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22STU626N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch- **STATISTICS**

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	Identify the primary objective of Econometrics. a) To purely describe economic history b) To provide empirical content for economic theory c) To establish a new school of economic thought d) To replace mathematical economics	K1	CO1
	2	A model that describes the current state of an economic phenomenon as a function of its past states is called a: a) Static model b) Dynamic model c) Microeconomic model d) Theoretical model	K2	CO1
2	3	According to the accelerator principle, net investment is a function of the change in: a) The rate of interest b) The capital stock c) National income or output d) The price level	K1	CO2
	4	The Cobweb model is used to explain price fluctuations in markets where: a) Supply adjusts to price with a time lag b) Demand adjusts to price with a time lag c) Both supply and demand are instantaneous d) The government sets the price	K2	CO2
3	5	In a closed Input-Output model, the sum of the technical coefficients in a column is: a) Less than 1 b) Equal to 1 c) Greater than 1 d) Zero	K1	CO3
	6	The primary purpose of Leontief's Input-Output analysis is to study: a) The determination of national income b) The interdependencies between different sectors of an economy c) The behavior of financial markets d) The causes of business cycles	K2	CO3
4	7	A model is considered 'linear' in the context of econometrics if it is linear in the: a) Variables only b) Parameters only c) Variables and parameters d) Error term only	K1	CO4
	8	In the two-variable linear regression model $Y_i = \beta_1 + \beta_2 \chi_i + \mu_i$, the parameters β_1 , β_2 and are: a) Random variables b) Fixed but unknown constants c) Known constants d) Dependent on the sample size In the two-variable linear regression model	K2	CO4
5	9	Aspecification error in a regression model can occur due to: a) Inclusion of an irrelevant variable b) Omission of a relevant variable c) Use of an incorrect functional form d) All of the above	K1	CO5
	10	A classic symptom of high muticollinearity is a) Low R^2 and high t -- values b) High R^2 and high t – values c) High R^2 and Low t – values d) Low R^2 and Low t – values	K2	CO5

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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.	Describe the concept of Micro econometrics and identify two types of data commonly used in this field.	K2	CO1
		(OR)		
	11.b.	Distinguish between endogenous and exogenous variables in an economic model. Support your answer with a suitable example from demand theory.		
2	12.a.	Explain the key assumptions of the Harrod-Domar model of economic growth.	K2	CO2
		(OR)		
	12.b.	Explain the relationship between the Marginal Propensity to Consume (MPC) and the size of the simple investment multiplier.		
3	13.a.	Explain the fundamental assumptions of Leontief's Input-Output model and their significance in economic planning.	K3	CO3
		(OR)		
	13.b.	Interpret the meaning of technical coefficients in an Input-Output table.		
4	14.a.	Explain the concept of a linear regression model. What does it mean for a model to be linear in the parameters but not in the variables?	K2	CO4
		(OR)		
	14.b.	Explain the role of the disturbance term ut in a two-variable linear regression model. What are the key assumptions made about this term for valid statistical inference?		
5	15.a.	Interpret the Variance Inflation Factor (VIF). How is it used to detect the severity of multicollinearity among regressors?	K3	CO5
		(OR)		
	15.b.	Explain the concept of heteroscedasticity. In which type of data (cross-section or time series) is it more commonly found and why?		

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	Define an economic model and analyze its key uses in economic theory. Illustrate your answer by explaining the components of a simple market model (demand and supply).	K4	CO1
2	17	Examine the multiplier – accelerator interaction.	K3	CO2
3	18	Explain the fundamental principles of Leontief's Input-Output analysis and outline its primary significance in understanding the structural interdependence of a national economy.	K3	CO3
4	19	Explain the concept of economic forecasting. Analyze the factors that contribute to forecast errors and evaluate the reliability of forecasts generated from econometric models.	K4	CO4
5	20	Explain the use of dummy variables in regression analysis with an example. Analyze how dummy variables can be used to model (a) seasonal effects and (b) structural breaks in a relationship.	K5	CO5

Z-Z-Z END