2007

ECONOMICS

PAPER-VIII

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

illustrate the answers whenever necessary

1. Answer any *five* questions : 2x5

(**a) Define likelihood function of a parameter.**

(**b) Distinguish** between **sample mean and sampling mean.**

(c) Define confidence interval of a parameter.

(d) What do you mean by an efficient estimator?

(e) When are sample elements identically and independently distributed?

(f) Distinguish between exogenous variables and pre-determined variables.

(g) Present a real life example of heteroscedasticity in an econometric model.

(h) What do you mean by reduced form equation in the simultaneous equation system?

(Turn Over)

What are the factors that lead to autocorrelation in an econometric model?

(j) What problem occurs due to the presence of exact multicollinearity in an econometric model?

2. Answer any *two* questions: 5x2

(a) A sample of marks of 16 students shows an average of 52 with a population standard deviation of 25. Can you say with 5% level of significance that the population average is greater than 50?

(b) **Explain** the concept of heteroscedasticity. Describe the Goldfeld-Quandt test for the detection of heteroscedasticity in the residual.

(c) How would you test the presence or absence of **parameters** in the classical two-variable linear regressionmodel, $Y_i = a + \beta X_i + U_i$, $(i = 1, 2 \ldots n)$.

(d) Explain the uses of Dummy variables in econometric models.

3. Answer any *two* questions : 10x2

(a) Show that under **usual** assumption of the Classical **Linear Regression** Model the maximum likelihood **estimators** are equivalent to ordinary **least square estimators.**

(b) Show that the OLS estmators **of the parameters of a standard linear regression modelinvolving k regre**ssion are BLUEs.

(c) What do you mean by a simultaneous equation model ? What are structural form equations? Explain the identification problem in this context.

(d) Explain how one can use Durbin-Watson statistic for detecting autocorrelation. What are the limitation of this test?