# Section A: Conceptual Understanding (20 Marks)

## Define the following technologies in your own words:

### Artificial Intelligence (AI)

**Artificial intelligence (AI) is the imitation of human intelligence processes using machines and computer systems.**

Areas of Al Artificial intelligence generally false under two broad categories.

* + Narrow Artificial Intelligence Its focus on performing specific tasks.

Ex- Chat GPT, Amazon Alexa, YouTube Recommendation, Self Driving Cars

* + Artificial General Intelligence Human level intelligence

### Augmented Reality (AR)

**Augmented reality (AR) enhances a real environment by making visual changes and adding new information to that environment.**

Typesof AR:

* + **Marker-based AR**: Uses image recognition (like QR codes or symbols) to trigger AR content.
  + **Markerless AR**: Uses GPS, compass, and accelerometer data for placing AR content—commonly used in mobile apps.
  + **Projection-based AR**: Projects light onto real surfaces and detects user interaction through reflection.
  + **Superimposition-based AR**: Replaces the original view with an augmented one (e.g., medical AR replacing bones or tissues for study).

Examples: Snapchat filters, IKEA Place app, Google Lens, Pokémon Go

Advantages:

* Enhances user engagement
* Improves decision-making with real-time data.
* Reducing the gap between physical and digital worlds

Applications of AR:

|  |  |
| --- | --- |
| Field | Example |
| Education | 3D models of planets, and historical sites |
| healthcare | Vein visualization, surgery planning |
| retail | |  | | --- | | Virtual fitting rooms, furniture placement |  |  | | --- | |  | |
| gaming | |  | | --- | |  |  |  | | --- | | Pokémon Go, AR laser tag games | |
| Real Estate | |  | | --- | |  |  |  | | --- | | 3D walkthroughs of properties | |

### d) Blockchain

**Blockchain is a decentralized, digital ledger that records transactions in a secure, transparent, and unalterable way.**

Examples:Bitcoin,Ethereum,Supply chain tracking, Healthcare Records.

Applications of blockchain: