2016

M.A. / M.Sc.

2nd Semester Examination

ECONOMICS

PAPER—ECO-204

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 of the following : 2×2

(a) Distinguish between sampling error and non-sampling error. Give examples.

(b) What is ANOVA ? State the assumptions of one-way ANOVA.

(c) Define the likelihood function of the parameters of a normal population on the basis of a SRSWR.

(d) Define 'power of test' in the context of text of hypothesis.

2. Answer any *one* question of the following : 1×6

(a) Consider the following two-way classification table. In the table responses of a random sample of 300 adults are recorded. The responses are to the questions if they favour giving more freedom to school teachers to punish students for violence and lack of discipline. Does the sample provide sufficient information to conclude that the two attributes gender and opinions of adults, are dependent ? Use a 1% significance level.

	In favour (F)	*Against (A)*	*No opinion (N)*
Men (M)	93	70	12
Women (W)	87	32	6

(b) Examine the view that two independent variables are always uncorrelated, but two uncorrelated variables may be interdependent.

3. Answer any *one* question of the following : 1×10

(a) State and prove the Central Limit Theorem. Discuss the relevance of this theorem in statistical inference. 2+5+3

(b) What do you mean by the proposition that the explanatory variables in a linear regression model are non-stochastic? Discuss the relevance of this proposition in the estimates and testing of parameters. 5+5

Group—B

4. Answer any *two* questions of the following : 2×2

(a) Define Trace of a matrix 'A' and explain its properties.

(b) What do you wean by Idempotent matrix? Explain by giving one example.

(c) What is autocorrelation? It there is autocorrelation in the disturbance term, what will be its effects on the OLS estimations of parameters?

(d) Explain the problem of multi collinearity?

5. Answer any *one* question of the following : 1×6

(a) Derive the unbiased estimator of the variance and co-variance of the random error term 'u' in econometric model involving 'K' regressors.

(b) From this data for 45 countries the following regression results were obtained :

$$\widehat{\log c} = 4{\cdot}30 - 1{\cdot}34 \log P + 0 \cdot 17 \log Y$$
$$(\cdot 09) \quad (0{\cdot}32) \quad (0 \cdot 20)$$

(standard errors are in parentheses) $R^{-2} = 0{\cdot}27$

Where C = cigarette consumption (pack per year), P = real price of cigarethe per pack, *and* Y = per capita real income.

(i) Interpret the above results.

(ii) What is the elasticity of demand for cigarette with respect to price ? It is statistically significantly different from zero ?

6. Answer any *one* question : 1×10

(a) What is meant by heteroscedasticity problem ? Describe Goldfeld Quandt test for detecting heteroscedasticity problem. What are the remedies to remove this problem in a two variable liner stochastic model ? 2+4+4

(b) Describe the rank and order conditions in a simultaneous equation frame work. Check whether the simple Keynesian model given by :

$$C_t = \alpha + \beta y_t + u_t$$

$$Y_t = C_t + I_t \, , (I_t = \bar{I})$$

is identified or not.
