

U.S.N.

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations**Programme: B.E.****Semester: VI****Branch: Computer Science and Engineering****Duration: 3 hrs.****Course Code: 23CS6AERML****Max Marks: 100****Course: Research Methodology and IPR**

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

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.			UNIT – I	CO	PO	Marks
	1	a)	What is Research? Explain different criteria of Good Research	CO1	PO1	4
		b)	Briefly explain the types of Research.	CO1	PO1	6
		c)	Explain different Research process steps with a flowchart.	CO1	PO1	10
			OR			
	2	a)	Explain two different classes of Explicit communication and Interaction.	CO1	PO1	4
		b)	List and Explain different Quality Requirements that are most relevant in Modern Programming.	CO1	PO1	6
		c)	Write a Short note on Computer Simulation.	CO1	PO1	10
			UNIT – II			
	3	a)	Define Research Problem? Explain the necessity of defining the problem.	CO1	PO1	4
		b)	What are the key points that may be observed by a researcher in selecting a research problem.	CO1	PO1	6
		c)	Describe the techniques of defining a research problem.	CO1	PO1	10
			OR			
	4	a)	How to search for the existing literature.	CO1	PO1	4
		b)	Explain Reviewing the selected literature.	CO1	PO1	6
		c)	Describe developing a conceptual Framework.	CO1	PO1	10

		UNIT – III			
5	a)	A marketing analyst wants to know if three different types of advertisements (TV, online, print) lead to different average product sales. She collects sales data from three groups, each exposed to a different ad type. Identify and Explain what statistical test should be used and why? Elaborate on what a significant result would imply.	CO1	PO1	10
	b)	A quality control engineer monitors a machine that produces bolts. Over time, she records whether each bolt is acceptable (A) or defective (D). She wants to test if defects occur randomly. What is the appropriate test? Identify and Explain.	CO1	PO1	10
		OR			
6	a)	A software company implements a new training program to improve employee productivity. The management believes that the new training leads to an increase in the number of tasks completed per day. A sample of 40 employees who completed the training program had an average task completion of 52 tasks/day with a standard deviation of 5. Historically, the average was 50 tasks/day. i) As a researcher, test the hypothesis at a 5% level of significance using the P-value approach. ii) Clearly define the hypothesis and conclude whether the training is effective.	CO2	PO2	10
	b)	An agricultural researcher wants to study how fertilizer type (Organic, Chemical) and irrigation method (Drip, Sprinkler) affect crop yield. The data is collected in all combinations (2× 2). i) Identify and Explain what statistical test should be used and why? ii) Elaborate on what a significant result would imply.	CO2	PO2	10
		UNIT – IV			
7	a)	A student completes a survey on job satisfaction among IT professionals. His data shows a weak positive correlation between flexible hours and job satisfaction. However, he interprets the result as: “Flexible hours lead to high job satisfaction.” i) Identify and explain the mistake in interpretation. What are some precautions that researchers should take when interpreting data?	CO2	PO2	10
	b)	A postgraduate student has completed a project but is unsure how to begin writing the research report. He is tempted to start with the conclusion and write the report backwards. i) What shouldn't a report be written backward? What are the standard steps in writing a research report? Explain the logical structure and layout of a standard research report.	CO2	PO2	10

			OR			
	8	a)	A student is scheduled to present her research on environmental awareness to a panel. She plans to read her entire research report word-for-word using slides with dense text. i) Identify the problems with her current plan. What are the key elements of an effective oral presentation? In case she wants to continue with her plan, suggest improvements that she can incorporate into her slides.	CO2	PO2	10
		b)	A researcher working for a private company submits a 150-page detailed academic report to senior management. The management team finds it too long and difficult to understand. i) Identify and explain the different types of research reports? Which type would be appropriate in this case and why?	CO2	PO2	10
		c)	Describe the precautions that the researchers should take while interpreting his findings.	CO1	PO1	10
			UNIT – V			
	9	a)	Justify how IP is treated as a global indicator of innovation.	CO1	PO1	4
		b)	Define Patent. What are the conditions for obtaining a patent protection.	CO1	PO1	6
		c)	Describe the different designation of trademark Symbols and explain the Classification of Trademarks.	CO1	PO1	10
			OR			
	10	a)	What is copyright? And write its classes. Explain two rights owned by the copyright owner.	CO1	PO1	4
		b)	What is Trademark? Explain the Eligibility criteria for Trademark.	CO1	PO1	6
		c)	Explain major Amendments in IP Laws and Acts in India	CO1	PO1	10
