

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch - STATISTICS

TIME SERIES & INDEX NUMBERS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

Module No	Question No.	Question	K Level	CO
1	1	The term for time series pattern characterized by upward or downward movement in data points over time is called (a) Seasonality (b) Trend (c) Autocorrelation (d) Cyclical Variation	K1	CO1
	2	In a time series analysis, what is the primary focus when the studying data points over a sequence of equally spaced time intervals? (a) Comparing data from different sources (b) Identifying outliers in the data (c) Understanding trends and patterns over time (d) Calculating the mean of the data	K2	CO1
2	3	In seasonal adjustment of time series data, why is it important to remove the seasonal component? (a) To exaggerate the seasonality for better visualization (b) To make the data easier to understand (c) To isolate and analyze the underlying trends and irregular components (d) To add random noise to the data for randomness	K1	CO2
	4	What statistical technique is commonly used to remove seasonality from time series data? (a) Autoregressive Integrated Moving Average (b) Seasonal decomposition of time series (c) Exponential Smoothing (d) Correlation analysis	K2	CO2
3	5	What is the purpose of an index number in economics and statistics? (a) To measure the spread or dispersion of data (b) To represent the total sum of a dataset (c) To standardize data for easy comparison over time or across different groups (d) To calculate the mean of a dataset	K2	CO3
	6	While calculating the index numbers, the base year is fixed as first year for all the next years is identifies as (a) Chain Base Index Number (b) Fixed Base Index Number (c) Price Index Number (d) Quantity Index Number	K2	CO3
4	7	In the Laspeyres Price Index, what weights are used to compute the index? (a) Current year prices (b) Base year prices (c) Current year quantity (d) Base year quantity	K2	CO3
	8	Which type of index number allows for the base year to change over time to reflect current conditions? (a) Laspeyre's Price Index (b) Paasche's Price Index (c) Fisher's Ideal Index (d) Kelly's Price Index	K1	CO3

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5	9	What is the primary measure used to estimate the total economic output of a country over a specific period? (a) Gross Domestic Product (GDP) (b) Gross National Product (GNP) (c) Consumer Price Index (CPI) (d) Balance of Trade	K2	CO5
	10	What is the primary expenditure category used to estimate GDP in the expenditure approach? (a) Investment expenditure (b) Government expenditure (c) Consumption expenditure (d) Export expenditure	K1	CO5

SECTION – B (35 marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

1	11	(a) Define Time series. Also explain the components of time series. (OR)	K1	CO1
		(b) Explain the methods of moving averages.	K1	CO2
2	12	(a) Define and discuss the ratio to moving averages with an example. (OR)	K1	CO2
		(b) Describe the random components with an example.	K2	CO1
3	13	(a) Write a short note on the fixed base index numbers. (OR)	K2	CO3
		(b) What are the uses of index numbers?	K2	CO3
4	14	(a) Describe the fisher's index numbers. (OR)	K2	CO3
		(b) Define the cost-of-living index numbers and give its uses.	K2	CO4
5	15	(a) Explain the uses of the national income. (OR)	K2	CO5
		(b) Describe about the national income.	K2	CO5

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

1	16	Write a detailed note on the concept of least square method of estimating trend.	K2	CO1
2	17	Explain in detail about the seasonal variations.	K3	CO2
3	18	Describe the construction of wholesale price index with examples.	K3	CO3
4	19	Explain the construction of the cost of living index numbers	K4	CO4
5	20	Discuss the uses of the national income estimate.	K3	CO5

Z-Z-Z

END