TE SEM-VI CMPN C-scheme May'2026
Date: 18/05/2026

(Time: 3 Hours) [Total Marks: 80]

Note: i) Question no. 1 is compulsory.
ii) Attempt any three from remaining.
iii) Assume necessary data.

1 Solve Any Four of the following:

(a) What do you mean by Turing Test and Total Turing test? Explain. 5

(b) What is Simulated Annealing? Explain its working. 5

(c) Give PEAS descriptors for Vaccum cleaner. 5

(d) Explain the working of reinforcement learning. 5

(e) What is uncertainty in AI? How is it handled? 5

2 (a) Consider the following statements: 10

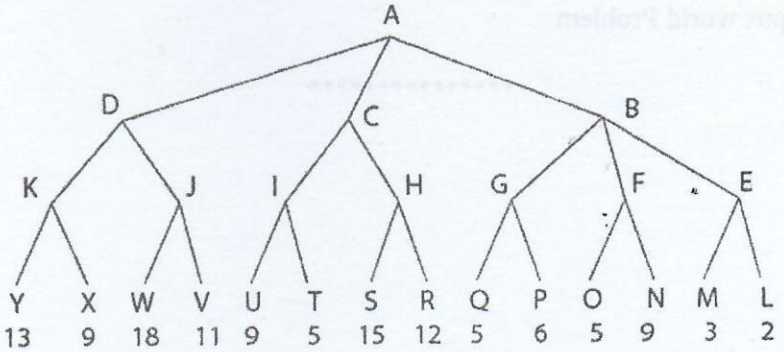
A. All people who are earning are happy
B. All happy people smile
C. Someone is earning

Perform the following tasks:
i) Represent above statements in FOL
ii) Convert each to CNF
iii) Prove that someone is smiling using resolution technique. Draw the resolution tree

(b) Explain Hierarchical and conditional planning with the help of example. 10

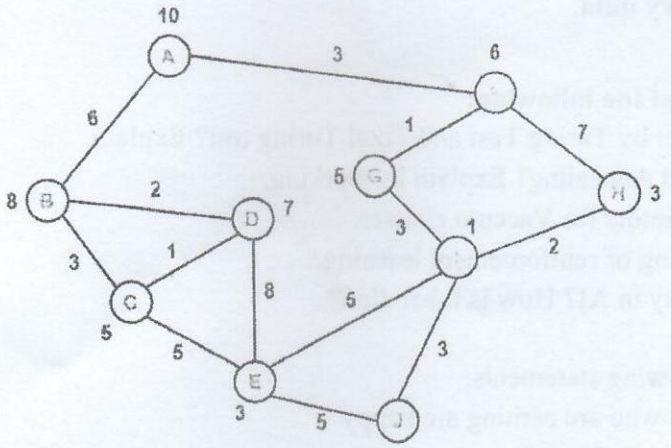
3 (a) Explain different Language models of Natural Language Processing 10

(b) What do you understand by α - β pruning? Apply Min-Max and Alpha Beta Pruning on two player search tree shown in the figure 10



(164)

4 (a) Consider the graph given in figure below. Assume that the initial state is A and the goal state is J. Find a path from the initial state to the goal state using A* search. Also report the solution cost. **10**



(b) Describe various properties of task environment with suitable examples. **10**

5 (a) Explain Hill Climbing Algorithm and problems that occurs in hill climbing algorithm? **10**

(b) Define Belief Network. Describe the steps of constructing belief network with an example. **10**

6 Write detailed note on following. **(Any Two)**

(a) Different applications of AI in Healthcare, Retail and Banking. **10**

(b) Planning Agent for Blocks World Problem. Assume suitable initial state and final state. **10**

(c) Wumpus world Problem **10**

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