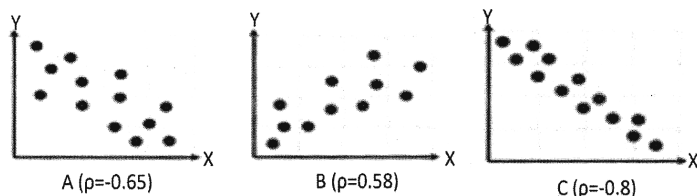


- (iii) Based on your result, explain whether the sample provides enough evidence to reject the company's claim at a 5% significance level.

5. (a) Explain placebo effect with respect to medication. Explain any two ethical issues while administering a placebo? 7.5
- (b) Categorise the following relationship of X and Y as strong/weak positive/negative correlation. How does a change in X influence the change in Y for each case? 7.5



6. (a) Height of 5 students are as follows- 130, 129, 127, 103, 110. Calculate the normalised heights using z-score normalization. 7.5
- (b) Explain the seven steps of the cyclic nature of research. 7.5
7. (a) Write the six essential elements of a research report. 7.5
- (b) Differentiate between the following with suitable examples 7.5
- (i) Descriptive vs Analytical research
- (ii) Quantitative vs Qualitative research

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **275** **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 :

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

Section - A

1. (a) Explain any three tools used for research briefly. 3
- (b) What are academic search engines? List any three academic search engines for scientific research. 3
- (c) What is the purpose of including endnotes and footnotes in a research report? 3
- (d) What is a DOI? How are they better than URLs? 3

- (e) Explain the difference between plagiarism and piracy. 3
- (f) Explain copyrights with respect to IPR. What happens when a copyright expires? 3
- (g) Differentiate between Type I and Type II error in Hypothesis testing 3
- (h) Explain the concept of 'voluntary participation' with respect to ethics in research 3
- (i) Categorise the following research as basic or applied research and explain your answer. 3
 - (i) Development of a new drug for diabetes
 - (ii) Study on how stress effects memory in brain
 - (iii) Designing a stress management program for students before exams
- (j) Given the z-score value of 3.4, calculate IQ and stanine score. 3

Section - B

- 2. (a) What is the peer review process? What are the type of questions that a referee is expected to answer while reviewing a paper? 7.5
- (b) Explain GI tag with the help of an example. Who governs GI Tags in India? Can it be owned by an individual? What is the validity of GI Tags? 7.5
- 3. (a) What are the key practical considerations that must be evaluated for analysing whether a research idea is feasible? Briefly explain any three. 7.5

- (b) Journal of Advanced Data Analytics has 200 articles published in 2022, 180 articles in 2023 and 220 articles in 2024. In 2025, 300 citations were obtained for articles published in 2022, 320 citations for articles in 2023 and 310 citations in 2024. Calculate the impact factor and cite score for 2025 7.5
- 4. (a) Classify the following three cases as either Direct, accidental, mosaic or self plagiarism. Justify your answer. 7.5

Case A: Ravi is writing his thesis on sustainable agriculture. He comes across a paragraph in a journal that perfectly summarizes his point. He copies it word for word into his dissertation without citing it.

Case B: Priya submitted a paper on consumer buying behaviour last semester. This semester, she submits a new assignment with large sections of the same paper including the literature review and methodology.

Case C: Arjun is writing a report on food security. He picks specific phrases from three different sources, weaves them together with minor word changes, and presents it as a new paragraph.

- (b) A company claims that the average weight of its product is 500 grams. A sample of 36 items has a mean weight of 490 grams with a standard deviation of 30 grams. 7.5
 - (i) State the null and alternative hypotheses.
 - (ii) Calculate the test statistic.