

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BA DEGREE EXAMINATION DECEMBER 2025**  
(Fifth Semester)

Branch - **ECONOMICS**

**ECONOMETRICS**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

| Module No. | Question No. | Question   | K Level | CO  |
|------------|--------------|--|---------|-----|
| 1          | 1            | Econometrics differs from Mathematical Economics in that it<br>a) Uses symbols                      b) Uses empirical data<br>c) Is theoretical only                d) Is descriptive                          | K1      | CO1 |
|            | 2            | Which of the following is a step in Econometric methodology?<br>a) Model specification                b) Estimation<br>c) Hypothesis testing                d) All of the above                                | K2      | CO2 |
| 2          | 3            | The principle of Ordinary Least Squares (OLS) is based on minimizing<br>a) Variance                              b) Sum of squared errors<br>c) Mean                                  d) Coefficient           | K1      | CO1 |
|            | 4            | Coefficient of determination ( $R^2$ ) measures<br>a) Total variation                      b) Sample size<br>c) Standard error                      d) Goodness of fit   | K2      | CO2 |
| 3          | 5            | Who introduced the concept of Auto correlation detect method in time series data?<br>a) Durbin–Watson test<br>b) Variance Inflation Factor (VIF)<br>c) t-test<br>d) F-test                                     | K1      | CO1 |
|            | 6            | Autocorrelation usually arises in:<br>a) Time series data                      b) Cross-section data<br>c) Experimental data                      d) Panel data only   | K2      | CO2 |
| 4          | 7            | In a double log model, both variables are expressed in<br>a) Levels                                  b) Percentages<br>c) Logarithms                              d) Ratios                                    | K1      | CO1 |
|            | 8            | The slope coefficient in a double log model represents<br>a) Elasticity                              b) Intercept<br>c) Mean value                              d) Variance                                    | K2      | CO2 |
| 5          | 9            | Ad hoc estimation of distributed lag models often uses<br>a) ARIMA                                  b) Durbin–Watson test<br>c) Almon polynomial                      d) GLS method                            | K1      | CO1 |
|            | 10           | An autoregressive (AR) model explains the current value of a variable in terms of<br>a) Other variables                      b) Its past values<br>c) Forecast errors                      d) Random constants | K2      | CO2 |

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**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

| Module No. | Question No. | Question  | K Level | CO  |
|------------|--------------|---|---------|-----|
| 1          | 11.a.        | Explain the nature of econometrics.   | K2      | CO2 |
|            | (OR)         |   |         |     |
|            | 11.b.        | Relationship between econometrics and mathematical economics.                                 |         |     |
| 2          | 12.a.        | Identify the basic idea of estimation in a three-variable regression model.                   | K3      | CO3 |
|            | (OR)         |   |         |     |
|            | 12.b.        | State the main properties of the OLS method.  |         |     |
| 3          | 13.a.        | Illustrate the consequences of heteroskedasticity.  | K3      | CO3 |
|            | (OR)         |   |         |     |
|            | 13.b.        | Enumerate the effectiveness of the Durbin–Watson test as a tool for detecting autocorrelation |         |     |
| 4          | 14.a.        | Explain the elements of semi log model.   | K4      | CO4 |
|            | (OR)         |   |         |     |
|            | 14.b.        | Analyze the Double Log model and explain its functional form.                                 |         |     |
| 5          | 15.a.        | Examine the concept of Auto Regressive (AR) and Distributed Lag (DL) models in econometrics.  | K4      | CO4 |
|            | (OR)         |   |         |     |
|            | 15.b.        | List out the problems in forecasting.   |         |     |

**SECTION -C (30 Marks)**

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

| Module No. | Question No. | Question  | K Level | CO  |
|------------|--------------|---|---------|-----|
| 1          | 16           | Examine the scope of econometrics in detail.  | K4      | CO4 |
| 2          | 17           | Distinguish the difference between Test of significance “t” test and “F” test.                            | K4      | CO4 |
| 3          | 18           | Assess the role of remedial measures in reducing the effects of heteroskedasticity.                       | K5      | CO5 |
| 4          | 19           | Explain the regression on the one quantitative variable and one qualitative variable with two categories. | K5      | CO5 |
| 5          | 20           | Discuss the application of ARIMA models in time series forecasting.                                       | K6      | CO6 |

Z-Z-Z

END