AI AND AUTOMATION

**1. Define Artificial Intelligence in your own words?**

**Ans:-** Artificial Intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence, such as:

- Learning

- Problem-solving

- Reasoning

- Perception

- Understanding language

AI systems use algorithms and data to make decisions, often independently, and can improve their performance over time through machine learning and deep learning techniques. The goal of AI is to create machines that can think and act like humans, or even surpass human capabilities in specific domains.

**3.Mention two major milestones in the history of AI and explain their importance?**

Ans:-

**1. Development of the Perceptron (1958):** The Perceptron, developed by Frank Rosenblatt, was one of the first artificial neural networks. It laid the foundation for modern neural networks and deep learning.

**2. AlphaGo defeats a human world champion (2016):** Google's AlphaGo, a computer program, defeated a human world champion in Go, a complex strategy board game. This marked a significant achievement in AI's ability to master complex decision-making and strategic thinking.

**2.What is the difference between Narrow AI and General AI?**

ANS:-

| **Aspect** | **Narrow AI** | **General AI** |
| --- | --- | --- |
| **Scope** | Task-specific | Broad, multi-functional |
| **Flexibility** | Limited to pre-defined tasks | Highly adaptable to new tasks and situations |
| **Learning** | Specific problem-solving frameworks | Generalized learning and reasoning |
| **Capabilities** | Excels in narrow domains | Capable of performing any intellectual task |
| **Examples** | Virtual assistants (Siri, Alexa), recommendation systems, autonomous vehicles | Hypothetical scenarios, advanced cognitive tasks |
| **Development Approach** | Supervised, unsupervised, and reinforcement learning | Advanced machine learning, cognitive computing |
| **Current State** | Widely implemented and used | Theoretical, in early stages of research |
| **Advantages** | High efficiency and accuracy in specific tasks | Potential for human-like understanding and decision- |

**4. What is the Turing Test? Why is it important in AI?**

**Ans:-**

**1.The Turing Test**: A method for determining whether a machine is intelligent, proposed by Alan Turing in 1950. It assesses a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human.

**2.Importance in AI:**

- Benchmark for intelligence: The Turing Test provides a benchmark for measuring the success of AI systems in mimicking human thought processes.

- Evaluation of machine intelligence: It helps evaluate a machine's ability to think, learn, and behave like humans.

- Driving innovation: The Turing Test has driven innovation in AI research, pushing the boundaries of what machines can do.

**5.Name 3 real-life applications of AI you use or know about?**

Ans:-

**1. Virtual Assistants (e.g., Siri, Google Assistant, Alexa):** AI-powered virtual assistants can understand voice commands, perform tasks, and provide information.

**2. Image Recognition (e.g., Google Photos, Facebook):** AI-powered image recognition can identify objects, people, and scenes in images.

**3. Recommendation Systems (e.g., Netflix, Amazon):** AI-powered recommendation systems can suggest products or content based on user behavior and preferences