SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
B.Sc. Statistics - END SEMESTER EXAMINATIONS APRIL - 2024
SEMESTER - V
20USTCT5011 - Regression Analysis

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Define partial correlation coefficients. How are they used to measure the relationship between variables while controlling for the effect of other variables?
2. Discuss the relationships among simple, multiple, and partial correlation coefficients.
3. Discuss the test of hypothesis in simple linear regression. What hypothesis is being tested, and how is it evaluated statistically?
4. Explain the process of deleting data points in simple regression analysis. Under what circumstances should data points be deleted, and what are the potential consequences?
5. Provide examples illustrating the application of weighted least squares in simple regression analysis.
6. Describe the data model in multiple linear regressions.
7. What is generalized least squares, and how does it differ from ordinary least squares in multiple regression analysis?
8. Discuss the assumptions about the explanatory variable in GLM.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain biserial correlation coefficients. In what situations are biserial correlation coefficients preferred over other types of correlation coefficients?
10. Describe the data model in simple linear regression. What are the key components of the model, and how are they related?
11. Explain the principles of weighted least squares. How does weighted least squares address the issue of heteroscedasticity in regression analysis?

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12. Discuss the properties of least squares estimators in multiple regressions. How do these properties contribute to the reliability of the model's estimates?
13. Explain the significance of testing a subset of regression coefficients equal to zero in MLRM.

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