III B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2022
ARTIFICIAL INTELLIGENCE
(Common to CSE and INF)

Time: 3 Hours   **Max. Marks: 70**

Note : Answer **ONE** question from each unit **(5 × 14 = 70 Marks)**
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UNIT-I

1. a) Define Artificial Intelligence. Explain the techniques of A.I. Also   [7M]
        describe the characteristics of Artificial Intelligence.

    b) List and explain the applications of Artificial Intelligence.   [7M]

(OR)

2. a) Explain about problem reduction with an example.   [4M]

    b) Discuss Constrain Satisfaction Problem with the help of   [10M]

        CROSS

        + ROADS

        DANGER

UNIT-II

3. a) Describe the alpha-beta Pruning algorithm with an example.   [7M]

    b) What is predicate logic? Explain the predicate logic   [7M]
        representation with suitable example.

(OR)

4. a) Solve the water-jug problem by writing the production rules.   [7M]

    b) Give a brief note on Axiomatic System.   [7M]

UNIT-III

5. a) Give semantic nets to describe the following: [7M]
        Narayan is a writer
        Narayan lives in Bombay
        Ishwar is a teacher
        Ishwar lives in Bangalore.
        Narayan sent a copy of his book to Ishwar
        Ishwar sent his thanks to Narayan.

    b) What is the significance of knowledge representation? Give   [7M]
        differences between database and knowledge base.

(OR)

6. a) Provide relational structures for slot and filler structures. [7M] Compare their merits and demerits.

   b) Suggest a semantic network to describe the furniture in a [7M] house.

UNIT-IV

7. a) List out and explain the characteristics features of expert [7M] system.

   b) Define certainty factor. What are the components of certainty [7M] factor?

(OR)

8. a) Discuss the Bayesian Belief networks with an example. [10M]

   b) Discuss in brief about Dempster-Shafer theory. [4M]

UNIT-V

9. a) Discuss Membership functions in detail. [7M]

   b) Explain inference rules in fuzzy logic. [7M]

(OR)

10. a) Differentiate variables and hedges. [7M]

    b) Discuss the architecture of fuzzy systems. [7M]

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