B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E.   **Semester: V**

Branch: Artificial Intelligence and Machine Learning   **Duration: 3 hrs.**

Course Code: 24AM5AERMD   **Max Marks: 100**

Course: Research Methodology

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

				CO	PO	Marks
			UNIT - I	*CO*	*PO*	**Marks**
1	a)		Define the meaning research? Discuss the objectives of research.	*CO1*	*PO1*	**10**
	b)		Compare and contrast research methods and research methodology. Why is it important to distinguish between the two in the research process?	*CO1*	*PO1*	**10**
			OR			
2	a)		A research study to investigate the impact of social media on youth behavior. Develop a research process based on the steps outlined in the research methodology.	*CO3*	*PO2*	**10**
	b)		Explain why it is crucial to accurately define a research problem before beginning a study. Discuss the potential consequences of poorly defining the research problem and propose strategies to prevent such challenges.	*CO2*	*PO1*	**10**
			UNIT - II			
3	a)		Discuss the significance of a literature review in the research process. Explain how it contributes to clarity, methodology improvement, knowledge enhancements.	*CO3*	*PO2*	**10**
	b)		Outline the steps involved in the process of literature review.	*CO1*	*PO1*	**10**
			OR			
4	a)		Discuss the need for research design and outline features different research designs	*CO1*	*PO1*	**10**
	b)		Design a research study to examine the impact of various teaching methods on student performance. Ensure the research plan incorporates key principles of experimental design.	*CO3*	*PO2*	**10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

				CO	PO	
			UNIT - III			
	5	a)	Explain the types of measurement scales highlighting their characteristics and appropriate uses in research.	*CO1*	*PO1*	**10**
		b)	Identify and explain the key attributes that determine the quality and effectiveness of measurement scales.	*CO1*	*PO1*	**10**
			OR			
	6	a)	Discuss the relative merits and demerits of: (a) Rating vs. Ranking scales. (b) Summated vs. Cumulative scales.	*CO1*	*PO1*	**10**
		b)	Differentiate Qualitative vs. Quantitative data.	*CO1*	*PO1*	**10**
			UNIT - IV			
	7	a)	Discuss the methods for the collection of primary data.	*CO1*	*PO1*	**10**
		b)	Outline the difference between questionnaires and schedules.	*CO1*	*PO1*	**10**
			OR			
	8	a)	Illustrate an appropriate method for data collection from the Machine learning perspective.	*CO2*	*PO2*	**10**
		b)	Outline the advantages and limitations of the case study method?	*CO2*	*PO2*	**10**
			UNIT - V			
	9	a)	Compare and contrast the significance of oral presentation and written reports in research dissemination.	*CO2*	*PO2*	**10**
		b)	What precautions should a researcher take during the interpretation of data to ensure accuracy and validity? Discuss with examples.	*CO2*	*PO2*	**10**
			OR			
	10	a)	Outline different steps in writing report.	*CO1*	*PO1*	**10**
		b)	What are the different types of research reports, and how do their formats and purposes differ?	*CO1*	*PO1*	**10**

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