2022

M.A. / M.Sc.

2nd Semester Examination 2022

ECONOMICS

PAPER—ECO-201

STATISTICS AND BASIC ECONOMETRICS

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group – A

1. Answer any *two* questions. 2×2

(a) Distinguish between SRSWR and SRSWOR.

(b) Briefly present the concept of degrees of freedom used in statistics and econometrics.

(c) Distinguish between point estimation and interval estimation.

(d) What do you mean by the statement that the explanatory variable(s) in the classical linear regression model is (are) non-stochastic?

2. Answer any *two* questions. 2×4

(a) State and prove the 'sum law of variance'.

(b) Define type-1 error, type-II error and power of test and briefly explain the relation among them.

(c) Define frequency chi-square. Explain how it is used for the test of goodness of fit.

(d) Describe briefly the effects of omitting a relevant explanatory variable in the classical linear regression model.

3. Answer any *one* question. 1×8

(a) Briefly explain the maximum likelihood

estimation method. Find the maximum likelihood estimators of the parameters of a normal population on the basis of a SRSWR.

(b) Explain briefly the one way analysis of variance. Explain the advantages of the t-test over the analysis of variance in comparing the means of two populations. 3+5

Group – B

4. Answer any *two* questions. 2×2

(a) Explain briefly why a random error term is incorporated in an econometric model.

(b) Explain the concept of 'dummy variable trap'.

(c) Do you agree with the view that Multicollinearity is not a methodological problem?

(d) Explain the least square bias.

5. Answer any *two* questions. 2×4

(a) Explain the consequences of multicollinearity problem in an econometric model.

(b) What do you mean by Heteroscedasticity? Discuss the Goldfeld Quandt test.

(c) Discuss the Durbin Watson test of autocorrelation. Wnat are its limitations?

(d) What do you mean by 'goodness of fit' of a regression model? How can it be measured?

6. Answer any *one* question. 1×8

(a) Show that the OLS estimators in a general linear model are BLUE.

(b) Derive the rank and order conditions for identification in a Simultaneous Equations system.

[Internal assessment - 10]