CBCS SCHEME

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BAD402

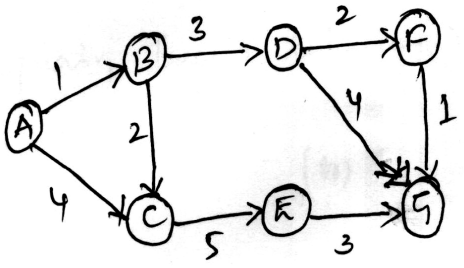
Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024

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.**	Define Artificial Intelligence. Explain the foundation of AI in detail.	**10**	**L1**	**CO1**
	b.	Explain all four different approaches to AI in detail.	**10**	**L1**	**CO1**
		OR			
Q.2	**a.**	Give PEAS specification for : i) Automated taxi driver ii) Medical diagnostic system.	**10**	**L1**	**CO1**
	b.	Differentiation : i) Fully observable Vs partially observation ii) Single agent Vs Multiagent iii) Deterministic Vs stochastic iv) Static Vs Dynamic.	**10**	**L1**	**CO1**
		Module – 2			
Q.3	**a.**	Explain five components and well defined problem. Consider an 8-puzzle problem as an example and explain.	**10**	**L2**	**CO2**
	b.	Discuss in detail in Infrastructure for search algorithm.	**10**	**L2**	**CO2**
		OR			
Q.4	**a.**	Write an algorithm for Breadth – first search and explain with an example.	**10**	**L2**	**CO2**
	b.	Explain Depth first search techniques in detail.	**10**	**L2**	**CO2**
		Module – 3			
Q.5	**a.**	Explain the A* search to minimize the total estimated cost.	**10**	**L3**	**CO3**
	b.	Write an algorithm for hill climbing search and explain in detail.	**10**	**L3**	**CO3**
		OR			
Q.6	**a.**	In the below graph, find the path from A to G. Using Greedy Best First search and A* search algorithm. The values in the table represent heuristic values of reaching the goal node G pass current node.	**10**	**L3**	**CO3**



A	5
B	6
C	4
D	3
E	3
F	1
G	0

Fig Q6(a)

	b.	Explain the syntax and semantion of propositional logic.	**10**	**L3**	**CO3**
Module – 4					
Q.7	**a.**	Explain the syntax and semantics of the first order logic.	**10**	**L2**	**CO2**
	b.	Explain the following with respect to the first order logic i) Assertions and Queries in first order logic ii) The Kinship domain iii) Numbers, sets and lists.	**10**	**L2**	**CO2**
OR					
Q.8	**a.**	Explain unification and lifting in detail.	**10**	**L3**	**CO4**
	b.	Explain Forward chaining algorithm with an example.	**10**	**L3**	**CO4**
Module – 5					
Q.9	**a.**	Explain basic probability Notation in detail.	**10**	**L3**	**CO5**
	b.	Explain Baye's rule and its use in detail.	**10**	**L3**	**CO5**
OR					
Q.10	**a.**	Explain Independence in Quantifying uncertainty with example.	**10**	**L3**	**CO5**
	b.	Explain knowledge Acquiting in detail.	**10**	**L3**	**CO5**

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