to the DM Act to mandate disaster zoning exercise
- DM Act to have more clarity on roles of all stakeholders eg: at Panchayat level.

The disaster management framework in India must adapt to the multifaceted and multi stakeholder needs of a pandemic situation

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

14. Technology minimizes the impact of COVID-19 pandemic in significant manner. Elucidate with examples. (15 Marks, 250 Words).

The world has been put in uncharted territory due to the COVID-19 pandemic.

Technology aims to make the journey much safer and smoother.

Using technology to minimize impact of COVID-19 pandemic.

- detection - faster methods of disease diagnosis eg: RT-PCR test.
- contact tracing
- prevention → vaccine development via gene editing technologies
- social welfare in form of online education and digitized records of

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

Abyodaya entitlements to act as safety net in times of pandemic.

- legislative work transferred to online mode to prevent policy paralysis.
- reducing economic shock via continuation of online banking, trading.
- direct benefit transfer to reduce pilferages, ghost beneficiaries.
- biomedical waste management - bascoding of medical waste as per Biomedical waste management rules, 2016.

[Improving the use of technology /
[further]

- legal coherency - pass the Data Protection Bill.



U.P.S.C

- coherent state policy ✓ - help adapt to new changes eg: Pragyata guidelines for better adaptation to online education shift.
- increasing digital ✓ literacy eg: Digital Saksharta Abhiyan
- global consensus ✓ for equitable sharing of benefits eg: vaccines.

Technological interventions have and continue to act as shock absorbers in the uncertainty of the pandemic and hence prevented total socio economic collapse ✓

6.5/15

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

15. Despite being an ICT powerhouse, India has got 48th rank in global innovation index 2020. Critically Examine. (15 Marks, 250 Words).

Global Innovation Index (GII) report ranks India at 48, which is far below India's potential. This calls for analysis.

Strength of Indian innovation ecosystem

- 2nd highest number of startups in 2021 - so hub of startups
- low cost space innovation
- service sector led innovation is drowning India's potential for ICT powerhouse

Bottlenecks in Indian innovation ecosystem

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

- budget allocation is not at par with India's aspirational needs - only 0.6% of GDP ✓
- gender inequity - only 15% of STEM researchers are ✓ women
- infrastructure is inadequate as per Gill report ✓
- mostly imitation of existing solutions, not disruptive ✓ innovations.

Way forward

- increasing budgetary allocation to about 2% - in line with other major economies ✓

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

- increasing foreign collaborations eg: SPARE scheme of the ~~HRD~~ Ministry of Education ✓
- shifting to an outcome based education model ✓
- benefits / encouragements for private sector led research ✓

Outcome that are better in innovation outcomes. will help India achieve its SDG goals as well as demographic dividend. ✓

7.5/15

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants For the Nation

U.P.S.C

16. Does Antimicrobial Resistance put danger to India's Healthcare? Analyze. (15 Marks, 250 Words).

Antimicrobial resistance (AMR) is when microbes (bacteria, parasites etc) develop immunity against commonly used antibiotics.

This causes more superbug which leads to health insecurity.

Danger to India's healthcare system

- increased spending on healthcare.
- out of pocket expenditure also - today it's already 70% of healthcare costs.
- ↳ this impoverishes the lower half of the population.



U.P.S.C

- System gets overburdened due to lack of beds ✓ as well as supply of healthcare professionals cannot keep pace with the demand.
- challenge to SDG goal 3 - universal healthcare coverage by 2030.
- disproportionately affects ✓ vulnerable developing countries.

Hence it can be argued that antimicrobial resistance puts stress on the healthcare system.

Way forward.

- Red Line Campaign ✓ - by Health ministry of government of India to raise awareness and to regulate



U.P.S.C

the use of over the counter antibiotics.

- budget allocation should be raised so as to have more beds, hospital and nurses.

- usage of social media influencers to raise awareness about AMR.

WHO has let alarm bells ringing when it called AMR as the gravest health risk in our planet today.

Awareness as well as regulation of sale of antibiotics will go a long way.

5.5/15

Generic answer.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy In Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants For The Nation

U.P.S.C

17. How will biotechnology help India to solve the current challenges in food security and malnutrition to make India Atman Nirbhar? (15 Marks, 250 Words).

Biotechnology is the sum total of all processes and mechanisms where, organic or biological products are changed or developed for the ultimate aim of benefit of mankind. As an industrial sector, it can have great ~~part~~ ^{forward} and backward linkages.

Biotechnology helping solve food insecurity and malnutrition

- resistance to cold, drought, heat etc so greater yield eg: BT Brinjal
- help reduce risk due to uncertain monsoon - 70% of crop area damped.



U.P.S.C

- development of environmentally friendly fertilisers
- helps increase seed replacement ratio due to innovations of better yield seeds.
- biofortification that reduces food insecurity and raised nutrient intake eg: iron fortified rice.
- more surplus stocks due to high yielding crop variety.

Challenges

- long term effects of genetically modified crops is not known.
- ethical dilemma.



U.P.S.C

- absence of regulatory body that is independent
[Way forward]
- increasing industry academic linkage in biotech field eg: as part of make in India.
- raising funding for agricultural universities for research eg: ARYA scheme for attracting youth.

Biotechnology has immense potential to end hunger (SDG-2) as well as improve post covid stresses in Indian economy.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

18. Discuss the need and challenges related to intellectual property rights in India. (15 Marks, 250 Words).

Intellectual property rights (IPR) are rights legalised over intangible creations of the mind eg: copyrights, patents, trademarks etc.

Need for IPR in India

- protects and encourages innovation
eg. rise in Global Innovation Index of India's rank
- marketable financial asset - usage of IPRs.
- rise in value of soft power.
- in line with goal of Atmanirbhar Bharat



U.P.S.C

Challenges in IPF regime in India

- could get a deterrent to innovation as overawed by foreign patents.
- public interest may not be served by patent protection eg: covid vaccine development issue.
- lack of human resources - lawyers, patent professionals.
- commercialisation risk to social welfare.
- standalone software is not patentable as per Indian Patent Act.
- huge pendency in patent challenge cases and appeals.



U.P.S.C

How to improve situation - way forward.

- increasing in industry academia linkages
 - incentives to private sector, to increase investment in IPR creation.
 - allow professors in higher education institutions (eg IITs) to act as technical support system in patent verification.
- ~~Pat~~ IPR rights make Indian innovations sustainable and attractive
- Hence increasing human resources as well as reducing application time, is paramount.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Grouping Civil Services for the Nation

U.P.S.C

19. Artificial intelligence is necessary for India to harness its full potential for inclusive growth. Critically Examine. (15 Marks, 250 Words).

Artificial intelligence involves usage of computational innovation to allow machines to think in similar way like human brain.

Need of AI for inclusive growth.

- productivity rise → lead to more GDP growth → so more financial for social welfare.

- security ✓ eg: better border protection, cyber crime handling as AI based threat assessment.

eg: MESRA ✓ - AI based communal tensions monitoring computer in Malaysia.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India SINCE 2006
An ISO 9001 : 2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

- weather forecasting ✓ eg: to better strengthen National Monsoon Mission
- enhance quality ✓ of manufacturing in India under Make in India by more efficient assembly lines.
- environmental protection ✓ - fine tune global climate change tackling policies.
- medical sciences ✓ - better disease diagnosis to reduce medical bill and expenditure burden, especially of lower half of population eg: today 70% of medical expenditure is out of pocket expenditure.



U.P.S.C

Existing bottlenecks

- poor research quality in AI
- lack of sufficient industry academia linkages
- lack of legal clarity in data protection regime - so hampers big data usage in AI applications.

Way forward

- state focus - eg: National Strategy on AI.
- inclusion of emerging areas like AI in college curriculum
- foreign research collaborations like under SPARC scheme.

V kamakoti committee's suggestions
NITI Aayog's AI for All strategy.

6.5/15

If done right, AI is sine qua non for inclusive growth in India.

MAINS MOCK TEST-3 (2021)



APTI PLUS
Academy For Civil Services
The Best IAS Academy in Eastern India Since 2006
An ISO 9001:2008 Certified Institute
Creating Civil Servants for the Nation

U.P.S.C

20. The advancements in Quantum Computing and Machine learning are said to be double edge sword for Society. Elucidate. (15 Marks, 250 Words).

Quantum computing uses principles of quantum mechanics like superposition and entanglement to really improve computational rate and speed.

Machine learning refers to the ability to computing devices to learn from past operations to improve usability in an attempt to mimic operations of brain.

Benefits of quantum computing.

- security → secures key exchange via entanglement.
- huge rise in computational speed.
eg. complex mathematical computations



U.P.S.C

Machine Learning

- Smarter devices - so Internet of Things (IoT) becomes more effective.
- Smart contracts, value chain management like eVIN network for covid vaccine supply chain management.

Double edged sword - issues

Prohibit

- data security issues.
- lack of effective research in India that makes ML and AI innovations limited in number.
- undermining of democratic rights of citizens. eg: Cambridge Analytica issue that Facebook got involved in.



U.P.S.C

Way forward ✓

need to increase positives ✓

schemes for more industry academic linkage ✓

curricula in colleges in line with needs of QC and ML engineers ✓

reduction of concerns ✓

data protection bill for legal teeth. ✓

institutional mechanism for independent regulation of AI, ML and QC development in India. ✓

While QC and ML are double edged sword, coherent policy and smart regulation must pave the way ✓