Reg. No.:

Name :

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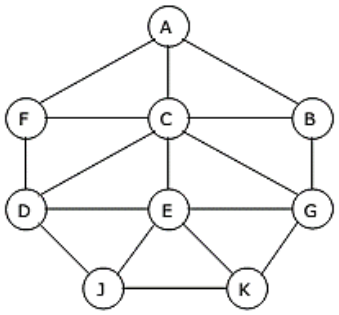
Mid-Term Examinations – August 2021

Programme	:	**B. Tech, Computer Science and Engineering**	Semester	:	**Interim 2021-2022**
Course	:	**Artificial Intelligence**	Code	:	**CSE3007**
Faculty	:	**Simi V.R.**	Slot/ Class No.	:	**C11/ 0040**
Time	:	**1 ½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q. No.	Sub. Sec.	Question Description	Marks
1		Demonstrate the working of the Heuristic search strategy on a real problem.	**10**
2	(a)	Suppose, X is a set of values and Y is the corresponding membership function, $Y = \frac{1}{e^{c(\lvert x-k \rvert)}}$. Graphically analyze the impact of the values of k and c on the fuzzy membership function for a given set X = {1, 2, 3, ……100}	**5**
	(b)	Consider the given fuzzy set, A = {(1, 0.1), (2, 0.5), (3, 0.8), (4, 1.0), (5, 0.7), (6, 0.2)}, find the α-cuts, strong α-cuts, support and core for the fuzzy set A.	**5**
3		Suggest a real-world decision-making problem that can be solved with the help of machine learning. Propose a machine learning model (algorithm) for solving the suggested problem and explain it.	**10**
4		Design a MINIMAX algorithm for a game of your choice. Construct a game tree for the same. What may be the optimal strategies that can be applied in each player's moves to obtain the best outcomes?	**10**
5		Perform Breadth-First Search (BFS) on the graph given below. Find three different solutions. What kind of Data Structure (DS) is used to store the vertices of the graph in a BFS algorithm? How effective is your suggested DS for tracking the solutions? 	**10**

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