

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 8 EXAMINATION – SUMMER -2023

Subject Code: BP801TT**Date: 19/06/2023****Subject Name: Biostatistics and Research Methodology****Time:10.30 a.m. to 1.30 p.m.****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) What do you meant by Research? Explain experimental design techniques. | 06 |
| | (b) Discuss- Histogram, Bar diagram. | 05 |
| | (c) Explain chi square test for Goodness of fit. | 05 |
| Q.2 | (a) What do you mean by multiple regression, standard error of regression with pharmaceutical examples. | 06 |
| | (b) Explain cohort and cross sectional studies | 05 |
| | (c) Write short note on ANOVA (Analysis of Variance). | 05 |
| Q.3 | (a) What is meant by regression modelling? Explain hypothesis testing in simple and multiple regression models. | 06 |
| | (b) Explain student‘t’ test and its applications. | 05 |
| | (c) Explain in detail of Probability, Binomial Distribution | 05 |
| Q.4 | (a) Explain regression analysis to assess the influence of independent variable on continuous variable. | 06 |
| | (b) How do you design a parallel group study? | 05 |
| | (c) Explain: Central composite design | 05 |
| Q.5 | (a) Discuss briefly about determination of sample size for simple comparative experiments and for confidence interval of specific width. | 06 |
| | (b) What are “retrospective designs” in observational case studies, list its advantages | 05 |
| | (c) Explain curve fitting method of least square | 05 |
| Q. 6 | (a) What is QbD, Why are DOE essential in a QbD development process? | 06 |
| | (b) What do you meant by factorial design? Write some advantages of factorial design. | 05 |
| | (c) What do you mean by industrial and clinical trial approach with suitable examples | 05 |
| Q.7 | (a) Explain types of correlation and correlation coefficient. Give suitable examples. | 06 |
| | (b) Discuss various phases in designing clinical trial with examples | 05 |
| | (c) Classify Observational and experimental studies | 05 |
