Question Bank 1

Subject: Artificial Intelligence **Subject Code: AI 302P**

Class: B.Tech CSE 3rd **Faculty Name: Ms. Reeta Mishra/Dr Neha Jain**

Unit-1

1. Apply the concept of artificial intelligence to a specific industry or domain and discuss potential challenges and solutions.
2. Evaluate the impact of AI technologies on society by analyzing case studies and real-world examples.
3. Apply foundational concepts of AI, such as problem-solving techniques and knowledge representation, to design a solution for a complex problem.
4. Evaluate the effectiveness of different AI algorithms and models in addressing specific tasks or challenges
5. Apply various AI techniques and models, such as neural networks or genetic algorithms, to solve a practical problem or optimize a process.
6. Evaluate the performance of different AI models based on their ability to achieve desired outcomes in specific scenarios.
7. Analyze a given problem and represent it as a state space search, applying appropriate search algorithms to find solutions.
8. Evaluate the efficiency and effectiveness of different search strategies in solving complex problems in AI applications.
9. Design and implement a production system or intelligent agent to automate decision-making processes in a specific context or domain.
10. Evaluate the performance of the production system or intelligent agent based on its ability to adapt to changing environments and achieve desired goals.
11. Analyze the characteristics of agents and environments in a given AI scenario and propose strategies to optimize agent-environment interactions.
12. Evaluate the impact of agent characteristics, such as autonomy and rationality, on the overall performance of intelligent systems.
13. Design and implement a search algorithm to solve a complex problem in AI, considering factors such as search space complexity and heuristic information.
14. Evaluate the effectiveness of the search algorithm based on its ability to find optimal solutions within resource constraints.
15. Apply real-time search algorithms to a dynamic problem scenario, such as pathfinding in a robotics application or resource allocation in a distributed system.
16. Evaluate the performance of the real-time search algorithm in terms of response time, solution quality, and scalability.

Unit-2

17. Analyze the major challenges in knowledge representation systems in artificial intelligence. How do these challenges impact the development and deployment of AI applications?
18. Discuss the concept of mapping in knowledge representation and provide examples illustrating its importance in AI systems.
19. Evaluate how the frame problem arises in AI and propose strategies to address it effectively.
20. Apply predicate logic to represent complex relationships and propositions in AI systems.
21. Discuss the role of facts in logic and how they are utilized in reasoning processes.
22. Describe the concept of representing instances and their relationships in AI systems using semantic networks or other suitable methods.
23. Evaluate the effectiveness of representing Isa relationships in knowledge representation systems.
24. Explain the resolution method and its application in automated reasoning systems.
25. Discuss how procedural knowledge guides problem-solving processes in AI systems.
26. Compare and contrast procedural and declarative knowledge representations in AI.
27. Provide examples demonstrating when each type of knowledge representation is most suitable.
28. Explain how matching is used in knowledge representation and reasoning systems.
29. Discuss the role of control knowledge in directing the inference process in AI systems.
30. Describe symbolic reasoning approaches used to handle uncertainty in AI systems.
31. Evaluate the effectiveness of symbolic reasoning methods in uncertain environments.
32. Define non-monotonic reasoning and discuss its significance in AI systems.
33. Provide examples illustrating situations where non-monotonic reasoning is necessary for effective problem-solving.
34. Explain the principles of statistical reasoning and their application in AI.
35. Discuss the advantages and limitations of statistical reasoning methods in AI systems.