

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023  
(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 In a regression analysis the values are fixed for the  
(i) Explanatory variables (ii) Dependent variables  
(iii) All variables (iv) None of the variables
- 2 In the multiple regression model, the adjusted  $R^2$   
(i) cannot be negative  
(ii) will never be greater than the regression  $R^2$   
(iii) equals the square of the correlation coefficient  $r$   
(iv) cannot decrease when an additional explanatory variable is added
- 3 In a regression model with multicollinearity being very high, the estimators  
(i) Are unbiased  
(ii) Are consistent  
(iii) Standard errors are correctly estimated  
(iv) all of the above
- 4 In simultaneous equation model, the number of equations to be estimated is  
(i) One more than the number of endogenous variables  
(ii) Equal to the number of endogenous variables  
(iii) Depend on the underlying economic theory  
(iv) Equal to the number of endogenous and exogenous variables
- 5 India's first five year plan was based on  
(i) Mahalanobis model one sector (ii) two  
(iii) Harrod-Domar model (iv) 4

**SECTION - B (15 Marks)**

Answer ALL Questions

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

- 6 a Mention the various steps involved in estimation of econometrics model.  
OR  
b Distinguish between economic and econometrics model.
- 7 a Write the properties of OLS estimators.  
OR  
b Bring out Simple linear regression model.
- 8 a Narrate the consequences of using OLS in the presence of autocorrelation.  
OR  
b Compare the concept of regression and analysis of variance.

Cont...

- 9 a Outline the concept of simultaneous equation model.  
OR  
b Estimate the parameters of LIML and 2SLS.
- 10 a What is Harrod-Domar models.  
OR  
b Write the similarities between Mahalanobis and Harrod –Domar models.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Discuss the Goals and division of econometrics.  
OR  
b What do you understand by forecasting power of a model? Give its desirable properties of a model.
- 12 a Derive the least square estimate for  $Y = b_0 + b_1X + U$  and also find its variance.  
OR  
b Discuss multiple regression model with two explanatory variables and write its properties.
- 13 a Discuss various tests for detecting autocorrelation.  
OR  
b Elucidate the nature of Multicollinearity.
- 14 a Explain the concept of structured reduced form and recursive models.  
OR  
b Discuss identification problem through restriction.
- 15 a Elaborate the method of planning strategies of India and planning model.  
OR  
b Discuss Mahalanobis model of Indian planning.

Z-Z-Z

END