B.Sc. DEGREE EXAMINATION,APRIL 2020
III Year VI Semester
Regression Analysis

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define partial correlation
2. Give an example for multiple correlation coefficient
3. What are the slope and intercept of simple linear regression model?
4. Write the formulae for finding coefficient of determination in simple linear regression.
5. What is standard error?
6. When do you say fit is good?
7. Define outlier.
8. Write the linear form for the function $y = \beta_0 x^{\beta} 1$
9. What do you mean by residual?
10. State the purpose of least squares method in multiple linear regression
11. What is an explanatory variable?
12. When GLM is used?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Write a note on partial and multiple correlation coefficients.
14. Discuss the analysis of residuals in simple linear regression model.
15. Describe briefly about the transformation of variables to achieve linearity in simple regression.
16. Give a brief note on principles of weighted least squares.
17. Find the parameters of multiple Linear regression model by method of least squares.
18. Elaborate on generalised least squares.
19. Write a note on GLM.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Establish the relation between the simple, multiple and partial correlation coefficient.
21. Estimate the parameters of simple linear regression by the method of least squares.
22. Explain the effect and detection of outliers in simple linear regression using residuals plots?
23. Explain the properties of least square estimators of multiple linear regression?
24. Explain the test procedure for testing subset of regression coefficient equals to zero in general linear model?

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