

**B.A. (Honours) Examination, 2024**

**SEMESTER-VI**

**Subject: Economics**

**Course: Introductory Econometrics (CC-14)**

**Time: 3 hours**

**Full Marks: 60**

**Attempt any FOUR from the following questions**

**(4 x 15 = 60 Marks)**

1. (a) Define Muticollinearity.  
(b) State and explain the consequences of Muticollinearity.  
(c) What are the remedial measures for tackling the Muticollinearity problem?  
(3+8+4=15)
2. (a) What do you mean by Heteroscedasticity?  
(b) How would you solve the problem of presence of Heteroscedasticity in the Simple Linear Regression Model?  
(c) Define AR (1), MA(1) and ARMA(1,1).  
(3+6)+ (3×2)=15
3. Write short notes on the following.  
(a) Ramsey's RESET for a mis-specified regression model (7.5)  
(b) Dummy Variable Trap (7.5)
4. (a) In the K variable linear regression model, obtain the unbiased estimator of the error variance ( $\sigma^2$ )?  
(b) How is the correlation coefficient in a 2 variable models different from the regression coefficient? Explain.  
(10+5=15)
5. (a) What are degrees of freedom (df)? Explain its significance in statistical analysis.  
(b) Distinguish between population regression function (PRF) and sample regression function?  
(c) Distinguish between Ratio scale and Nominal Scale variables. (5+5+5=15)
6. Consider the following information on family weekly consumption expenditures (C in Rs.) and weekly family income (Y in Rs.).

Family No	C (Rs.)	Y (Rs.)
1	70	80
2	65	100
3	90	120
4	95	140
5	110	160
6	115	180
7	120	200
8	140	220
9	155	240
10	150	260

- (a) Estimate the marginal propensity to consume (MPC) and its standard error.
- (b) Calculate the  $R^2$  of the regression.
- (c) What will be the conditional mean value of C corresponding to  $Y = 280$ . (9+3+3=15)
7. (a) What are the differences in assumptions and estimates of population parameters by the method of maximum likelihood (ML) and the ordinary least square (OLS)?  
(b) What are the properties of a good estimator?  
(c) What are Type I and Type II errors? (9+3+3=15)