MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : PEC-IT501B   Artificial Intelligence

Time Allotted : 3 Hours

Full Marks :70

The Figures in the margin indicate full marks.
Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer any ten of the following :   [1 x 10 = 10]

    (I)   what are the two characteristics of heuristic knowledge?

    (II)   List the quantifiers in first order logic.

    (III) List the two types of Parsing

    (IV)   The first and the most simple step in problem-solving is:
           a. Goal Formulation   b. Problem Formulation   c. Path Costing   d. None of the above

    (V)   which search algorithm requires less memory?

    (VI)   Knowledge-based agents are composed of two main parts. What are they?

    (VII) How Many Data Type Predicates are there?
           a. one.   b. Two.   c. Three.   d. Four.

    (VIII) Define Explanation-based learning?

    (IX)   A production system consists of _____ steps
           a. one.   b. Two.   c. Three.   d. Four

    (X)   Face Recognition system is based on which type of approach?

    (XI)   Define Flat Local Maximum ?

    (XII) List the four ways of knowledge representation.

Group-B (Short Answer Type Question)
Answer any three of the following   [5 x 3 = 15]

2. Explain DFS in AI.   [5]

3. what are the kind of knowledge which needs to be represented in AI systems?   [5]

4. Explain PEAS Representation Model with an example.   [5]

5. What are the differences between the A* algorithm and the greedy best-first search algorithm?   [5]

6. Explain Utility based agents with suitable diagram.   [5]

Group-C (Long Answer Type Question)
Answer any three of the following   [15 x 3 = 45]

7. (a) Define Tic-Tac Toe Problem.   [3]

   (b) Explain with an Example   [12]

8. Explain Bidirectional search algorithm with an example   [15]

9. Discuss about features of environment.   [15]

10. (a) State the main features of Hill Climbing Algorithm.   [3]

    (b) Compare Simple hill Climbing algorithm with Steepest-Ascent hill-climbing   [8]

    (c) what is Simulated Annealing?   [4]

11. Give some application areas of AI in Healthcare sector?   [15]

*** END OF PAPER ***

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