09/06/2025 TE CSE-AIML SEM-V C-SCHEME AI QP CODE: 10083059

Time: 3 Hours   **Max Marks: 80**

Instructions:
● Figures to the right indicate max marks.
● Draw appropriate diagram whenever applicable.
● Assume suitable data wherever applicable. State your assumptions clearly.
● **Question number 1 is compulsory.**
● Attempt **any Three** questions from remaining questions.

Q1   **Attempt Any Four from the following. (5 marks each)**   **20**
a) What is PEAS descriptor? Give PEAS descriptor for online English tutor..
b) Write a short note on: AI Perspectives: Acting and Thinking humanly.
c) Define AI. List the applications of AI.
d) What are the different types of learning in AI?
e) Write a Prolog program to calculate the factorial of a given number.

Q2   a) Represent each of the following sentences in first-order logic.   **10**
      1. Every student smiles.
      2. No one talks.
      3. At least one student failed History.
      4. Every person who buys an insurance policy is smart. 5. No
      person buys an expensive policy.

b) Explain how Genetic Algorithm works. Define chromosome, selection,   **10**
fitness function, cross over and mutation as used in Genetic Algorithm.

Q3   a) Explain Bayesian Belief network with example.   **10**
b) Compare and contrast simulated annealing with Hill climbing. Explain problems   **10**
faced by Hill Climbing algorithm.

Q4   a) Illustrate forward chaining and backward chaining in propositional logic with   **10**
example.
b) Explain the different types of environments for Intelligent agents. Explain   **10**
environment for tic tac toe problem.

Q5   a) Explain Alpha Beta Pruning algorithm with an example.   **10**
b) Explain Depth Limit search and Iterative Deepening Search Algorithm.   **10**

Q6   a) Explain Learning agent and Goal based agent with diagram.   **10**
b) What is planning in AI? Explain total order planning with an example.   **10**

_____

83059   **Page 1 of 1**