

ECONOMETRICS AND PLANNING MODELS

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	Which of the following is likely to occur when too many variables are included in the model? a) The model may become underspecified. b) The model is more precise. c) The model may become overspecified. d) The model includes unbiased terms.	K1	CO1
	2	Observations from subjects at a given point in time generates---- a) Cross sectional data b) Panel data c) Time series data d) Spatial data	K1	CO1
2	3	What should be relationship between the number of observations (n) and the number of explanatory variables(m) in a model? a) $n < m$ b) $n = m$ c) $n \leq m$ d) $n > m$	K1	CO2
	4	Which of the following is not an assumption of a Simple Linear Regression Model? a) The disturbance terms are normally distributed. b) The Explanatory variable is non Stochastic. c) The disturbance terms are uncorrelated. d) The dependent variable is non stochastic	K1	CO2
3	5	In case of multicollinearity, the confidence intervals tend to be -- a) Wider b) Narrower c) (i) or (ii) d) None of the above	K1	CO3
	6	Which of the following methods can be used to remove autocorrelation from a time series? a) Differencing b) Smoothing c) Addition of lags d) None of the above	K2	CO3
4	7	Identify the method that assumes the structural equations are exactly identified. a) OLS b) ILS c) 2SLS d) LIML	K2	CO4
	8	In 2SLS, which of the following methods is applied to the reduced form of equations? a) OLS b) ILS c) SLS d) LIML	K2	CO4
5	9	State the models where Marginal saving rate is treated as an endogenous variable. a) Harrod-Domar Model b) Mahalonobis Model c) Chakrobarty model d) Keynesian Model	K2	CO4
	10	The two sectors considered in the two sector model of Mahalonobis were _____. a) Consumer Goods and Investments Goods sector. b) Imports sector and Exports sector c) Consumer Goods and Export sector. d) Investment and Imports sector	K2	CO4

Cont...

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.	Write the reasons for the poor forecasting performance of a model. Illustrate.	K3	CO1
	(OR)			
	11.b.	Describe the statistical criteria used to evaluate whether the estimates of the parameters of the model are meaningful.		
2	12.a.	Write a simple Linear regression model and prove that the dependent variable follows $N(\beta_0 + \beta_1 X_i, \sigma^2)$	K4	CO2
	(OR)			
	12.b.	Prove that the least square estimator of β_1 is a linear function of Y_i .		
3	13.a.	Discuss the role of VIF in detecting multicollinearity.	K4	CO3
	(OR)			
	13.b.	What are the consequences of autocorrelation.? Elaborate.		
4	14.a.	Brief the properties of 2SLS estimators.	K5	CO4
	(OR)			
	14.b.	Examine the identifiability of the first equation in following model. $y_1 = 3y_2 - 2x_1 + x_2 + u_1$ $y_2 = y_3 + x_3 + u_2$ $y_3 = y_1 - y_2 - 2x_3 + u_3$		
5	15.a.	Compare Harrod Domar Model and Mahalonobis model.	K5	CO4
	(OR)			
	15.b.	Describe the Mahalonobis two sector model. How it plays a role in Indian Planning		

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	State and explain the types of data used in Econometric analysis.	K3	CO1
2	17	Write the assumptions of a Classical Linear regression Model and derive the model with two explanatory variables.	K5	CO2
3	18	Explain the role of Durbin Watson test in detecting multicollinearity.	K4	CO3
4	19	Estimate the parameters using ILS method. Demand Function: $Q_t = \alpha_0 + \alpha_1 P_t + \alpha_2 X_t + u_{1t}$ Supply Function: $Q_t = \beta_0 + \beta_1 P_t + u_{2t}$ Where Q-Quantity, P-Price, X = Income.	K5	CO4
5	20	Explain the fundamental equation and the equation for warranted growth in Harrod Model.	K5	CO4

Z-Z-Z

END