Program:	**T.Y.B.Sc CS**	**Semester:**	**V**	**Program Code:**	**UGCS02**
Course:	**Artificial Intelligence**			**Course Code:**	**NUCS501**
Duration:	**1 Hour**	**Examination Pattern:**	**NEP - Autonomous – External**	**Max. Marks:**	**30**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.
4. CO (Course Outcome), KL (Knowledge Level).

Examination:

REGULAR

Q. 1		**Attempt any TWO of the following.**	[10]	CO's	KL's
	(a)	What is Artificial Intelligence? state its major applications.		CO1	L1
	(b)	Explain the structure and functioning of an intelligent agent with a suitable example.		CO1	L2
	(c)	Apply Breadth-First Search (BFS) to find a solution for a given search problem. Explain the steps involved.		CO2	L3
	(d)	Analyze the role of a heuristic function in informed search and examine how it improves the search process.		CO2	L4
Q. 2		**Attempt any TWO of the following.**	[10]	CO's	KL's
	(a)	Define knowledge representation and list its different forms.		CO3	L1
	(b)	Explain how uncertainty in knowledge affects decision-making in Artificial Intelligence.		CO3	L2
	(c)	Demonstrate the working of Reinforcement Learning using a suitable real-life example.		CO4	L3
	(d)	Compare Regression and Classification and evaluate their suitability for different types of prediction problems.		CO4	L5
Q. 3		**Attempt any TWO of the following.**	[10]	CO's	KL's
	(a)	Identify and describe any two characteristics of task environments.		CO1	L1
	(b)	Analyze and differentiate between A* Search and Greedy Best-First Search with respect to their search strategies and performance.		CO1	L4
	(c)	Apply the K-Nearest Neighbors (K-NN) algorithm to classify a simple set of data and explain the steps involved.		CO4	L3
	(d)	Evaluate the suitability of Artificial Neural Networks for solving complex prediction and classification problems. Give suitable examples.		CO4	L5

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