

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2025

(B. Tech) Program: EXTC Scheme II/IIB

Regular/Supplementary Examination: LY Semester: VII

Course Code: EXDLC 7031 and Course Name: Artificial Intelligence

Date of Exam: 25/11/25

Duration: 02.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Define an agent, explain the four basic agents that embody principles underlying intelligent systems with example.		CO1	R, U
b)	Explain hierarchical planning with relevant examples.		CO4	R,U
c)	How are Bayesian Networks represented?		CO5	R,U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	What do you mean by partial order planning?		CO4	R,U
b)	How does an online agent search in unknown environment?		CO5	R,U
c)	Design and discuss the expert system in the field of Medicine using suitable case study.		CO6	R,U, Apply
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Describe the following in detail: - a) Hill climbing b) Best first search		CO2	R,U
b)	Consider the graph given in Fig. below. Assume that the initial state is A and the goal state is I. Find a path from the initial state to the goal state using DFS. Also report the solution cost.		CO3	R,U, Apply

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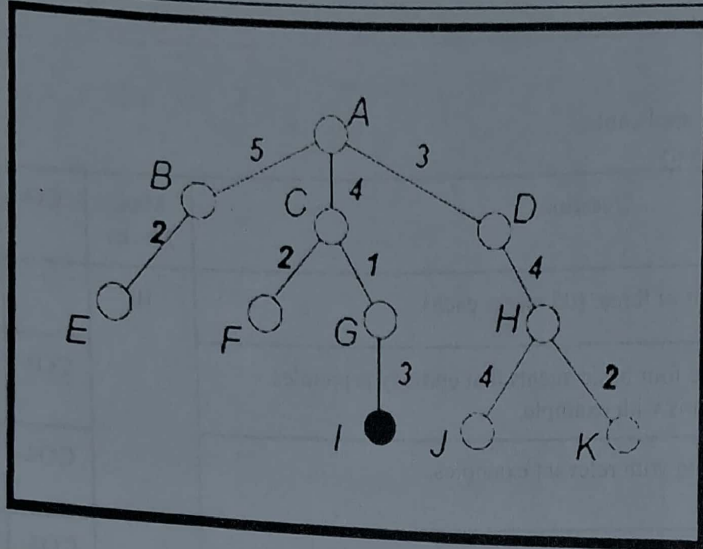
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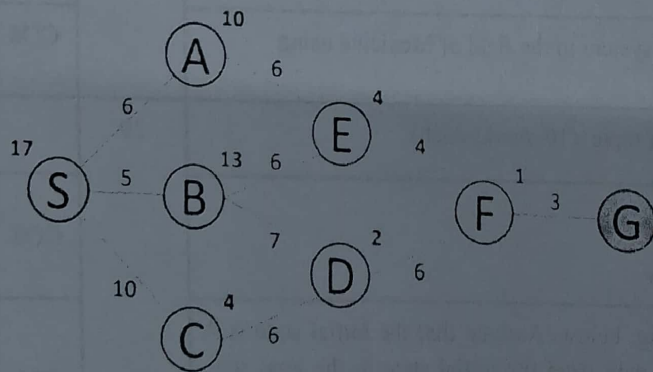


c) Explain how forward reasoning is different from backward reasoning.

Q.4 Solve any **two** questions out of three. (10 marks each)

a) Illustrate the minimax search for the tic - tac - toe game.

b) Perform the A* Algorithm on the following figure. Explicitly write down the queue at each step.



c) Explain the state space representation of Water - Jug problem

CO4 R,U

20

CO2 R,U

R,U,
Apply

CO3

CO4 R,U
