Basavarajeswari Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN											Course Code	2	3	M	C	A	2	6	1

Second Semester MCA Degree Examinations, November 2024

INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Duration: 3 hrs **Max. Marks: 100**

Note: ***1. Answer any* FIVE *full questions, choosing* ONE *full question from each module.***
2. Missing data, if any, may be suitably assumed

Q. No		*Question*	*Marks*	*(RBTL:CO: PI)*
		MODULE – 1		
1.	**a.**	What is an AI? Explain it with four different types of approaches.	**10**	**(2:1:1.2.1)**
	b.	What is agent program? Explain four basic kinds of an agent program.	**10**	**(2:1:2.2.1)**
		(OR)		
2.	**a.**	Explain any five types of foundations of AI.	**10**	**(2:1:2.2.1)**
	b.	What is PEAS? Explain with an example and mention properties of task environment.	**10**	**(2:1:2.2.1)**
		MODULE – 2		
3.	**a.**	Explain the five components of defining the problem and a simple problem – solving agent.	**10**	**(2:2:2.2.1)**
	b.	Explain BFS and uniform cost search with an algorithm.	**10**	**(2:2:2.2.1)**
		(OR)		
4.	**a.**	Explain any two toy problems.	**10**	**(2:2:2.2.1)**
	b.	Explain the algorithm of depth – limited search and iterative deepening DFS.	**10**	**(2:2:2.2.1)**
		MODULE – 3		
5.	**a.**	What is machine learning? Explain in detail the need of machine learning with a neat diagram.	**10**	**(2:3:2.2.1)**
	b.	What is univariate data analysis? Explain the different techniques used to represent with data visualization.	**10**	**(2:3:2.2.1)**
		(OR)		
6.	**a.**	Briefly Explain different types of ML.	**10**	**(2:3:2.2.1)**
	b.	What is data analytics? Explain 4- layer architecture of data analytics framework.	**10**	**(2:3:2.2.1)**
		MODULE – 4		
7.	**a.**	Explain bivariate and multivariate data analytics by representing with the data visualization.	**10**	**(2:4:2.1.2)**
	b.	What is similarity or instance-based learning? Explain the differences between instance based and model-based leaning.	**10**	**(2:4:2.1.2)**
		(OR)		
8.	**a.**	What is learning technique? Explain different types of learning methods.	**10**	**(2:4:2.1.2)**

Note: (**RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)**

	b.	Explain Nearest – Neighbor learning and weighted k- NN algorithm.	**10**	**(2:4:2.1.2)**

MODULE – 5

9.	**a.**	What are Artificial neurons? Explain in detail with its structure and function representation.	**10**	**(2:5:2.2.1)**
	b.	Explain different types of ANN.	**10**	**(2:5:2.2.1)**
		(OR)		
10.	**a.**	Explain with an algorithm of learning in a multi – layer perceptron.	**10**	**(2:5:2.2.1)**
	b.	Explain Radial Basis function neural network and self – organizing feature map.	**10**	**(2:5:2.2.1)**

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