

5. (a) Describe the steps involved in hypothesis testing with the help of an example. 7.5
 (b) What is plagiarism? Mention any two plagiarism checker tools and explain their purpose. 7.5
6. (a) Explain fraud and misconduct in research. Explain its types, effects on society, and ways to prevent it. 7.5
 (b) Explain copyright and royalty. What type of works are protected under copyright? What happens when a copyright expires? 7.5
7. (a) Explain the placebo effect with suitable examples. How is it used in experimental research? 7.5
 (b) Explain any three intellectual property rights (IPR) in research. How do they protect the work of researchers? 7.5

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **2490 I**

Unique Paper Code : 2343010020

Name of the Paper : Research Methodology

Name of the Course : **B.A(Prog)/B.Sc(Prog)**

Semester : VI

Time : 3 Hours **Maximum Marks : 90**

Instructions for Candidates :

- Write your Roll No. on the top immediately on receipt of this question paper.
- All** parts of Question **1 (Section-A)** are compulsory.
- Attempt any **four** questions from **Section-B**.
- Parts of a question must be answered together.
- Use of scientific calculator is allowed.

Section - A

- Why are objectivity and systematic approach important characteristics of research? 3
 - What do you mean by problem identification in research? 3

- (c) What is the purpose of conducting a literature review? 3
- (d) Explain the three measures of central tendency. 3
- (e) Why is interpretation of data important in research? 3
- (f) How are conclusions drawn from research findings? 3
- (g) Explain the role of descriptive statistics in data analysis. 3
- (h) What do you mean by peer review in academic publishing? Describe the role of reviewers in the peer review process? 3
- (i) Define citation index and its importance. 3
- (j) What is a conflict of interest in research? How can a personal conflict of interest affect ethical publication practices? 3

Section - B

- 2. (a) Differentiate between the following types of research with suitable examples 7.5
 - (i) Experimental vs Non-Experimental Research
 - (ii) Prospective vs Retrospective Research

- (b) A Student has scored the following marks in different tests 10 subjects. 7.5
78 89 67 76 57 88 92 83 85 72
Calculate the mean, median, mode and inter quartile range of the student's marks.
- 3. (a) A journal had published 120 articles in 2019, 130 articles in 2020 and 150 articles in 2021. What will be the cite score and impact factor if journal receive 2200 citations in 2022? 7.5
- (b) Discuss the complete research process in detail, explaining each step and its importance. 7.5
- 4. (a) Researcher has published 8 papers and citations count for each paper are: 7.5
20, 16, 15, 14, 12, 19, 17, 18
Calculate the h-index, g-index, and i10-index for this researcher.
- (b) Explain standard error of mean and estimated standard error of mean. A factory produces metal rods. A quality control team is analysing the length of rods, which is known to have a population standard deviation of 0.05 cm. They take a random sample of 36 rods to estimate the mean length. Calculate the standard error of mean for this sample. 7.5