

Unit-7- Recent Trends in Technology

1) What do you mean by AI? How does it affect modern society?

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that can perform tasks such as learning, reasoning, problem-solving, and decision-making.

Effects on modern society:

Automation: AI reduces human effort in industries. Example: Chatbots, google bard

Healthcare: Helps in diagnosing diseases and robotic surgeries. Example: IBM Watson Health analyzes medical data to assist doctor.

Education: AI-powered tutors assist students. Duplingo uses AI for personalized language learning.

Transportation: Used in self-driving cars.Tesla Autopilot

Job replacement: Some jobs may be lost, but new opportunities also arise. Robots Sophia by hanson robotics automate repetitive jobs.

2) Explain the concept of Big Data and Its types.

Big Data refers to a large collection of structured, semi-structured, and unstructured data that is difficult to process using traditional data management tools.

Types of Big Data:

1. **Structured Data:** Organized in rows and columns (e.g., databases).
2. **Unstructured Data:** No fixed format (e.g., images, videos, social media posts).
3. **Semi-structured Data:** Contains both structured and unstructured elements (e.g., JSON, XML).

3) What is Big Data? Write its application.

Big Data is an extensive volume of data generated at high speed from various sources such as social media, IoT devices, and business transactions.

Applications of Big Data:

- Healthcare: Disease prediction and patient monitoring.
- E-commerce: Personalized recommendations (e.g., Amazon, Flipkart).
- Banking & Finance: Fraud detection and risk management.
- Social Media: User behavior analysis on platforms like Facebook and Twitter.
- Smart Cities: Traffic management and waste control.

4) What is E-commerce? Write down its advantages.

E-commerce (Electronic Commerce) refers to buying and selling goods and services online through websites and mobile apps.

Advantages of E-commerce:

- 24/7 Availability: Customers can shop anytime.
- Global Reach: Products can be sold worldwide.
- Cost Reduction: No need for a physical store.
- Convenience: Customers can shop from home.
- Secure Payments: Digital transactions using UPI, cards, and wallets.

Types of E-Commerce

E-commerce is classified into different types based on the parties involved in the transactions. The main types are:

1. Business to Consumer (B2C) – Businesses sell products or services directly to consumers.
Example: Amazon, Daraz, Flipkart.
2. Business to Business (B2B) – Businesses sell products or services to other businesses.
Example: Alibaba (wholesale), IndiaMART.
3. Consumer to Consumer (C2C) – Individuals sell products or services to other individuals.
Example: OLX, eBay, Facebook Marketplace.
4. Consumer to Business (C2B) – Individuals offer services or products to businesses.
Example: Freelancers selling services on Fiverr, Upwork.
5. Business to Government (B2G) – Businesses provide goods and services to government agencies. Example: Companies providing software solutions to governments.
6. Government to Citizen (G2C) – The government offers services directly to citizens through online platforms. Example: Online tax payments, e-passports, digital voting.

5) What is mobile computing? Write its features.

Mobile computing refers to the ability to use computing devices wirelessly anytime and anywhere. Examples include smartphones, tablets, and laptops.

Features of Mobile Computing:

- Portability: Devices are easy to carry.
- Wireless Communication: Uses Wi-Fi, Bluetooth, and cellular networks.
- Cloud Integration: Data can be stored and accessed online.
- Real-time Access: Users can access information instantly.
- Energy Efficiency: Optimized battery usage.

6) Define the following terms:

- **M-commerce (Mobile Commerce):** Buying and selling of goods/services through mobile devices (e.g., mobile banking, digital wallets).
- **Robotics:** The field of technology that designs, builds, and operates robots for various tasks like manufacturing, healthcare, and space exploration.
- **E-learning:** Online learning using digital platforms like Google Classroom, Zoom, and Udemy.
- **Virtual Reality (VR):** A computer-generated 3D environment that allows users to interact using VR headsets eg: VR Games
- **Social Media:** Online platforms like Facebook, Instagram, and Twitter used for communication, networking, and content sharing.
- **Internet of Things (IoT):** A network of interconnected devices that communicate and share data (e.g., smart homes, smartwatches).
- **E-governance:** Use of digital technology by the government to provide services online (e.g., e-passport, online tax filing).
- **Cloud Computing:** Storing and accessing data over the internet instead of local storage (e.g., Google Drive, AWS).