B.Sc. DEGREE EXAMINATION, APRIL 2018.

III YEAR VI SEMESTER

Core Major - Paper XV - REGRESSION ANALYSIS

Time : 3 Hours Max. Marks : 60

SECTION A – (10 × 1 = 10 marks)

(Q. No. 1-12)Answer any *TEN* questions

1. State the equation of plane of regression of $X\_{1}on X\_{2}and X\_{3}$.
2. What is the coefficient of Partial correlation?
3. Define regression analysis.
4. State the basic assumptions of linear regression analysis.
5. What is an outlier?
6. What violated assumptions on transformation of variables?
7. Express the linear model of the multiple regression.
8. What is the mean sum of squares of an unbiased estimate of $σ^{2}$ for a regression model?
9. What is the assumption of the$ y\_{t}$, multiple linear regression equation?
10. State the distribution of the error sum of square of a multiple regression equation.
11. What are the assumptions on the explanatory variables?
12. Define biserial correlation.

SECTION B – (5 × 4 = 20 marks)

(Q. No. 13-19)Answer any *FIVE* questions

1. State the properties of residuals.
2. List the properties of Multiple Correlation Coefficient.
3. Obtain the least square estimates of parameter of linear regression model.
4. How can achieve linearity in regression analysis?
5. Discuss - Principles of Weighted Least Square.
6. Give the data description and explain MLRM.
7. Describe any two analysis of residuals.

SECTION C – (3 × 10 = 30 marks)

(Q. No. 20-24)Answer any *THREE* questions

1. Derive the coefficient of Partial Correlation in a trirariate case.
2. How will you test the overall significance of a regression model of SLRM?
3. Discuss - Transformation to stabilize variance.
4. List the properties of the least square estimators.
5. Discuss - Testing the equality of regression coefficient.