



**Part B** **[5 x 6 = 30]**  
**Answer ALL questions. Answer should not exceed 400 words**

- 11.a) Discuss the relationship between econometrics and statistics  
 [Or]  
 11.b) What are the differences between theoretical econometrics and applied econometrics
- 12.a) What you know about multiple linear regression equations?  
 [Or]  
 12.b) What are the properties of  $R^2$  ?
- 13.a) The following table includes the price and quantity demanded for the product

Quantity('000)	8	3	4	7	8	0
Price (in Rs.)	2	4	3	1	3	5

Find out the demand function for the product  $Y = \beta_0 + \beta_1 X + u$   
 [Or]

- 13.b) What are the causes of heteroscedasticity?
- 14.a) What are the consequences of multicollinearity?  
 [Or]  
 14.b) Discuss Nerlove's partial adjustment model
- 15.a) Discuss the features of double log model  
 [Or]  
 15.b) What you know about dummy variable trap?

**Part C** **[5 x 12 = 60]**  
**Answer ALL questions. Answer should not exceed 800 words**

- 16.a) Discuss the nature and scope of econometrics  
 [Or]  
 16.b) Explain the methodology of econometrics
- 17.a) The following table gives data on weekly family consumption expenditure (Y) and weekly family income (X).

Y	70	65	90	95	110	115	120	140	155	150
X	80	100	120	140	160	180	200	220	240	260

Find  $R^2$  and interpret the result  
 [Or]

- 17.b) Explain the assumptions of OLS
- 18.a) Describe the methods available for detecting the problem of autocorrelation  
 [Or]  
 18.b) Given the following observation  
 $\sum x_1 x_2 = 76$ ,  $\sum x_2 x_3 = 42$ ,  $\sum x_1 x_3 = 58$ ,  $x_1^2 = 81$ ,  $\sum x_2^2 = 121$ ,  $\sum x_3^2 = 49$ ,  $n = 10$ ,  
 $\sum y_i^2 = 102$ . Test the problem of multicollinearity with Glauber test.
- 19.a) Discuss the uses of lag in economics  
 [Or]

19.b)

$C_t$	20	11	13	20	24	27	31	35	39	43
$Y_t$	12	13	15	17	20	23	27	29	34	38

Estimate the Koyck distributed lag model of  $C_t = \alpha_0 + \beta_0 Y_t + \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + \dots + u_t$

- 20.a) Explain the uses of dummy variables  
 [Or]  
 20.b) Discuss the distributed lag models.