

19U446

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Name: .....

Reg.No: .....

**FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2021**

(CBCSS - UG)

**CC19U ME4 C04 - MATHEMATICAL ECONOMICS**

(Statistics - Complementary Course)

(2019 Admission - Regular)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Point out the steps involved in the methodology of econometrics.
2. Explain cross section data.
3. Explain population regression function.
4. Write down the expression for  $\beta$ 's
5. Point out the assumptions behind the classical linear regression model
6. Find the  $cov(\beta_1, \beta_2)$
7. What are the properties of coefficient of determination?
8. Derive the mean and variance of error.
9. Briefly explain the properties of OLS estimators under normality assumption.
10. Explain the ANOVA technique for testing the significance of regression.
11. Explain the model of regression through origin.
12. What do you mean by reciprocal models?

**(Ceiling: 20 Marks)**

**Part B** (Short essay questions - Paragraph)

Answer *all* questions. Each question carries 5 marks.

13. Write a short note on regression analysis.
14. What are the significance of stochastic disturbance term?
15. Explain correlation coefficient.
16. Explain Monte Carlo experiment.
17. Find the confidence interval for  $\beta_2$  (i) if  $\hat{\sigma}_{\beta_2}^2$  is known (ii)  $\hat{\sigma}_{\beta_2}^2$  is unknown
18. Obtain  $100(1 - \alpha)\%$  confidence interval for  $\sigma^2$
19. Explain i) Lin-log model. ii) Semi-Log model.

**(Ceiling: 30 Marks)**

**Part C** (Essay questions)

Answer any *one* questions. Each question carries 10 marks.

20. Find an unbiased estimator of  $\sigma^2$
21. Explain the procedure of testing of hypothesis.

**(1 × 10 = 10 Marks)**

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