

GS Mains Daily Answer Writing

Week 3 (Day 4)

Model Structures

1. What do you understand by the 4th Industrial Revolution? How is it going to impact various aspects of life? (150 Words)

Model Structure

Introduction

- Industrial revolution refers to an era of accelerated technological progress characterized by new innovations. Recently introduced, 4th Industrial Revolution envisages fusion of technologies aimed at blurring lines between the physical, digital, and biological spheres. As witnessed by breakthroughs such as Artificial Intelligence, Robotics, Internet of Things, Autonomous Vehicles, 3-D Printing, Nanotechnology, Biotechnology, Quantum Computing etc.

Main Body

- It aims at impacting various aspects of life, such as –
 - Transportation - E.g. Self-driving cars to increase productivity and enhance pedestrian Safety.
 - Education – E.g. Alexa lectures in rural Amravati building a learning gap in government schools.
 - Health – E.g. Odisha's digital dispensary to provide primary healthcare.
 - Manufacturing– E.g. Smart factories using automation and analytics to improve overall performance.
 - On business: On the whole, there are four main effects that the Fourth Industrial Revolution has on business—on customer expectations, on product enhancement, on collaborative innovation, and on organizational forms.
 - The Fourth Industrial Revolution, finally, will change not only what we do but also who we are. It will affect our identity and all the issues associated with it: our sense of privacy, our notions of ownership, our consumption patterns, the time we

devote to work and leisure, and how we develop our careers, cultivate our skills, meet people, and nurture relationships.

Conclusion

- Hence, the 4th Industrial Revolution is more than just technology-driven change; it is an opportunity to help everyone, including leaders, policy-makers and people from all income groups and nations, to harness converging technologies in order to create an inclusive, human-centered future.
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2. The increased frequency and intensity of climate extremes in the Indian subcontinent can have grave implications. Comment. Also, suggest some measures that can be taken towards building climate-resilience in India. (250 words)

Model Structure

Introduction:

- As per “**Assessment of Climate Change over the Indian Region**” report, the Indian subcontinent has witnessed climate extremes-(any one data can be taken)
 - Average temperature has risen by around 0.7° C during 1901-2018.
 - Rainfall in summer monsoon declined by 6% during 1951 to 2015.
 - Drought affected area increased by 1.3% per decade during 1951-2016.
 - Sea surface rise in the North Indian Ocean has accelerated to 3.3 mm per year between 1993 and 2007.

Main Body:

Increased frequency and intensity of climate extremes can have grave **implications:**

- **Food Security:** These changes can disrupt rainfed agricultural food production which accounts for 60% of agricultural GDP of India.
- **Water Security:**
 - Frequent droughts and floods hinders surface and groundwater recharge.
 - Rising sea level leads to intrusion of saltwater in the coastal aquifers contaminating the groundwater. E.g. in Gujarat, Tamil Nadu, and Lakshadweep etc.
 - Retreat of glaciers in the Hindukush Himalayan region may impact the water supply in the major rivers and streams.
- **Energy demand:** Rising temperatures are likely to increase energy demand for cooling.
- **Human Health:** Risk of heat strokes, cardiovascular and neurological diseases, stress related disorders.
 - Spread of vector-borne diseases such as malaria and dengue fever etc.
- **Biodiversity:** Many species may face increasing threats, particularly those species which are adapted to narrow environmental conditions. Ex- coral reefs.
- **Economy:**
 - The loss in productivity by 2030 because of heat stress could be the equivalent of India losing 34 million full-time jobs (**ILO**).
 - According to the Union Government, Desertification, land degradation and drought cost India about 2.5% of gross domestic product in 2014-15.
 - Sea-level rise increases the vulnerability of some large cities located on the coastline.
- **Social issues:**
 - Climatic disasters such as droughts, cyclones and floods induce large scale migration.
 - Repeated crop failures add to the burden of already distressed farmers who then commit suicides.

Major initiatives of the Government towards combating climate change:

- **National Action Plan on Climate Change (NAPCC):** The Action plan covers eight major missions.

- **State Action Plan on Climate Change (SAPCC):** to align climate strategies with the eight National Missions under the NAPCC.
- **International Solar Alliance (ISA):** To provide a dedicated platform for cooperation among solar resource rich countries.
- **FAME Scheme for E-mobility:** Faster Adoption and Manufacturing of Hybrid and Electric vehicles (FAME) – India Scheme to boost sales of eco-friendly vehicles in the country.
- **Atal Mission for Rejuvenation & Urban Transformation (AMRUT)** for Smart Cities.
- **Pradhan Mantri Ujjwala Yojana:** The scheme provides LPG connections to poor people.
- **UJALA scheme:** target of replacing incandescent lamps with LED bulbs.
- **Swachh Bharat Mission:** The campaign seeks to clean the streets, roads and infrastructure of the country.
- International agreements like the Kigali **agreement and Paris Climate deal (India's Panchamitra).**

Following steps can be taken towards building climate-resilience in India:

- Make **vulnerability assessment central to long-term planning** for developing region and sector-specific adaptation and mitigation strategies
- Greater emphasis on widening observational networks, sustained monitoring, expanding research on regional changes in climate and their impacts.
 - Ex- networks of tide gauges with GPS along the Indian coastline would help monitor local changes in sea level.
- **Afforestation efforts:** Helps to mitigate climate change through carbon sequestration
 - To improve resilience against droughts, protecting coastal areas and supporting native wildlife and biodiversity.
- **Building community awareness:** Strategies should be formulated to effectively engage citizens by disseminating public messages through media outlets
- **Utilising traditional knowledge:** The in-depth traditional knowledge of land and nature can be used as a reference while formulating the climate-resilient strategy.
 - For example – Kuttanad Below Sea Level Farming System in Kerala.

Conclusion:

- Equity and social justice should be ensured for building climate resilience since the most vulnerable people such as the poor, the disabled, outdoor labourers and farmers will bear the brunt of climate change impacts. *or*
- India needs to take a leading role in bringing developed as well as developing and underdeveloped nations on common platforms to build climate resilience.