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6. (a) Explain the process of journal submission. 8
- (b) Describe the different stages involved in manuscript review and publication. 7
7. (a) Explain the importance of intellectual property rights and explain how they protect the work of researchers. 8
- (b) Explain ethical challenges in research including issues of fraud, misconduct, and conflict of interest. 7

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3671

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Unique Paper Code : 6203450019

Name of the Paper : Research Methodology

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

Semester : 6

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.

Section A

1. (a) Explain the concept and objectives of research, and describe its role in academic and professional development. 5
- (b) Describe different types of research, including exploratory, descriptive, and experimental research, with suitable examples. 5
- (c) Define a research problem and its characteristics. 5
- (d) Explain the purpose of a literature review. 5
- (e) What is Scientometric analysis? 5
- (f) Describe the role of professional research societies and their importance 5 in academic research.

Section B

2. (a) Describe the role of inductive and deductive reasoning in research. 8

- (b) Differentiate between prospective and retrospective research with suitable examples.
3. (a) Explain the process of identifying a research problem. 8
- (b) Describe the qualities and skills required to become an effective and 7 successful researcher.
4. (a) Explain how to present the methodology and data analysis section in a research paper. 8
- (b) A manufacturer claims the average lifetime of a bulb is 1000 hours. A sample of 50 bulbs shows a mean lifetime of 1040 hours. Population $\sigma = 120$ hours. Test at 5% level. (Critical value: +1.645). 7
5. (a) A study records the following marks obtained by students in a statistics test : 33, 42, 45, 50, 55, 60, 65, 72. Calculate the mean, median, and mode.
- (b) Compute the variance, standard deviation, and coefficient of variation (CV). 7