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CBCS SCHEME

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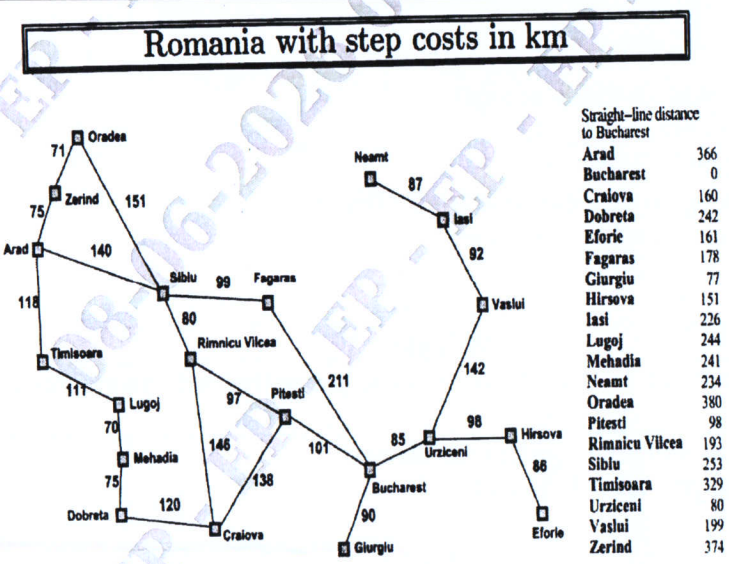
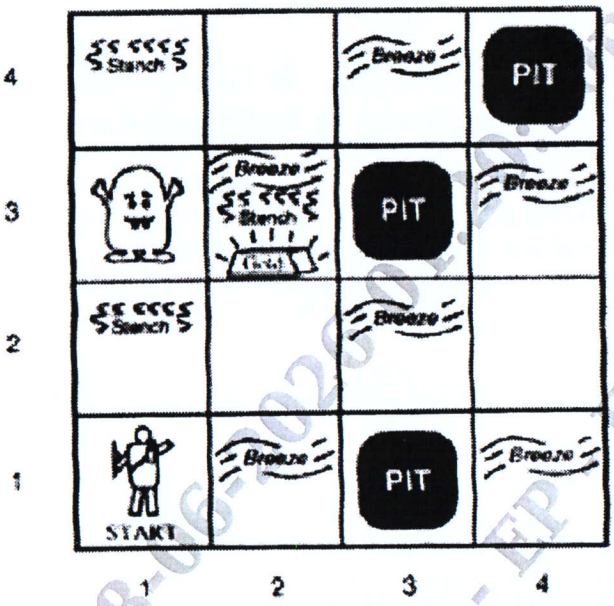
BCS515B

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2026
Artificial Intelligence

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the state of art of AI.	8	L2	CO1
	b.	Evaluate different types of environment and their impact on the design of intelligent agents.	12	L5	CO1
		OR			
Q.2	a.	Discuss on the types of Intelligent agents with diagram.	16	L1	CO1
	b.	Explain the concept of Rationality with an example.	4	L2	CO1
		Module – 2			
Q.3	a.	Describe how a problem-solving agent approaches a well defined problem suck as the vaccum cleaner.	10	L2	CO2
	b.	Given the 8-Queens problem, apply Breadth First Search (BFS) strategy to find the solution. Draft diagram to illustrate the search tree.	10	L3	CO2
		OR			
Q.4	a.	Define Uninformed Search. List different types of uninformed search.	4	L2 L1	CO2
	b.	Explain any three (3) uninformed search.	16	L2 L1	CO2
		Module – 3			
Q.5	a.	 Fig. Q5 Find the cost using informed search methods like i) Greedy Best First Search and ii) Simple Memory Bounded Heuristic Search (SMA*).	10	L3	CO3
	b.	Explain A* search and its optimality with given map illustration in Fig. Q5.	10	L3	CO3

		OR			
Q.6		 Fig. Q6 Use / Utilize the Wumpus world grid to generate propositional logic by finding the syntax, semantics, simple knowledge and inference procedure.	**20**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	Apply the first order logic representation with syntax, semantics..	**10**	**L3**	**CO3**
	b.	Apply the first order logic representation knowledge engineering with appropriate examples.	**10**	**L3**	**CO3**
		OR			
Q.8	**a.**	Differentiate Propositional logic Vs First order logic.	**4**	**L3**	**CO3**
	b.	Write the following sentences in first order logic and prove "John like Bread" using Forward chaining. John likes all kinds of food. Apples are Food. Chicken is Food. Anything anyone eats and isn't killed alive Sue eats everything Bill eats Bread is Food.	**16**	**L3**	**CO3**
		Module – 5			
Q.9	**a.**	Explain Backward Chaining Algorithm and prove that with an example.	**10**	**L2**	**CO4**
	b.	Derive a simple statement using resolution. "If it rains, the ground will be wet"	**10**	**L4**	**CO4**
		OR			
Q.10	**a.**	Write notes on planning graphs in detail.	**10**	**L2**	**CO5**
	b.	Give an account on the algorithms for planning as state-space search.	**10**	**L2**	**CO5**

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