2017

M.A. / M.Sc.

2nd Semester Examination

ECONOMICS

PAPER—ECO-201

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) What does the level of significance represent in a test of hypothesis ? Explain.

(b) For what main limitation of a point estimator do we use an interval estimator ? Briefly explain.

(c) What is degree of freedom? How is the degree of freedom of a t-statistic determined?

(d) If a is independent of both B and C and also of $B \cap C$, and B is independent of both C and A and also of $A \cap C$, then is C independent of $A \cap B$?

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

(a) Explain the meaning and relevant of the assumption that x is non-stochastic in the regression of y on x.

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

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

(a) Define frequency X^2. Explain how it is used for the test of homogeneity and test of independence. 2+4+4

(b) From time to time the research department of a private bank observes various employees for their work productivity. Recently this department wanted to check whether the four tellers at a branch of the bank serve, on average, the same number of customers per hour. The research manager observed each of the four tellers for a certain number of hours. The following table gives the number of customers served by the four tellers during each of the observed hours.

Teller A	Teller B	Teller C	Teller D
19	14	11	24
21	16	14	19
26	14	21	21
24	13	13	26
18	17	16	20
	13	18	—

At the 5% significance level, test the null hypothesis that the mean number of customers served per hour by each of these four tellers is the same. Assume that all the assumptions required to apply one-way ANOVA procedure hold true.

Group—B

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

(a) State the limitations of R^2 as a measure of goodness of fit. What are the uses of $\bar{R}^2$ (adjusted R^2) ?

(b) Explain graphically the concept of heteroscedasticity. If the heterosecdasticity is present in the disturbance term, what problems will arise ?

(c) Multicollinearity is not a methodological problem, it is the problem of the data matrix—Explain.

(d) Present a real life example of Heterosce dasticity.

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

(a) Distinguish between the concepts of simple correlation and auto-correlation. If autocorretation is present in the disturbance, can you apply OLS method to estimate the parameters in a regression model? It not, why not?

(b) Discuss the concept of dummy variable. Explain the concept of dummy variable trap. How can you come out of this trap?

6. Answer any *one* question from the following : 1×10

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

(b) (i) What is 'simultaneous equations bias'?

(ii) Distinguish between 'exogenous' and 'endogenous' variables.

(iii) Derive the order and rank conditions of identification of equations a simultaneous equations system.

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