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Question Paper Code	12263
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M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

M.E. - CAD/CAM

20PCDPC301 - RESEARCH METHODOLOGY

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---|-------------------------------|
| 1. List the criteria essential for conducting effective research. | 2,K1,CO1 |
| 2. State the significance of defining a research problem. | 2,K1,CO1 |
| 3. Classify the types of literature review. | 2,K2,CO2 |
| 4. State the basic principles of experimental designs. | 2,K1,CO2 |
| 5. Enumerate essential scaling techniques. | 2,K2,CO3 |
| 6. Specify various methods for collecting primary data. | 2,K2,CO3 |
| 7. Outline the limitations of hypothesis testing. | 2,K2,CO4 |
| 8. How to convert Chi-Square into Phi Coefficient. | 2,K2,CO4 |
| 9. Highlight techniques utilized in data interpretation. | 2,K2,CO5 |
| 10. Define oral presentation and its key characteristics. | 2,K1,CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

- | | |
|---|-----------|
| 11. a) Summarize the key steps involved in the preparation of a thesis, outlining the sequential process from inception to completion. | 13,K2,CO1 |
| OR | |
| b) Elaborate in detail the distinct types of sample designs, elucidating their individual characteristics and applications in research studies. | 13,K2,CO1 |
| 12. a) Describe the various categories of review articles, providing an illustrative example for each to enhance understanding. | 13,K2,CO2 |
| OR | |
| b) Outline the fundamental principle underlying experimental design, emphasizing its core concept and significance in research methodology. | 13,K2,CO2 |
| 13. a) Write a short notes on | |
| (i) Errors in measurement. | 6,K2,CO3 |
| (ii) Developing a theoretical and conceptual framework. | 7,K2,CO3 |

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

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OR

b) Describe the technique of developing measurement tools. *13,K2,CO3*

14. a) Provide a detailed account of the procedural steps involved in hypothesis testing for the comparison of two related samples. *13,K3,CO4*

OR

b) Describe the sequential steps in conducting a Chi-Square Test, elucidating the key stages involved in this statistical analysis method. *13,K3,CO4*

15. a) What is interpretation? Why it is needed and explain the various techniques followed in interpretation. *13,K2,CO5*

OR

b) What are the precautions to be followed in writing a research report Provide a comprehensive explanation of the structure and organization of a research report. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Assess the various problems encountered by the researcher in India. *15,K5,CO1*

OR

b) Evaluate the paramount importance of data collection in the research process, scrutinizing its integral role. Subsequently, conduct a detailed analysis of the importance of both primary and secondary data, delineating their distinctive attributes and the nuanced impact each holds on research outcomes. *15,K5,CO3*