**18ECD21**

**Hall Ticket Number:**

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| **III/IV B.Tech(Regular/Supply) DEGREE EXAMINATION** | | | |
| **June, 2022** | **Electronics & Communication Engineering** | | |
| **Sixth Semester** | **Artificial Intelligence** | | |
| **Time:** Three Hours | | **Maximum:**50 Marks | |
| *-*-------------------------------------------------------------------------------------------------------------------------------------------- | | | |
| *Answer Question No.1 compulsorily.* | | | (1X10 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |

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| 1. | Answer all questions | | (10X1=10 Marks) | |
|  | a) | What is Artificial Intelligence? CO-1 | |  |
|  | b) | Define state space. CO-1 | |  |
|  | c) | Define Data mining. CO-1 | |  |
|  | d) | Define heuristic search. CO-2 | |  |
|  | e) | What are parameters used for evaluating search algorithm performance. CO-2 | |  |
|  | f) | What is rational agent? CO-3 | |  |
|  | g) | Define a frame. CO-3 | |  |
|  | h) | Define control strategy. CO-4 | |  |
|  | i) | What refers to hypothesis? CO-4 | |  |
|  | j) | What is probability theory? CO-4 | |  |
| **UNIT I** | | | | |
| 2. | a) | Define Artificial Intelligence. Explain the techniques of AI. CO-1 | | 5M |
| b) | Describe the following (a) Intelligent agent and multi-agent systems (ii) multi-perspective integrated intelligence. CO-1 | | 5M |
|  |  | **(OR)** | |  |
| 3. | a) | Describe the problem formulation steps with example. CO-1 | | 5M |
| b) | How many problem types exist? Explain each type with an example. CO-1 | | 5M |
| **UNIT II** | | | | |
| 4. | a) | What is a control strategy? Discuss the most common control strategies used while solving the problems. CO-2 | | 5M |
| b) | Explain Bi Directional search related to BFS. CO-2 | | 5M |
|  |  | **(OR)** | |  |
| 5. | a) | Distinguish between informed search and uninformed search. CO-2 | | 5M |
| b) | Compare and contrast A\* search and AO\* search. CO-2 | | 5M |
| **UNIT III** | | | | |
| 6. | a) | What is an intelligent agent? Explain with neat sketch hand properties. CO-3 | | 5M |
| b) | Illustrate the following with schematic. a) Utility based Agent b) Learning Agent. CO-3 | | 5M |
|  |  | **(OR)** | |  |
| 7. | a) | What is CSP? Explain Constraint Domain. CO-3 | | 5M |
| b) | Justify the need for backtracking to be intelligent in CSP? CO-3 | | 5M |
| **UNIT IV** | | | | |
| 8. | a) | Differentiate between proposition logic& predicate logic. CO-4 | | 5M |
| b) | Explain different approaches and properties of knowledge representation. CO-4 | | 5M |
|  |  | **(OR)** | |  |
| 9. | a) | Differentiate between forward and backward reasoning. CO-4 | | 5M |
| b) | Discuss about Basin Probability and Belief Network. CO-4 | | 5M |

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