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| **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 points  b) To generate a sequence of actions to achieve a specific goal  c) To sort a list of numbers  d) 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 time  b) A data structure used to store search algorithms  c) The memory capacity of the computer  d) The number of possible solutions | | | | | | | | | CO1 | | L2 |  |
| 3. | What is a planning graph primarily used for?  a) Estimating costs  b) Sorting data  c) Representing possible actions and their effects over time  d) Optimizing performance | | | | | | | | | CO1 | | L2 |  |
| 4. | What is the purpose of using propositional logic in planning?  a) To perform arithmetic calculations  b) To encode and solve planning problems using logical formulas  c) To design neural networks  d) 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 actions  b) Using only high-level actions  c) 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 outcomes  b) Assuming complete information  c) Ignoring environmental changes  d) Using static plans | | | | | | | | | CO1 | | L2 |  |
| 8. | How is continuous planning different from traditional planning?  a) It stops planning once a solution is found  b) It continuously updates and revises plans based on new information  c) It only plans for one-time tasks  d) It ignores ongoing tasks | | | | | | | | | CO1 | | L2 |  |
| 9. | What is the primary challenge in multi-agent planning?  a) Coordination among multiple agents b) Computing power  c) Data storage d) Predicting outcomes | | | | | | | | | CO1 | | L2 |  |
| 10. | How does prior knowledge influence the learning process in AI?  a) It slows down the learning process  b) It helps in making better inferences and decisions  c) It is irrelevant  d) It complicates the learning algorithm | | | | | | | | | CO1 | | L2 |  |
| 11. | What is a key advantage of using probabilistic models in learning?  a) They are easy to implement  b) They require less data  c) They are always more accurate than other models  d) 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 task  b) The initial input to the agent  c) The feedback given to the agent to reinforce its actions  d) A static value given at the start | | | | | | | | | CO1 | | L2 |  |
| 13. | In AI, what is "transfer learning"?  a) Transferring data from one model to another  b) Applying knowledge gained from one task to a different but related task  c) Transferring algorithms between computers  d) Learning multiple tasks simultaneously | | | | | | | | | CO1 | | L2 |  |
| 14. | In reinforcement learning, what is the function of an "agent"?  a) To predict future rewards  b) To create a model  c) To sort data  d) 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 data  b) When a model performs well on new data but poorly on training data  c) When a model performs equally well on both training and new data  d) When a model cannot make any predictions | | | | | | | | | CO1 | | L2 |  |
| 16. | In reinforcement learning, what is an "episode"?  a) A single step in the learning process  b) A sequence of actions taken by an agent until a terminal state is reached  c) The time taken to learn a task  d) 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 quantifiers  b) It is a process used to generalize specific instances  c) It is the same as unification  d) 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 algorithms  c) 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 problems  c) 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 form  b) Finding unifying substitutions  c) Performing mathematical calculations  d) Resolving clauses to derive new ones | | | | | | | | | CO1 | | L2 |  |