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- 7 (a) Explain ethical considerations in research regarding voluntary participation, privacy, and conflict of interest. (8)
- (b) Discuss fraud, misconduct, and professional honesty in research, including consequences and preventive measures. (7)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9719

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Unique Paper Code : 6203450019

Name of the Paper : Research Methodology

Name of the Course : **B.Voc Software
Development**

Semester : VII

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. The paper has **two** sections. **Section A** is compulsory. Each question is of **5** marks.
3. Attempt any **four** questions from **Section B**. Each question is of **15** marks.

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Section A

1. (a) Define research and describe its characteristics and requirements. (5)
- (b) Differentiate between qualitative, quantitative, and mixed-method research with examples. (5)
- (c) Explain sources for identifying research articles and evaluating their relevance. (5)
- (d) Explain measures of variability and their importance in data analysis. (5)
- (e) Discuss the steps to effectively summarize and draw conclusions from research data. (5)
- (f) Describe the role of professional research societies and their importance in academic research. (5)

Section B

- 2 (a) Explain the various types of research based on purpose and method with suitable examples. (8)
- (b) Discuss the difference between conceptual and experimental research, highlighting their significance in scientific studies (7)

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- 3 (a) Explain how to formulate a clear and concise research problem. (7)
- (b) Discuss the importance of stating the "state of the art" in research and how it is done. (8)
- 4 (a) Explain how to critically present the methodology and data analysis section in a research paper. (8)
- (b) Describe the steps involved in identifying and defining a research problem. (7)
- 5 (a) A study records the following marks obtained by students in a statistics test :
35, 40, 45, 50, 55, 60, 65, 70.
Calculate the mean, median, and mode. (7)
- (b) Compute the variance, standard deviation, and coefficient of variation (CV). (8)
- 6 (a) Discuss the use of citation index and plagiarism checkers in assessing research credibility. (8)
- (b) Explain the peer review process and its significance in ensuring research quality. (7)

P.T.O.