Question Bank-AIML

Module -1

1) Discuss the various definitions of AI and explain how they reflect the different perspectives on what constitutes intelligence.

2) Describe the key milestones in the history of AI, including important figures and breakthroughs. How have these developments shaped the field as we know it today.

3) What is an intelligent agent, and what are its key components.

4) Explain the concept of the Turing Test. What are its implications for measuring machine intelligence?

5) Imagine you need to create an intelligent agent for a personal assistant, Describe the characteristics and architecture of the agent you would design.

6) Explain different types of agents with example.

7) Based on the definitions of intelligence and the discussions around intelligent agents, propose a framework for evaluating the effectiveness of an AI system in a medical domain What metrics would you use?

8) What is the difference between fully observable and partially observable environments? In what kinds of scenarios might an agent encounter partial observability explain.

9) Choose a real-world scenario involving an intelligent agent (e.g., autonomous vehicles, smart home systems, etc.,). Describe the agent, its environment, and how the agent interacts with it.

10) Describe the architecture of an intelligent agent. How do perception, decision-making, and action processes interact within this architecture?

11) Describe the properties of task environment with example.

12) Develop a python program for utility-based agent that demonstrates a scenario where the agent decides whether to stay in a location or move to another location based on the utilities of those locations.

Module-3

1) Define machine learning

2) Describe the three main types of machine learning: supervised learning, unsupervised learning, and reinforcement learning. Provide examples for each type.

3) What constitutes a well-posed learning problem? Explain its components and why it is important for machine learning systems.

4) Outline the key steps involved in designing a machine learning system. Discuss the importance of each step.

5) What are some common challenges and limitations faced in machine learning? Provide examples specific to data, algorithms, and deployment.

6) Explain the concept learning task. How does it relate to the broader scope of machine learning?

7) Describe the Find-S algorithm and discuss its algorithmic steps and limitations.

8) Explain the Candidate Elimination Algorithm and how it differs from the Find-S algorithm in its approach to concept learning.

9) Discuss the inductive bias of the Candidate Elimination Algorithm. How does inductive bias affect the learning process?

10) Explain List-then-Elimination algorithm

11) What is a decision tree, and how is it represented? Discuss its structure and components.

12) Outline the types of problems that are best suited for decision tree learning. What are its advantages?

13) Describe the ID3 algorithm for constructing decision trees. What are the key steps involved, and how does it handle continuous attributes?

14) Problems on Find-S, Candidate Elimination, Decision tree and ID3 algorithms