SAPTHAGIRI NPS UNIVERSITY
UNMATCHED EXCELLENCE, UNLIMITED POTENTIAL

Question Bank- Fundamentals of AI & ML

Module 1

2 marks

1. Define the term Artificial Intelligence.
2. What is an intelligent agent?
3. Define rational agent?
4. What are different types of agents?
5. Give the structure of AI agent?
6. Differentiate between simple reflex and model based reflex agent with example.
7. What do you mean by rational agent? Mention the difference between utility-based agent and goal-based agent.
8. What is agent environment in AI. Differentiate between deterministic and stochastic environment
9. An AI agent of robot vaccum cleaner is to be designed. Describe the PEAS representation for it.
10. Describe about Sensors and Actuator in Intelligent agent.

5 marks

1. Describe about the various components of AI?
2. Cite different applications of AI.
3. Comment on the statement : AI is a boom or a curse
4. Share your views on the statement : AI is a boon to the society
5. Define agent. Which are the different types of agent?
6. Define each term in PEAS representation.
7. Explain about the turing test approach.

10 marks

1. What are the dimensions of Artificial Intelligence? Explain with examples of each.
2. Explain about agent environment in AI. Describe different types of environment.
3. Briefly explain about history of Artificial Intelligence.

Module 2

2 marks

1. Define the terms: search space, path cost, optimal solution

2. What is searching? What are the properties of search algorithm?

3. Differentiate between informed and uninformed search

4. Describe about blind search

5. Explain about bidirectional search algorithm

6. What do you mean by heuristic function?

7. Define open list and closed list.

5 marks

1. Describe about Uniform Cost Search with an example

2. Describe about Depth Limited Search

3. Explain about Iterative Deepening Depth First Search

4. Find the optimal path for given graph using DFS algorithm with appropriate justification

[Problem]

6. Find the optimal path for given graph using BFS algorithm with appropriate justification.

[Problem]

7. What are the advantages and limitations of Greedy Best First Search. Find the optimal path for given graph using Greedy best first search algorithm

[Problem]

8. Find the optimal path for given graph using A* algorithm

[Problem]

10 marks

1. Explain A* algorithm. Find the optimal path for given graph using A* algorithm.

[Problem]

2. Explain DFS algorithm. Mention its advantages and disadvantages. Find the optimal path for given graph using DFS algorithm.

[Problem]

3. Explain BFS algorithm. Mention its advantages and disadvantages. Find the optimal path for given graph using BFS algorithm.

[Problem]