Exam. Code : 103206
Subject Code : 1227

B.A./B.Sc. Semester—VI

QUANTITATIVE TECHNIQUES–VI

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt **five** questions in all by selecting **one** from each Unit. Question No. **1** is compulsory. Use of Non-programmable non-scientific simple calculator is allowed.

I. (a) What do you mean by econometrics ?

(b) Why normalized data is preferred in an econometric model ?

(c) What do you mean by OLS ?

(d) Differentiate between deterministic and stochastic models.

(e) What is R^2 ?

(f) What do you mean by homoscedasticity ?

(g) Define a GLM.

(h) How the concept of efficiency of parameter is different from its consistency ?

(i) In a multivariate model
$$Y_i = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + U_i$$
How to compute VIF for variable X_2 ?

(j) What do you mean by AR and DL models ?

UNIT–I

II. Discuss the nature and scope of econometrics in detail.

III. For a classical linear regression model

$$Y_i = b_0 + b_1 X_i + U_i$$

find out the OLS estimators of the b_0 and b_1. Also prove that if intercept will fall slope will increase and *vice-versa*.

UNIT–II

IV. State and prove Gauss-Markov theorem for GLM.

V. Discuss various measures of goodness of fit of an estimated regression model.

UNIT–III

VI. Do you think multicollinearity is a serious problem in estimating regression models ? If yes, recommend suitable measures to solve the problem of MC.

VII. Discuss the consequences of misspecification of the model wherein an irrelevant variable is included into the model.

UNIT–IV

VIII. What do you mean by spurious regression ? How the existence of autocorrelation inflates the value of R^2 and causes the spurious estimation of regression parameters ?

IX. Discuss the problems of estimating AR and DL models ? How Koyck's transformation helps to solve these problems ?