1T01875 - T.E. Computer Science & Enginering (Artificial Intelligence & Machine Learning)
(Choice Based) (R-2019 'C' Scheme) SEMESTER - V / 48893 - Artificial Intelligence
QP CODE: 10029721   DATE: 29/05/2023

[3 hrs]   [80 Marks]

Note: 1. Question 1 is compulsory
        2. Answer any three out of remaining question
        3. Assume suitable data where required

Q1   Solve **any 4**
  a) Explain applications of AI in the field of healthcare?   **5**
  b) Draw and explain architecture of Expert System   **5**
  c) Compare goal-based agent with knowledge-based agent.   **5**
  d) Write a PROLOG program for factorial of given number.   **5**
  e) Write PEAS for English Speaking Tutor   **5**

Q2
  a) Explain the steps involved in converting the propositional logic statement into   **10**
         CNF with suitable example
  b) Define chromosome, selection, fitness function, cross over and mutation as used   **10**
         in Genetic Algorithm. Explain how Genetic Algorithm in works.

Q3
  a) Explain bayes theorem with example.   **10**
  b) Explain Hill Climbing algorithm. Explain problems faced by hill climbing   **10**
         algorithm.

Q4
  a) "As per the law, it is a crime for an American to sell weapons to hostile nations.   **10**
         Country A, an enemy of America, has some missiles, and all the missiles were
         sold to it by Robert, who is an American citizen."
         Prove that "Robert is criminal." Using forward and backward Chaining.
  b) Enlist different types of environments and Explain environment for 8 queen   **10**
         problem.

Q5
  a) Explain Alpha Beta pruning with example.   **10**
  b) Explain Iterative Deepening Search Algorithm based on performance measure.   **10**

Q6
  a) Explain Utility Based Agents with diagram.   **10**
  b) Explain partial order planner with an example.   **10**

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