**18CSD31**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | | | | | | | |
| **June, 2022** | | | | **Computer science 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) | | | |
| 1. | a) | Define Constraint Satisfaction Problem | | | | CO1 | |  |
|  | b) | Differentiate simple reflex and goal based agents | | | | CO1 | |  |
|  | c) | What is the need for unification in predicate logic? | | | | CO2 | |  |
|  | d) | Define Horn Clause | | | | CO2 | |  |
|  | e) | Define State Space search | | | | CO2 | |  |
|  | f) | What is ROTE Learning? | | | | CO1 | |  |
|  | g) | Differentiate between strips and Abstrips | | | | CO3 | |  |
|  | h) | What is entailment? | | | | CO3 | |  |
|  | i) | Define event? | | | | CO4 | |  |
|  | j) | What is Heuristic function? | | | | CO4 | |  |
| **Unit - I** | | | | | | | | |
| 2. | a) | Discuss the role of AI techniques in solving the examples of problems/games. | | | | CO1 | **5M** | |
|  | b) | What is PEAS information? Design the PEAS information for Taxi Driver Agent and Automated Robot in a manufacturing plant. | | | | CO1 | **5M** | |
|  |  | **(OR)** | | | |  |  | |
| 3. |  | Explain A\* algorithm with pseudo code and suitable example. | | | | CO1 | **10M** | |
| **Unit - II** | | | | | | | | |
| 4. | a) | What are the drawbacks of predicate logic used in representation of facts? Give any two examples where it becomes extremely difficult to use predicate logic for representations. | | | | CO2 | **5M** | |
|  | b) | Explain the working Unification algorithm with suitable example. | | | | CO2 | **5M** | |
|  |  | **(OR)** | | | |  |  | |
| 5. | a) | Explain Knowledge Engineering Process in First Order Logic. | | | | CO2 | **5M** | |
|  | b) | Explain with an example  (a) Forward chaining (b) Backward chaining | | | | CO2 | **5M** | |
| **Unit - III** | | | | | | | | |
| 6. | a) | Explain Semantic Networks in detail. | | | | CO3 | **5M** | |
|  | b) | Explain partitioned semantic network with an example.. | | | | CO3 | **5M** | |
|  |  | **(OR)** | | | |  |  | |
| 7. |  | Explain goal-stack planning using blocks world problem.. | | | | CO3 | **10M** | |
| **Unit - IV** | | | | | | | | |
| 8. |  | Explain learning by taking example in detail. | | | | CO4 | **10M** | |
|  |  | **(OR)** | | | |  |  | |
| 9. | a) | Discuss various examples for expert systems. | | | | CO4 | **5M** | |
|  | b) | Describe expert systems shells in detail. | | | | CO4 | **5M** | |

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