

2124
B.E. (Electrical and Electronics Engineering)
Seventh Semester
OE-EE-704: Artificial Intelligence

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

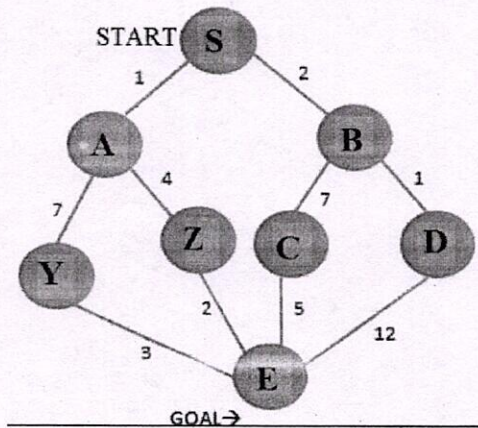
x-x-x

I. Answer the following:-

- Define AI.
- Give the significance of heuristic function.
- What is Min-Max search?
- Convert the following propositional logic statement into CNF "If it is humid then it will rain, since it is humid it will rain".
- State the different types of expert based systems. (5x2)

UNIT - I

- II. a) Explain the difficulties in speech recognition technique in AI.
- b) Consider the search problem below with start state S and goal state E. The transaction cost and heuristic values are given. What is the final cost using A* algorithm to reach from the start State to goal state? (Heuristic values S=10, A=5, B=6, Y=8, Z=5, C=4, D=15, E=0) (2x5)



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(2)

- III. Explain the nature of heuristics with an example. What is the effect of heuristic accuracy on the performance? (10)
- IV. a) Describe Alpha-beta Pruning with algorithm.
b) Explain about the Constraint satisfaction problem in detail. (2x5)

UNIT - II

- V. a) Draw and Describe the Architecture of Utility based agent. How is it different from Model based agent?
b) Compute $P(B/A)$ if $P(A) 0.3$, $P(A/B)$ is 0.4 and $P(B)$ is 0.5 (7,3)
- VI. Describe in detail the hierarchical planning method with an example. (10)
- VII. Write short notes on:
(a) Defuzzification
(b) Learning Agents (2x5)

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