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JBB-003-1173005 Seat No. _____

M. Sc. (Sem. III) (CBCS) Examination

December - 2019

Statistics : MS - 305

(Applied Econometrics) (Theory)

Faculty Code : 003

Subject Code : 1173005

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) Attempt all questions

(2) Each equation carries equal marks.

1 Answer the following : (any **seven**) **14**

(1) Write a list methodology of Econometrics.

(2) Explain difference between OLS and GLS.

(3) Define Econometrics.

(4) Write application of Regression Analysis.

(5) Explain VIF (Variance Inflation Factor)

(6) Explain Tolerance

(7) Write mean and variance of Run test.

(8) In ordinal least square Estimation $\text{Var} - \text{cov}(\hat{\beta})$ is _____, Where $\sigma 2$ is _____.

(9) In perfect Multicollinearity, $\text{Var}(\hat{\beta}_2)$ is _____ and Var $(\hat{\beta}_3)$ is _____.

(10) Define Multicollinearity.

2 Answer the following : (any **two**) **14**

(1) Explain Regression and also explain Regression vs. Correlation.

(2) Explain types of data.

(3) Explain Classical Linear Regression Model (CLRM).

3 Answer the following : 14

(1) Explain any two assumption of the Classical Linear Regression Model (CLRM).

(2) Explain OLS method.

OR

3 Answer the following : 14

(1) Explain Autocorrelation.

(2) Explain Graphical method to detect Heteroscedasticity.

4 Answer the following : (any **two**) 14

(1) Explain the Coefficient of determination R2. Also write relation between F and R2.

(2) Explain consequences of Multicollinearity.

(3) Test the hypothesis about individual regression coefficients.

5 Answer the following : (any **two**) 14

(1) Discuss methods of Generalized Least Squares (GLS) in Heteroscedasticity.

(2) Write assumption of d - Statistics.

(3) Write type of Multicollinearity.

(4) Draw Ballentine view of Multicollinearity.
