**18ECD21**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **August, 2021** | **Electronics & Communication Engineering** | | |
| **Sixth Semester** | **Artificial Intelligence** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | List out the AI techniques. | CO1 | |  |
|  | b) | What is state space search? | CO1 | |  |
|  | c) | Differentiate Uninformed and informed search strategies. | CO2 | |  |
|  | d) | Define Greedy search. | CO2 | |  |
|  | e) | What is rational agent? | CO2 | |  |
|  | f) | Define a frame. | CO3 | |  |
|  | g) | What is optimization in problem solving? | CO3 | |  |
|  | h) | List the approaches to Knowledge representation. | CO3 | |  |
|  | i) | Define control strategy. | CO4 | |  |
|  | j) | What is probability theory? | CO4 | |  |
| **Unit - I** | | | | | |
| 2. | a) | What is an AI? Explain in detail the learning aspects in AI. | CO1 | **5M** | |
|  | b) | Discuss in detail problem solving with AI. | CO1 | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | List and explain different Uninformed Search strategies used in AI. | CO1 | **5M** | |
|  | b) | Illustrate problem types and characteristics. | CO1 | **5M** | |
| **Unit - II** | | | | | |
| 4. | a) | Compare and contrast A\* search and AO\* search. | CO2 | **5M** | |
|  | b) | Explain Best First Search with an example. | CO2 | **5M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | What is an intelligent Agent? Explain different types of Agents. | CO2 | **5M** | |
|  | b) | What is the role of Performance Measure in Intelligent Agents? Explain in detail. | CO2 | **5M** | |
| **Unit - III** | | | | | |
| 6. | a) | Illustrate the following with neat diagram.   1. Utility based agent. ii. Learning agent. | CO3 | **5M** | |
|  | b) | Discuss the approaches to knowledge representation. | CO3 | **5M** | |
|  |  | **(OR)** |  |  | |
| 7. | a) | What is CSP? Explain constraint domain. | CO3 | **5M** | |
|  | b) | Explain formulating problem structure in CSP. | CO3 | **5M** | |
| **Unit - IV** | | | | | |
| 8. | a) | Explain predicate logic representation with reference to suitable example. | CO4 | **5M** | |
|  | b) | Write short notes on knowledge acquisition in expert systems | CO4 | **5M** | |
|  |  | **(OR)** |  |  | |
| 9. | a) | What is Bayesian Belief Network? Explain in detail. | CO4 | **5M** | |
|  | b) | Differentiate forward and backward chaining in detail. | CO4 | **5M** | |

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