

**Fourth Semester FYUGP Degree (Reg) Examination April
2026**

KU4VACSTA362 - STUDY DESIGN IN RESEARCH
2024 Admission onwards

Time : 1.5 hours

Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. What is a hierarchical variable.
2. Define qualitative variable with an example.
3. What is a bar chart used for?
4. List any two limitations of bar diagram.
5. What is sample statistic?
6. What is meant by parameter?
7. Define interquartile range.
8. What is contingency table?

Section B

Answer any 4 questions. Each carry 6 marks.

9. Obtain a 95% confidence interval for the mean of a normal population with standard deviation 3 based on 16 samples taken from this population where the sample mean was calculated as 10.5
10. A sample of 900 items produced by a company is found to have a mean weight of 3.4 kgs and standard deviation 2.61. Test whether the sample is from a population with mean weight 3.25kgs at 1% level of significance
11. A researcher wants to test whether the average blood pressure differs from 120mmHg. Which test should be used? Explain the steps.
12. Explain how quartiles and interquartile range help in understanding the spread of data.
13. Explain the steps involved in testing whether two population proportions are equal.

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14. In a sample of 500 oranges from a large consignment, 40 fruits were considered defective. Estimate the percentage of defectives in the whole consignment.

Section C

Answer any 1 questions. Each carry 14 marks.

15. Explain the different types of epidemiological study designs in detail.
16. Compare case-control and cohort studies.