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2005N566

Candidate's Seat No :_____

IMSc IT (CAD) Sem.-6 Examination

BSCCAD-33

Fundamentals of AIML

Time : 2-30 Hours] **May-2025** **[Max. Marks : 70**

Instructions:

- **Figures to the right indicate Full Marks.**
- **Do not write anything on the question paper.**
- **Write your answers clearly and use examples and diagrams wherever required.**

			Marks
Q.1		Attempt all questions.	[20]
	(1)	What is Artificial Intelligence? Provide an example of AI.	[02]
	(2)	Define the term Blind Search. Give two examples of blind search techniques.	[02]
	(3)	What is Strong AI? Give an example of weak AI.	[02]
	(4)	Define the following terms: (i) NLU (ii) NLG	[02]
	(5)	Define Language Model. Give two examples of popular language models.	[02]
	(6)	What is Unsupervised Learning? List two applications of unsupervised learning.	[02]
	(7)	Write down the difference between Supervised Learning and Reinforcement Learning.	[02]
	(8)	Define the terms: (i) Lazy Learners (ii) Eager Learners	[02]
	(9)	Define CNN. List down two applications of CNN.	[02]
	(10)	Define the given model evaluation parameters: (i) Accuracy (ii) F1-Score	[02]
Q. 2		Attempt any five questions out of eight.	[50]
	(1)	What is learning in AI? Explain different types of learning with examples.	[10]

(P.T.O)

(2) Solve the given 8-puzzle problem using Heuristic Approach. [10]

2	8	3
1	6	4
7		5

Initial State

1	2	3
8		4
7	6	5

Goal State

(3) What is NLP? List and explain the phases of NLP in detail. [10]

(4) Explain the architecture and working of ChatGPT. [10]

(5) What is clustering? Apply the K-Means algorithm over the data (185, 72), (170, 56), (168, 60), (179, 68), (182, 72), and (188, 77) up to three iterations and show the clusters. Initially choose the first two objects as initial centroids. [10]

(6) What is SVM? Explain the SVM algorithm with an example. [10]

(7) What is Cross-Validation? List and explain the types of cross-validation methods. Explain how it improves model performance. [10]

(8) Define RNN. Explain the architecture of RNN. [10]

********** **ALL THE BEST** **********