**20CS/IT504/PE**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **January, 2024** | **Common to CSE & IT** | | |
| **Fifth Semester** | **Artificial Intelligence** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | What is AI? | CO 1 | L1 | 1M |
|  | b) | List out the problem solving agents. | CO 1 | L1 | 1M |
|  | c) | Define Constraint Satisfaction Problem. | CO 1 | L1 | 1M |
|  | d) | Address the applications of AI. | CO 1 | L1 | 1M |
|  | e) | What is unification? | CO 2 | L1 | 1M |
|  | f) | List the type of agent is the wumpus world? | CO 2 | L1 | 1M |
|  | g) | What are the main components of first-order logic? | CO 2 | L1 | 1M |
|  | h) | State Proof by resolution rule. | CO 2 | L1 | 1M |
|  | i) | What is the ontology of artificial intelligence? | CO 3 | L1 | 1M |
|  | j) | Draw semantic net for the fallowing fact “Every dog eats a cat”. | CO 3 | L1 | 1M |
|  | k) | What are reactive systems? | CO 3 | L1 | 1M |
|  | l) | Write the use of expert system shell. | CO 4 | L1 | 1M |
|  | m) | Define induction learning. | CO 4 | L1 | 1M |
|  | n) | List out the key features offered by expert systems to AI. | CO 4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Discuss the historical evaluation of Artificial Intelligence. | CO 1 | L2 | 7M |
|  | b) | Explain Greedy BFS Heuristic Search Technique with an example. | CO 1 | L2 | 7M |
| **(OR)** | | | | | |
| 3 | a) | Illustrate in detail about the relationship between agent and environment. | CO 1 | L3 | 7M |
|  | b) | Explain about A\* algorithm in detail. | CO 1 | L2 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | Explain the process of unification and lifting | CO 2 | L2 | 7M |
|  | b) | Illustrate in detail about forward & backward chaining in propositional logic. | CO 2 | L3 | 7M |
| **(OR)** | | | | | |
| 5 | a) | Explain the basis of Proof by resolution in Propositional logic. | CO 2 | L2 | 7M |
|  | b) | Differentiate between Propositional and First Order Inference with an example. | CO 2 | L3 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Explain the types of reasoning systems used for categories in AI. | CO 3 | L2 | 7M |
|  | b) | Explain Goal stack planning. | CO 3 | L3 | 7M |
| **(OR)** | | | | | |
| 7 | a) | Summarize the concept of semantic net with an example. | CO 3 | L3 | 7M |
|  | b) | Explain script with restaurant example. | CO 3 | L3 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Discuss the role of knowledge engineers in acquisition and representation of domain knowledge for expert systems. | CO 4 | L2 | 7M |
|  | b) | Explain various forms of learning. | CO 4 | L2 | 7M |
| **(OR)** | | | | | |
| 9 | a) | Write candidate Elimination Algorithm. | CO 4 | L3 | 7M |
|  | b) | What is rote learning? Discuss about the limitations and challenges associated with rote learning in AI. | CO 4 | L2 | 7M |

