**Program: BE Computer Engineering**

**Curriculum Scheme: Revised 2012**

**Examination: Final Year Semester VII**

**Course Code: CPC703** and **Course Name: Artificial Intelligence**

**Time: 1 hr. Max.Marks:50**

*Note: -All questions are compulsory* and *each carry equal marks.*

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| Q.1 | Which component of intelligence includes decision making, which is the process of selecting the best suitable alternative out of multiple alternatives to reach the desired goal are available? |
| A. | Linguistic Intelligence |
| B. | Problem Solving |
| C. | Perception |
| D. | Learning |
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| Q.2 | Which application of AI is used in Pattern recognition systems? |
| A. | Robotics |
| B. | Neural Networks |
| C. | Fuzzy Logic |
| D. | Expert Systems |
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| Q.3 | Which type of agents are based on condition-action rules, implemented with an appropriate production system, they are stateless devices which do not have memory of past world states? |
| A. | Utility-based agents |
| B. | Table-driven agents |
| C. | Simple reflex agents |
| D. | Goal-based reflex agents |
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| Q.4 | In which of the following Task Environment, the current decision could affect all future decisions? |
| A. | Episodic |
| B. | Sequential |
| C. | Static |
| D. | Dynamic |
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| Q.5 | In the agent type, agent English Tutor has sensors \_\_\_\_\_\_\_\_\_ |
| A. | Display Exercise |
| B. | Set of Students |
| C. | Keyboard entry |
| D. | Testing agency |
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| Q.6 | Which of the following is an example Real-world problem? |
| A. | 8 queen problem |
| B. | Missionaries and Cannibals Problem |
| C. | 8 Puzzle Problem |
| D. | Traveling salesperson problem |
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| Q.7 | In State-space Landscape of Hill climbing algorithm, which part has a flat area where the summit is possible? |
| A. | Global Maximum |
| B. | Local Maximum |
| C. | Shoulder |
| D. | Flat Local Maximum |
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| Q.8 | \_\_\_\_\_\_\_\_\_\_\_\_\_is the process used to harden metals and glass by heating them to a high temperature and then gradually cooling them, thus allowing the material to reach a low energy crystalline state. |
| A. | Stochastic Beam Search |
| B. | Local Beam Search |
| C. | Simulated Annealing |
| D. | Constraint Satisfaction Problem |
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| Q.9 | Which type of Hill Climbing search is similar to best-first search because it focuses on each node instead of one? |
| A. | Stochastic hill climbing |
| B. | Steepest-ascent hill climbing |
| C. | Simple hill climbing |
| D. | Random-restart hill climbing |
|  |  |
| Q.10 | The Time complexity of Depth First Iterative Deepening (DFID) is\_\_\_\_\_\_\_\_\_\_\_\_ |
| A. | O(bd) |
| B. | O(bd) |
| C. | O(bl) |
| D. | O(bd/2) |
|  |  |
| Q.11 | What is the initial value of Heuristic Function h(n), for the following 8 puzzle problem so as to minimize it to h(n)=0? |
| A. | 2 |
| B. | 3 |
| C. | 4 |
| D. | 5 |
|  |  |
| Q.12 | Consider the graph given in Figure, Assume that the-initial state is S and the goal state is 7. The straight line distance heuristic estimates for the nodes are as follows: h(1)=14, h(2)=10, h(3)=8, h(4)=12, h(5)=10, h(6)=10, h(S)=15.    After solving by using A\* search, the closed list will contain all nodes except \_\_\_\_\_\_\_\_ |
| A. | Node 3 |
| B. | Node 6 |
| C. | Node 7 |
| D. | Node S |
|  |  |
| Q.13 | Which method is that, it cutoff the search by exploring less number of nodes, it makes the same moves as a minimax algorithm does, but it eliminates the unwanted branches? |
| A. | Breadth first search |
| B. | Depth first search |
| C. | A\* search |
| D. | Alpha-beta pruning |
|  |  |
| Q.14 | Graph used to represent semantic network is \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| A. | Directed graph |
| B. | Undirected graph |
| C. | Directed Acyclic graph (DAG) |
| D. | Directed incomplete graph |
|  |  |
| Q.15 | In the PEAS description of Wumpus World problem among the sensors, the player will perceive a \_\_\_\_\_\_\_\_\_\_, if Wumpus is present in the room which is directly adjacent to the player. |
| A. | Breeze |
| B. | Glitter |
| C. | Stench |
| D. | Scream |
|  |  |
| Q.16 | Which one from the options would return true/yes for given prolog program?  boy(jay, 123).  girl(jinni, 456).  student(jay, 123). |
| A. | ?-girl(jinni, x) |
| B. | ?-boy(‘jay’, 123) |
| C. | ?-student(jinni, x) |
| D. | ?-student(jay, x) |
|  |  |
| Q.17 | The first order logic equivalent of the following statement is\_\_\_\_\_\_\_\_\_\_\_\_\_  “At least one student failed both History and Biology.” |
| A. | ∀x Student(x) ∧ Fails(x, H) ∧ Fails(x, B) |
| B. | ∃x Student(x) ∧ Fails(x, H) ∧ Fails(x, B) |
| C. | ∃x Student(x) ∧ Fails(x, H) ∧ Fails(x, B) ∧ Takes(x, B) |
| D. | ∃x Student(x) ∧ Fails(x, H) ∧ Fails(x, B) ==> Takes(x, H) |
|  |  |
| Q.18 | Which of the following is incorrect for Deductive Reasoning? |
| A. | Starts from Premises. |
| B. | Conclusion must be true if the premises are true. |
| C. | Reaches from general facts to specific facts. |
| D. | Arguments may be weak or strong. |
|  |  |
| Q.19 | To eliminate the inaccuracy problem in planning problem or partial order planning problem, we can use \_\_\_\_\_\_\_\_\_\_ data structure/s. |
| A. | Queue |
| B. | Stacks |
| C. | Binary Search Tree |
| D. | Planning Graph |
|  |  |
| Q.20 | What is the other name of each plan resulted in partial order planning? |
| A. | Polarization |
| B. | Linearization |
| C. | Memorization |
| D. | Solarization |
|  |  |
| Q.21 | Which type of learning is defined as “a computer program interacts with a dynamic environment in which it must perform a certain goal without a teacher explicitly telling it whether it has come close to its goal? |
| A. | Supervised Learning |
| B. | Unsupervised Learning |
| C. | Reinforcement Learning |
| D. | Semi-supervised Learning |
|  |  |
| Q.22 | Which one of the following is a proposition statement in Proposition Logic of AI? |
| A. | Where is Ram |
| B. | 5 is a prime number |
| C. | What is your name |
| D. | How are you |
|  |  |
| Q.23 | Which of the following Expert System is used to predict the degree and type of lung cancer? |
| A. | PXDES |
| B. | CaDet |
| C. | DENDRAL |
| D. | MYCIN |
|  |  |
| Q.24 | During which step of NLP, what was said is re-interpreted on what it actually meant and It involves deriving those aspects of language which require real world knowledge? |
| A. | Lexical Analysis |
| B. | Semantic Analysis |
| C. | Discourse Integration |
| D. | Pragmatic Analysis |
|  |  |
| Q.25 | Which Component of Expert system uses Forward and Backward Chaining strategies? |
| A. | Knowledge Base |
| B. | Inference Engine |
| C. | User Interface |
| D. | Knowledge Acquisition and Learning |