

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch – STATISTICS

ECONOMETRICS AND PLANNING MODELS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 Econometrics deals with the ----- determination of economic laws.
(i) Qualitative (ii) Theoretical
(iii) Empirical (iv) Graphical
- 2 Which of the following assumptions is concerned with the distribution of the variation around the line of regression (the residuals)?
(i) The distribution is normal. Economic growth accelerates
(ii) Each variation is dependent on previous variation
(iii) The variation increases as X increases
(iv) All the variations are positive
- 3 Indicate the Auto correlation which implies
(i) $E(u_i u_j) = 0$ (ii) $E(X_i u_i) = 0$
(iii) $E(u_i u_j) \neq 0$ (iv) $E(u_i^2) = 0$
- 4 Expressing each endogenous variable as a function of predetermined variable and random error term is
(i) the structural equation (ii) linear equation
(iii) reduced form equation (iv) simultaneous equation
- 5 According to the Harrod-Domar model, what happens if the actual investment(I) in an economy exceeds its steady-state level of investment (I*)?
(i) Economic growth slows down (ii) Economic growth remains unchanged
(iii) Economic growth accelerates (iv) Economic growth becomes negative

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a) Explain the various types of econometrics.
OR
b) Discuss about the forecasting power of economic models.
- 7 a) Explain the statistical assumptions involved in a linear model.
OR
b) Illustrate a single equation two variable linear model with an example.
- 8 a) Evaluate the similarity between Regression and Analysis of Variance.
OR
b) State auto-correlation and illustrate the types of auto-correlation.

Cont...

- 9 a) Explain the order and rank condition for identification.
OR
b) Discuss the steps in estimation of parameters using 2 Stage Least Square (2SLS) Method.
- 10 a) Determine the assumptions made in the Harrod-Domar model.
OR
b) Discuss the key features of Mahalanobis two-sector model in Indian Planning.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a) Elucidate the scope of econometrics with suitable examples.
OR
b) Formulate the criteria for evaluating a model and desirable properties of an economic model.
- 12 a) Develop the OLS estimators of the parameters of a single equation regression model are Best Linear Unbiased Estimators (BLUE).
OR
b) Develop the OLS method of estimating the parameters in a multiple linear regression model.
- 13 a) Explain Durban - Watson test for Auto correlation.
OR
b) Examine the meaning of multicollinearity. Also explain the consequences of multicollinearity.
- 14 a) Given the simple Keynesian model

$$C_t = \alpha + \beta Y_t + u_t$$

$$Y_t = C_t + I_t$$
 Derive the reduced form co-efficient of the behavioral equation.
OR
b) Differentiate between LIML and FIML. Discuss the assumptions of FIML
- 15 a) Analyse the similarities between Mahalanobis and Harrod-Domar Models.
OR
b) Compare Mahalanobis one-sector, two-sector and four-sector Models of Indian planning.

Z-Z-Z END