10-Marks Questions (Long Answer – 6 Questions)

1. Explain the concept of an intelligent agent. Discuss the types of agents and their relation to different types of environments with suitable examples.

2. Describe the PEAS (Performance measure, Environment, Actuators, Sensors) framework. Illustrate the PEAS description for at least two intelligent systems (e.g., self-driving car and smart vacuum cleaner).

3. Trace the history of Artificial Intelligence from its inception to the present day. Highlight key milestones and breakthroughs that have shaped the field.

4. Define problem-solving agents. Discuss the various types of problems and how a problem can be formulated for AI-based search algorithms. Provide relevant examples.

5. Compare and contrast different basic search algorithms (such as Breadth-First Search, Depth-First Search, Uniform Cost Search). Discuss their advantages, limitations, and applications.

6. Discuss the concept of rationality in AI. How does rational behavior relate to the performance of intelligent agents operating in uncertain environments?

4-Marks Questions (Short Answer – 8 Questions)

1. What is Artificial Intelligence? Mention any two real-world applications.

2. Differentiate between an agent and an environment in AI.

3. Briefly explain the concept of a rational agent.

4. Define the PEAS model. Why is it important in designing intelligent agents?

5. List and describe any two environment types in AI.

6. What is the difference between single-agent and multi-agent systems? Provide one example for each. 7. Give a brief overview of uninformed (blind) search strategies.

8. What are the key components of a problem formulation in AI?