|  |  |  |
| --- | --- | --- |
| **P.V.P Siddhartha Institute of Technology** | **Signature of Invigilator with date:** | **Marks Obtained:** |
| **Department of Computer Science and Engineering** |
| **Course: B.Tech** | **Year: III** | **Semester: I** | **Objective: II** |
| **Regulation: PVP20** | **Maximum Marks:10Marks** | **Session: F.N** |
| **A.Y:2024-2025** | **Date:24/10/2024** | **Duration: 20 min** |
| **Subject Code:** **20CS4501D** | **Subject Name: ARTIFICIAL INTELLIGENCE**  |
| **Registered Number:** | **Name:** |
| **Answer all the Questions. Each Question carries ½ Mark 20×½ M =10M** |
| **S. No** | **Question** | **CO** | **Level** | **Answer**  |
| 1. | What is the primary goal of a planning problem in AI?a) To find the shortest path between two pointsb) To generate a sequence of actions to achieve a specific goalc) To sort a list of numbersd) To classify images | CO1 | L2 |  |
| 2. | In state space search, what does a "state" represent?a) A specific configuration of the problem at a point in timeb) A data structure used to store search algorithmsc) The memory capacity of the computerd) The number of possible solutions | CO1 | L2 |  |
| 3. | What is a planning graph primarily used for?a) Estimating costsb) Sorting datac) Representing possible actions and their effects over timed) Optimizing performance | CO1 | L2 |  |
| 4. | What is the purpose of using propositional logic in planning?a) To perform arithmetic calculationsb) To encode and solve planning problems using logical formulasc) To design neural networksd) To create visual representations of data | CO1 | L2 |  |
| 5. | Which of the following is a common criterion for analyzing planning approaches?a) Complexity b) Accuracy c) Speed d) Feasibility | CO1 | L2 |  |
| 6. | What does hierarchical planning involve?a) Solving problems in a single, linear sequence of actionsb) Using only high-level actionsc) Breaking down tasks into smaller, more manageable subtasks d) Ignoring lower-level details | CO1 | L2 |  |
| 7. | What is a key feature of conditional planning?a) Planning actions based on possible future conditions or outcomesb) Assuming complete informationc) Ignoring environmental changesd) Using static plans | CO1 | L2 |  |
| 8. | How is continuous planning different from traditional planning?a) It stops planning once a solution is foundb) It continuously updates and revises plans based on new informationc) It only plans for one-time tasksd) It ignores ongoing tasks | CO1 | L2 |  |
| 9. | What is the primary challenge in multi-agent planning?a) Coordination among multiple agents b) Computing powerc) Data storage d) Predicting outcomes | CO1 | L2 |  |
| 10. | How does prior knowledge influence the learning process in AI?a) It slows down the learning processb) It helps in making better inferences and decisionsc) It is irrelevantd) It complicates the learning algorithm |  CO1 | L2 |  |
| 11. | What is a key advantage of using probabilistic models in learning?a) They are easy to implementb) They require less datac) They are always more accurate than other modelsd) They can handle uncertainty and variability in data | CO1 | L2 |  |
| 12. | In reinforcement learning, what is a "reward"?a) The amount of time taken to complete a taskb) The initial input to the agentc) The feedback given to the agent to reinforce its actionsd) A static value given at the start | CO1 | L2 |  |
| 13. | In AI, what is "transfer learning"?a) Transferring data from one model to anotherb) Applying knowledge gained from one task to a different but related taskc) Transferring algorithms between computersd) Learning multiple tasks simultaneously | CO1 | L2 |  |
| 14. | In reinforcement learning, what is the function of an "agent"?a) To predict future rewardsb) To create a modelc) To sort datad) To perform actions in an environment to maximize cumulative reward  | CO1 | L2 |  |
| 15. | What is overfitting in the context of learning from examples?a) When a model performs well on training data but poorly on new datab) When a model performs well on new data but poorly on training datac) When a model performs equally well on both training and new datad) When a model cannot make any predictions | CO1 | L2 |  |
| 16. | In reinforcement learning, what is an "episode"?a) A single step in the learning processb) A sequence of actions taken by an agent until a terminal state is reachedc) The time taken to learn a taskd) A random action taken by an agent | CO1 | L2 |  |
| 17. | Which of the following is **NOT true** about lifting in AI?a) It deals with variables and quantifiersb) It is a process used to generalize specific instancesc) It is the same as unificationd) It is used in logic programming | CO1 | L2 |  |
| 18. | What kind of knowledge representation is typically used in forward chaining?a) Probabilistic models b) Genetic algorithmsc) Neural networks d) Rule-based systems  | CO1 | L2 |  |
| 19. | Which type of problem is backward chaining particularly effective for?a) Problems with multiple goals b) Mathematical problemsc) Sorting problems d) Diagnostic problems  | CO1 | L2 |  |
| 20. | Which of the following is **NOT a step** in the resolution process?a) Converting statements to clausal formb) Finding unifying substitutionsc) Performing mathematical calculationsd) Resolving clauses to derive new ones | CO1 | L2 |  |