

1079
B. Engg. (Computer Science and Engineering)
5th Semester
CS-503: Artificial Intelligence

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Q. No. 1 which is compulsory and selecting atleast two questions each from Part-A & B.

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- 1.) (a) Define criteria of success in AI.
(b) What is local maxima in search technique?
(c) Define Bayesian network.
(d) How to avoid ridge and plateau in hill climbing?
(e) Write four fuzzy operations.

PART A (attempt any two questions)

(2×5=10)

- 2.) Define State Space representation and give solution of the following problem stepwise using state space search:
You are given two jugs, a 4 litre one and a 3 litre one. Neither have any measuring marks on it. There is a pump that can be used to fill jug with water. How can you get exactly 2 litre of water into a 4 litre jug? (10)
- 3.) Write short notes on: (a) Constraint satisfaction problem (b) semantic nets (c) means-end analysis. (3+3+4=10)
- 4.) Discuss algorithms for Depth first search and A*. Write in short for issues in knowledge representation. (6+4=10)

PART B (attempt any two questions)

- 5.) (a) Find two matrices as max-min and max-product composition based on two fuzzy relations R and S as:

R=

	y_1	y_2
x_1	0.6	0.3
x_2	0.2	0.9

S=

	z_1	z_2	z_3
y_1	1	0.5	0.3
y_2	0.8	0.4	0.7

(6)

(4)

- (b) Write short note on Defuzzification methods.
- 6.) Discuss planning with propositional logic. How hierarchical planning is different from conditional planning? Explain with examples. (5+5=10)
- 7.) Discuss expert system architecture. What are roles of rules in expert system? Explain with help of examples. (5+5=10)

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