2018

M.A. / M.Sc.

2nd Semester Examination

ECONOMICS

PAPER—ECO-201

Subject Code—04

Full Marks : 40

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) What do you mean by null hypothesis ? Why is it so called ?

(b) Define the confidence interval of σ^2 for a normal population with known mean μ and unknown variance σ^2 on the basis of a SRSWR.

(c) Define power of a test. How is it measured ?

(d) Give two main reasons for the inclusion of a disturbance term in a Classical Linear Regression Model (CLRM).

2. Answer any *one* question : 1×6

(a) Prove that $E(XY) = E(X) \cdot E(Y)$ when X and Y are independent. Hence prove that they are also uncorrelated. 4+2

(b) Define frequency χ^2. Show how this distribution is used for testing goodness of fit. 2+4

3. Answer any *one* question : 1×10

(a) Evaluate sampling mean and sampling variance of sample mean for a SRSWOR drawn from a uniform population with mean μ and variance σ^2. 3+7

(b) Establish the likelihood function of α, β and σ_u^2 for a two variable Classical Linear Regression Model (CLRM) with usual assumptions. Also evaluate the Maximum Likelihood Estimators (MLE) of these three parameters. 3+7

Group—B

4. Answer any *two* questions : 2×2

(a) Differentiate between economic model and econometric model.

(b) Explain the concept of multicollinearity by presenting a real life example.

(c) Point out, briefly, the major uses of dummy variable.

(d) Briefly, explain the causes of Autocorrelation in an econometric model.

5. Answer any *one* question : 1×6

(a) Derive the formulae for D-W statistic. What are the limitations of D-W test ?

(b) State and prove the basic consequences of the presence of multicollinearity in an econometric model.

6. Answer any *one* question : 1×10

(a) What are predetermined variable ? What do you mean by LS bias ? Explain the problem of identification using a general simultaneous Equation Model. 2+2+6

(b) Explain the concept of Goodness of fit. How will you test the estimators in a two-variable linear econometric model. 3+7

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