**AI & AUTOMATION**

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

**Artificial Intelligence (AI)** is the branch of computer science that focuses on creating machines or software that can perform tasks typically requiring human intelligence. These tasks include things like learning, reasoning, problem-solving, understanding natural language, recognizing patterns, and making decisions.

In simpler terms, AI is about building computer systems that can **think, learn, and act** in ways that resemble human intelligence.

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

 **Narrow AI** (also called Weak AI) is designed to do **one specific task or a narrow set of tasks very well**—but nothing outside of that. Think of your voice assistant, a recommendation engine, or facial recognition software. It can be incredibly smart and efficient, but it doesn’t "understand" in the human sense and can’t easily apply its knowledge to new, unrelated problems.

 **General AI** (also known as Strong AI or AGI—Artificial General Intelligence) would be capable of **understanding, learning, and applying knowledge across a wide range of domains**, just like a human. It could reason, solve unfamiliar problems, and even possess self-awareness or emotional intelligence. But here’s the kicker: General AI doesn’t exist yet—it’s a concept researchers are still striving toward.

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

 **The Dartmouth Conference (1956):** Often considered the birth of AI as a formal field, this summer workshop brought together brilliant minds like John McCarthy, Marvin Minsky, and Claude Shannon. They proposed that “every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it.” This bold vision laid the foundation for decades of AI research and development.

1. **DeepMind’s AlphaGo Defeats Lee Sedol (2016):** When AlphaGo, developed by Google DeepMind, defeated world champion Go player Lee Sedol, it marked a stunning leap in AI’s ability to handle complex, intuitive tasks. Go is a game with more possible moves than atoms in the universe, and mastering it was long thought to be decades away for machines. AlphaGo’s victory showcased the power of deep learning and reinforcement learning, and it sparked a surge of interest and investment in AI worldwide.

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

The **Turing Test** is a classic benchmark in Artificial Intelligence, proposed by British mathematician and computer scientist **Alan Turing** in 1950. It’s a way to evaluate whether a machine can exhibit intelligent behavior indistinguishable from that of a human.

**Importance of the Turing Test in AI**

1. **Benchmark for AI intelligence:**  
   It provides an early and practical benchmark to assess whether a machine can imitate human-like intelligence in natural language conversations.
2. **Focus on human-like interaction:**  
   The test emphasizes the ability of AI to understand and generate natural language in a way that feels human, which is crucial for many applications like chatbots, virtual assistants, and customer support.
3. **Philosophical significance:**  
   It raises deep questions about the nature of intelligence and consciousness. Can a machine "think" or just simulate thinking? The test encourages discussion about what it means to be intelligent.
4. **Driving AI development:**  
   The challenge of passing the Turing Test has inspired many advances in natural language processing, machine learning, and cognitive computing.
5. **Name 3 real-life applications of AI you use or know about.**

Artificial intelligence can use in our daily life like :-

1. **Healthcare:** AI helps doctors detect diseases like cancer through image analysis, predict patient deterioration, and even assist in robotic surgeries.
2. **Finance:** It powers fraud detection, automates trading, and offers personalized financial advice through smart assistants and apps.
3. **Transportation:** Self-driving cars use AI for navigation, obstacle detection, and decision-making in real time.
4. **Retail:** From personalized product recommendations to managing inventory and predicting trends, AI is transforming how we shop and how businesses run.
5. **Customer Service:** Those helpful chatbots or virtual agents? Yep, AI. They answer questions, resolve issues, and free up human reps for complex queries.