

2023

**M.A. 2<sup>nd</sup> Semester Examination****ECONOMICS****Paper – ECO- 201****(Special Exam)****Statistics and Basic Econometrics***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****2x2**

- What do you mean by independence of two events?
- Distinguish between type I and type II errors.
- Distinguish between point estimation and interval estimation.
- Why is a disturbance term included in the classical linear regression model?

**2. Answer any two questions****4x2**

- State and prove the sum law of expectation.
- Distinguish between sample survey and census survey.
- Define frequency chi-square and explain how it is used for the test of goodness of fit.
- Describe briefly the effects of omitting a relevant explanatory variable in the classical linear regression model.

- 3. Answer any one question** **8x1**
- a) Find sampling mean and sampling variance of the sample mean for SRSWR and SRSWOR. (3+5)
  - b) Explain briefly how the difference between means of two populations is tested. (8)

**Group B**

- 4. Answer any two questions** **2x2**
- a) Briefly explain the problem of Multicollinearity.
  - b) Why does autocorrelation occur in an econometric model?
  - c) Briefly explain the works of Econometrics.
  - d) Present a real-life example of Heteroscedasticity.

- 5. Answer any two questions** **4x2**
- a) What are dummy variables? Explain their uses.
  - b) Explain the Durbin-Watson test.
  - c) Explain any one test of Heteroscedasticity.
  - d) Write a note on the consequences of the problem of Multicollinearity.

- 6. Answer any one question** **8x1**
- a) Stating the assumptions, prove that in a general linear regression model the OLS estimators are unbiased.
  - b) What is a Simultaneous Equation System? Explain clearly the problem of least square bias.