\*write brief (2–5 line) answers for the following:

1] Define Artificial Intelligence in your own words.

2] What is the difference between Narrow AI and General AI?

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

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

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

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

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

- Understanding language

**Artificial Intelligence (AI)** refers to the ability of computer systems to perform tasks that typically require human intelligence. These tasks include reasoning, learning from experience, recognizing patterns, understanding natural language, and making decisions.

At its core, AI involves creating algorithms and models that allow machines to:

* **Learn from data** (machine learning)
* **Adapt to new inputs**
* **Perform human-like tasks** such as speech recognition, image analysis, and problem-solving

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

| **Aspect** | **Narrow AI (Weak AI)** | **General AI (Strong AI)** |
| --- | --- | --- |
| **Definition** | AI designed for a specific task or limited set of tasks | AI with human-level intelligence that can perform any task |
| **Examples** | Siri, Google Translate, Chatbots, Self-driving car systems | A future AI that can think, reason, and learn like a human |
| **Flexibility** | Limited to what it is trained for | Can adapt to and learn any intellectual task |
| **Current Status** | Exists and widely used today | Still theoretical, not yet achieved |
| **Learning Ability** | Learns only within its domain | Would learn and apply knowledge across different domains |
| **Human-like Thinking** | No, it mimics intelligence in a specific way | Yes, it would think and reason like a human |

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

**1. IBM Deep Blue Defeats World Chess Champion (1997)**

**Event:** IBM's AI system **Deep Blue** defeated **Garry Kasparov**, the reigning world chess champion.  
**Importance:**

* Marked the **first time a computer beat a world champion** in a classical chess match.
* Showed the potential of AI to **outperform humans in complex logical tasks**.
* Inspired further AI research in game theory, algorithms, and decision-making systems.

**2. Google DeepMind's AlphaGo Beats Go Champion (2016)**

**Event:** **AlphaGo**, developed by **DeepMind**, defeated **Lee Sedol**, one of the world’s best Go players.  
**Importance:**

* Go is exponentially more complex than chess, making this a much more challenging task.
* Demonstrated the power of **deep learning and reinforcement learning**.

Highlighted how AI can **learn from experience** and improve itself, moving closer to human-like thinking

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

**What is the Turing Test?**

The **Turing Test** is a method proposed by **Alan Turing** in 1950 to determine whether a machine can exhibit **intelligent behavior indistinguishable from that of a human**.

**How it works:**

* A human evaluator interacts (usually via text) with both a **human** and a **machine**.
* If the evaluator **cannot reliably tell which is the machine**, the AI is said to have passed the test.

**Why is it important in AI?**

1. **Benchmark for Intelligence:**  
   It provides a simple and clear **benchmark** for measuring machine intelligence—**can the machine think like a human?**
2. **Guided Early AI Development:**  
   Inspired early research in **natural language processing**, **machine learning**, and **human-computer interaction**.
3. **Human-Centered Focus:**  
   Encouraged the development of AI systems that can **understand, respond, and behave in human-like ways**.

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

**1. Virtual Assistants (e.g., Siri, Google Assistant, Alexa)**

* **Function:** Respond to voice commands, answer questions, set reminders, and control smart devices.
* **AI Role:** Natural language processing, speech recognition, and machine learning.

**2. Recommendation Systems (e.g., Netflix, YouTube, Amazon)**

* **Function:** Suggest movies, videos, or products based on user behavior.
* **AI Role:** Predictive analytics and user preference modeling.

**3. AI in Navigation (e.g., Google Maps, Waze)**

* **Function:** Provides real-time traffic updates, route optimization, and estimated arrival times.
* **AI Role:** Uses AI to analyze traffic data, user input, and historical patterns.