Question Paper Code	14071

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Third Semester

M.E. - CAD / CAM

24PCDPC301 - RESEARCH METHODOLOGY

Regulations - 2024

Duration: 3 Hours   Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)
Answer ALL Questions

		Marks	K–Level	CO
1.	Which is the first step in research process?	1	K1	CO1
	(a) Data analysis (b) Problem identification (c) Sampling (d) Report writing			
2.	Which research is based on existing theories?	1	K1	CO1
	(a) Applied (b) Basic (c) Experimental (d) Survey			
3.	Which design is suitable for hypothesis testing?	1	K1	CO2
	(a) Exploratory (b) Experimental (c) Descriptive (d) Case study			
4.	Questionnaire pre-testing ensures:	1	K1	CO2
	(a) Validity (b) Bias (c) Ambiguity (d) None			
5.	Sampling frame refers to:	1	K1	CO3
	(a) Population list (b) Survey tool (c) Sample mean (d) None			
6.	Which scale uses equal intervals?	1	K1	CO3
	(a) Nominal (b) Ordinal (c) Interval (d) Ratio			
7.	Validity measures:	1	K1	CO4
	(a) Truthfulness (b) Consistency (c) Randomness (d) Stability			
8.	Which part discusses findings?	1	K1	CO4
	(a) Introduction (b) Analysis (c) Summary (d) Bibliography			
9.	Footnotes are used to:	1	K1	CO5
	(a) Cite references (b) Add equations (c) List data (d) None			
10.	Bibliography lists:	1	K1	CO5
	(a) Data results (b) References (c) Graphs (d) Tables			

PART - B (12 × 2 = 24 Marks)
Answer ALL Questions

11.	Define scientific method in research.	2	K1	CO1
12.	Explain essential criteria for good research.	2	K2	CO1
13.	Differentiate between descriptive and experimental design.	2	K2	CO2
14.	Explain guidelines for interviewing.	2	K2	CO2
15.	Define population and sampling unit.	2	K1	CO3
16.	Explain cluster sampling.	2	K2	CO3
17.	List the types of hypothesis.	2	K2	CO4
18.	Explain data coding process.	2	K2	CO4
19.	List major sections of research report.	2	K1	CO5
20.	What is the purpose of references in report?	2	K1	CO5
21.	Summarize the importance of hypothesis formulation.	2	K2	CO1
22.	Write short notes on content validity.	2	K2	CO4

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **14071**

PART - C (6 × 11 = 66 Marks)
Answer ALL Questions

23. a) Explain types of research and their applications. *11 K2 CO1*

OR

 b) Discuss objectives, significance, and scope of research methodology. *11 K2 CO1*

24. a) Describe the problems encountered by researchers in India. *11 K2 CO2*

OR

 b) Explain the different types of research designs. *11 K2 CO2*

25. a) Discuss probability and non-probability sampling with examples. *11 K2 CO3*

OR

 b) Explain the important methods of collecting data. *11 K2 CO3*

26. a) Explain the basic concepts concerning testing of hypothesis. *11 K2 CO4*

OR

 b) Explain the steps involved in Chi-Square Test. *11 K2 CO4*

27. a) Explain the format and structure of research proposal. *11 K2 CO5*

OR

 b) Extend your understanding in various types of report. *11 K2 CO5*

28. a) Narrate the precautionary steps to be taken for writing research report. *11 K2 CO5*

OR

 b) Extend in detail on Important Experimental Designs. *11 K2 CO2*