Full Marks: 40
Pass Marks: 18
Time: 2 hrs.

BIM / Seventh Semester / IT 228: Artificial Intelligence

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"
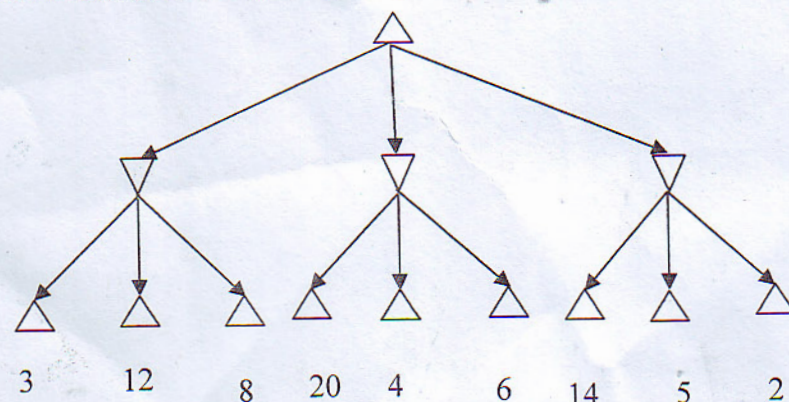
1. **Brief Answer Questions:** [10 × 1 = 10]

   i. Define Omniscience.

   ii. Define sequential environment.

   iii. Write Modus Ponen Rule.

   iv. In NLP, why semantic analysis is used?

   v. What does a Production Rule Consist Of?

   vi. Define fuzzy set and crisp set.

   vii. Compare expert system and human expert.

   viii. Define disjunctive normal form.

   ix. Write any one importance of artificial intelligence.

   x. What do you mean by fringe nodes?

Group "B"

Short Answer Questions: [5 × 4 = 20]

2. With suitable example write on crossover operator and mutation in Genetic Algorithm.

3. Explain Mc-Colloch-Pits model of neuron.

4. Write the steps used in Searching. Justify the statement "the alpha beta pruning game playing search is better than mini max game playing search" with the help of following game tree.

3   12   8   20   4   6   14   5   2

5. Define resolution. Consider the following Knowledge Base "It is raining or it is snowing or it is dry. It is warm. It is not raining. It is not snowing. If the weather is nice, then it is good to walk. If the weather is dry and warm, the weather is nice." Prove that "It is good to walk" by using inference rule.

6. There are two jugs, a 4-gallon one and a 3-gallon one. Neither jug has any measuring markers on it. There is a pump that can be used to fill the jugs with water. How can you get exactly 2 gallons of water in 4 gallon jug? Represent the above problem in production rule system.

Group "C"

Comprehensive Questions: [2 × 5 = 10]

7. In which situation Case Base Reasoning is appropriate? Explain.

8. Why is learning important for agent? How it learns? Explain.

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