Seat No:_____ **Enrollment No:_____**

PARUL UNIVERSITY

FACULTY OF MANAGEMENT

MBA Summer 2023-24 Examination

Semester: 04 **Date: 22/04/2024**
Subject Code: 06209253 **Time: 1:30pm to 4:00pm**
Subject Name: Time Series Econometrics **Total Marks: 60**

Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

				CO	PO	BT
Q.1	**Do as Directed.**					
	Multiple choice type questions/Fill in the blanks. (Each of 1 mark)		**(05)**			
	1. Additive model for time series Y = . . .			**1**	**1**	**1**
	a) T $\times$ S $\times$ C $\times$	c) T $-$ S $-$ C $-$ I				
	b) T + S + C + I	d) None of these				
	2. A set of observations recorded at an equal interval of time is called			**1**	**2**	**1**
	a) Array data	c) Geometric series				
	b) data	d) Time series data				
	3 Prosperity, Recession, and depression in a business is an example of			**2**	**1**	**1**
	a) Irregular trend	c) Cyclical trend				
	b) Secular trend	d) Seasonal trend				
	4 Graph of time series is called			**2**	**1**	**3**
	a) Line graph	c) Histogram				
	b) Trend	d) Histogram				
	5 The most used mathematical method for measuring the trend is			**1**	**1**	**2**
	a) Semi average	c) Free hand curve				
	b) Moving average	d) Least squares				
B).	**Define the following. (Each of 1 mark)**		**(05)**			
	1. Naïve approach			**1**	**1**	**2**
	2. Standardization			**2**	**2**	**1**
	3. Moving Average Method			**2**	**1**	**3**
	4. Trend analysis			**1**	**3**	**1**
	5. Cyclicity in time series			**2**	**1**	**3**
C).	**Direct questions. (Each of 1 mark)**		**(05)**			
	1. What does autocovariance measure?			**2**	**1**	**1**
	2. Mention the various techniques used in smoothing time series			**2**	**3**	**1**
	3. Mention the various example of a time series model			**2**	**2**	**1**
	4. What is seasonality? And how it can be usable in real world application?			**3**	**1**	**1**
	5. Explain any one application of ARIMA model			**1**	**2**	**3**
Q.2	**Answer the following questions.**					
A).	Explain any two real world application of time series forecasting in detail		**(07)**	**2**	**1**	**4**
B).	Explain basic concepts of Econometrics in detail.		**(08)**	**4**	**1**	**2**
Q.3	**Answer the following questions.**					
A).	Explain Box-Jenkin's ARIMA (p,d,q) model in detail		**(07)**	**2**	**4**	**3**

B).	Calculate the regression coefficient and obtain the lines of regression for following data X 1 2 3 4 5 6 7 Y 9 8 10 12 11 13 14	**(08)**	**2**	**2**	**3**
Q.4	**Attempt any two questions. (Each of 7.5 mark)**	**(15)**			
	1. What is logistic regression? Explain with your one-use case/ Application		**1**	**1**	**3**
	2. Explain briefly about the linear model along with one example		**2**	**1**	**4**
	3. Explain vector autoregressive model in detail		**1**	**4**	**3**
	4. Explain various smoothing methods used in time series forecasting		**2**	**3**	**1**