



**Avinashilingam Institute for Home Science and Higher Education for Women**  
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)  
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B  
Coimbatore - 641 043, Tamil Nadu, India

**Bachelor's Degree Examination – June 2021**  
**VI Semester**

**Class : III UG**  
**Major : Economics**

**Time : 3 Hours**  
**Max. Marks: 100**

**18BECC27 Basic Econometrics - II**

**Part A**  
**Choose the Correct Answer**

**10 x 1 = 10**

1. Specification error means
  - a. Leaving out important explanatory variables
  - b. including unnecessary variables
  - c. choosing the wrong functional form of the model
  - d. all the above
2. As a remedy for multicollinearity, performing this may lead to specification error
  - a. Transformation of variables
  - b. Increasing the sample
  - c. dropping one of the collinear variables
  - d. none of the above
3. Heteroscedasticity is more likely a problem of
  - a. Cross section data
  - b. Time series data
  - c. Pooled data
  - d. All the above
4. In the presence of heteroscedasticity, the estimated coefficients are not
  - a. unbiased
  - b. Consistent
  - c. efficient
  - d. linear
5. The following tests are not valid for a regression model in the presence of autocorrelation
  - a. t test
  - b. F test
  - c. Chi square test
  - d. All the above
6. Multicollinearity is essentially a phenomenon related to the
  - a. Sample
  - b. Population
  - c. Both a and b
  - d. Neither a nor b
7. The value of Durbin Watson 'D' lies between
  - a. -4 and +4
  - b. 0 and infinity
  - c. 0 and 4
  - d. 0 and 1
8. Which is not a plausible remedy for near multicollinearity?
  - a. Principle component analysis
  - b. drop one of the collinear variables
  - c. use longer run of data
  - d. take log of each of the variables
9. Including relevant lagged values of the dependent variable on the right hand side of a regression equation could lead to which of the following?
  - a. biased but consistent estimates
  - b. biased and inconsistent estimates
  - c. Unbiased and inconsistent estimates
  - d. unbiased and consistent estimates
10. Autoregressive distributed lagged model includes
  - a. current and lagged values of the error term
  - b. current and lagged values of the residuals
  - c. lag of the dependent variable and the lagged values of the additional predictor variables
  - d. lags and leads of the dependent variable.

**Part B**

**5 x 6 = 30**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

- 11.a. What are the sources of specification error?  
(or)
- 11.b. What are the different types of specification bias.
- 12.a. Discuss the possible reasons for heteroscedasticity.  
(or)
- 12.b. What are the ways to detect multicollinearity?
- 13.a. Write a note on Partial adjustment model.  
(or)
- 13.b. What are the reasons for hypothesising lags in econometric models?
- 14.a. Examine the consequences of autocorrelation in a model.  
(or)
- 14.b. What heteroscedasticity and why it is a problem? Outline two general tests that could be used to detect it.
- 15.a. Write a note on polynomial models.  
(or)
- 15.b. State the reasons for constructing models with lagged variables. Define a distributed lag model.

**Part C**

**5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or fourpages**

- 16.a. Discuss the consequences of specification errors in a model.  
(or)
- 16.b. Critically analyse the Durbin Watson test for autocorrelation.
- 17.a. Explain in brief the steps involved in the Farrar Glaubar Test for multicollinearity.  
(or)
- 17.b. Write a brief note about any three tests of heteroscedasticity.
- 18.a. Describe the Koyek model.  
(or)
- 18.b. Explain the Adaptive expectation model.
- 19.a. For the model  $Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + U_t$ ;  $t=1,2,3,\dots,n$ , discuss in detail the consequences of multicollinearity on least square estimation. Also describe a test for detecting multicollinearity.  
(or)
- 19.b. For a two variable model,  $Y_t = \beta_0 + \beta_1 X_t + U_t$ ; show that in the presence of ordinary least square estimators are still linear, unbiased but no longer efficient.
- 20.a. Suppose investment in new equipment ( $X_t$ ) in period  $t$  affect the profits ( $Y_t$ ) over several time periods starting from  $t$  to  $t+s$ . Write the above relationship in the form of a distributed lag model. How does the model gets transformed if Koyck lagged structure is used? What is the transformed model called?  
(or)
- 20.b. Discuss briefly the various functional forms of a regression models.

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