

Reg. No. : .....

Name : .....

**II Semester M.A. Degree (C.B.S.S. – Reg./Supple./Imp.) Examination, April 2022**  
**(2018 Admission Onwards)**  
**ECONOMICS/DEV. ECONOMICS/APPLIED ECONOMICS**  
**ECO2C09 – Basic Econometrics**

Time : 3 Hours

Max. Marks : 60

**PART – A**

Answer **all** the **eight** questions in Part – A. Each question carries ½ mark :

- Which of the following is not a distribution free test ?  
 A) Geary Test  
 B) Pearson Product Moment Correlation  
 C) Spearman Coefficient of Correlation  
 D) Kolmogorov-Smirnov Test
- The order condition states that  
 A) If  $k = m - 1 \Rightarrow$  The equation is exactly identified  
 B) If  $k > m - 1 \Rightarrow$  The equation is under identified  
 C) If  $k < m - 1 \Rightarrow$  The equation is over identified  
 D) All the above
- Factor analysis is a remedial measure for  
 A) Autocorrelation  
 B) Multicollinearity  
 C) Heteroscedasticity  
 D) Normality
- Which among the following is an assumption of a linear regression ?  
 A) Multivariate normality  
 B) No or little multicollinearity  
 C) No auto-correlation  
 D) All the above

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5. Regressors are \_\_\_\_\_ in repeated samples.

- A) Random  
 B) Stochastic  
 C) Non stochastic  
 D) Varying

6. Identify the variable which is not known as a dummy variable.

- A) Nominal scale  
 B) Categorical  
 C) Ratio  
 D) Indicator

7. The theorem that justifies normality assumption in OLS regression

- A) Central limit  
 B) Gauss Markov  
 C) Kruskal's  
 D) Taylor's

8. Variance inflation factor detects

- A) Simultaneity  
 B) Linearity  
 C) Autocorrelation  
 D) Multicollinearity

(8×½=4)

**PART – B**

Answer **any eight** questions in Part – B. Each question carries 2 marks. No answer should exceed **one** page :

- Define unbiasedness property of an estimator.
- Give an account of Indirect Least Squares.
- What is the normality assumption ?
- What is GLS method ?
- What do you mean by parameter estimation ?
- Mention any two consequences of heteroscedasticity.
- Define parameter.

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16. Define total sum of squares.

17. What is simultaneous equation bias ?

18. Why do we need econometrics ?

19. Explain the goodness of fit of a statistical model.

(8×2=16)

**PART – C**

Answer **any four** questions in Part – C. Each question carries 5 marks. No answer should exceed **two** and a **half** pages.

- Discuss the nature and scope of econometrics.
- Explain identification problem. Differentiate between the rank and order conditions of identifiability.
- What is the justification of stochastic disturbance term in regression analysis ?
- Mathematically derive coefficients using OLS method for the regression function :  
 $y_i = \beta_1 + \beta_2 x_i + u_i$
- Prove the properties of OLS regression estimators.
- Explain ANOVA in regression.

(4×5=20)

**PART – D**

Answer **any two** questions in Part – D. Each question carries 10 marks. No answer should exceed **six** pages :

- What are the consequences of OLS estimation in the presence of autocorrelation ? Discuss the Durbin Watson d test.
- Explain the two approaches in the hypothesis testing of regression coefficients.
- State and explain the assumptions of classical linear regression model.
- Discuss the nature of simultaneous equation models.

(2×10=20)