



Name:			
Enrolment No:			
UPES End Semester Examination, December 2023			
Course: Aviation Forecasting Techniques		Semester: III	
Program: MBA AVM		Time: 03 hrs.	
Course Code: TRAV8018		Max. Marks: 100	
Instructions: As per sections			
SECTION A 10Qx2M=20Marks			
S. No.	Attempt all questions in this section	Marks	CO
Q 1	Multiple choice questions:		
1	What is the primary purpose of the Delphi method in qualitative forecasting? A) To analyze historical data patterns B) To obtain consensus from a panel of experts C) To predict future trends based on mathematical models D) To conduct surveys of customer preferences	2	CO1
2	Which of the following factors can influence the demand for air travel? A) The price of fuel. B) The length of airport runways. C) The type of aircraft used. D) The time of day.	2	CO1
3	In qualitative forecasting, what is the "Panel Consensus" approach? A) Using historical data to make forecasts B) A technique for weighting expert opinions C) The final round of the Delphi method D) A statistical method for trend analysis	2	CO1
4	Which seasonal factor can significantly affect aviation transport demand? A) Availability of Wi-Fi on flights. B) The type of aircraft used. C) Holiday and vacation seasons. D) Airport security measures.	2	CO1
5	Which qualitative forecasting technique involves asking a group of experts to independently provide their judgments and then aggregating their responses? A) Market research B) Time series analysis C) Delphi method D) Regression analysis	2	CO1

6	Airlines use a qualitative forecasting approach when they gather feedback from frequent flyers through surveys and interviews to improve their in-flight services. Which method does this represent? A) Market Research B) Time Series Analysis C) Regression Analysis D) Exponential Smoothing	2	CO1
7	In aviation, which qualitative forecasting method is exemplified by airlines seeking input from their most experienced pilots to predict the impact of changing weather patterns on flight schedules? A) Delphi Method B) Expert Judgment C) Scenario Analysis D) Focus Groups	2	CO1
8	Which of the following is NOT a limitation of qualitative forecasting methods? A) They can be time-consuming. B) They are subjective and rely on human judgment. C) They cannot be used for long-term forecasting. D) They may not provide precise numerical forecasts.	2	CO1
9	What does the term "forecast error" represent in quantitative forecasting? A) The difference between the actual and forecasted values. B) The range of possible outcomes in a scenario analysis. C) The level of seasonality in a time series. D) The correlation between two independent variables.	2	CO1
10	Which demographic factor is likely to influence air travel demand? A) Age of the passengers. B) The number of runways at an airport. C) The availability of rental cars at the destination. D) The airline's safety record.	2	CO1

SECTION B
4Qx5M= 20 Marks

Attempt all questions in this section.																	
11	The weekly demand for chicken wings at a local restaurant during the past six weeks is given below. <table border="1" style="margin-left: 20px;"> <tr> <td>Week</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Demand</td> <td>650</td> <td>521</td> <td>563</td> <td>735</td> <td>514</td> <td>596</td> </tr> </table> Forecast the demand for week 7 using a five-period moving average.	Week	1	2	3	4	5	6	Demand	650	521	563	735	514	596	5	CO2
Week	1	2	3	4	5	6											
Demand	650	521	563	735	514	596											
12	What are the areas where forecasting is implemented in the aviation industry? Explain with examples.	5	CO2														
13	Describe the difference between short-term and long-term aviation forecasting and their respective applications.	5	CO2														
14	Illustrates the various sources of data used for forecasting. OR	5	CO2														

	Explain the process of the Delphi method and its relevance in making strategic business forecasts.														
SECTION-C 3Qx10M=30 Marks															
	Attempt all questions in this section:														
15	Explain the two major econometric methods for aviation forecasting.	10	CO3												
16	Describe the Times-Series forecasting models with examples.	10	CO3												
17	<p>Over the past four months, sales of hair dryers at the Walgreens stores in Youngstown, Ohio have been 100, 110, 120, and 130 units (with 130 being the most recent sales).</p> <p>Develop a moving-average forecast for next month using these three techniques:</p> <ol style="list-style-type: none"> 3-month moving average. Weighted 4-month moving average with the most recent month weighted 4, the preceding month 3, then 2, and the oldest month weighted 1. <p style="text-align: center;">OR</p> <p>Describe the components of a time series and explain their individual contributions to the overall behavior of the data.</p>	10	CO3												
SECTION-D 2Qx15M= 30 Marks															
	Attempt all questions in this section:														
18	What are the basic components of the ARIMA model in the context of time-series analysis? How can the ARIMA model support operational decisions in aviation management?	15	CO4												
19	<p>Define and differentiate between short-term, medium-term, and long-term forecasting horizons in the context of business planning and decision-making.</p> <p style="text-align: center;">OR</p> <p>An aviation analyst is working with a dataset that contains information on aircraft fuel consumption and flight distance.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Flight Distance (Miles)</th> <th>Fuel Consumption (gallons)</th> </tr> </thead> <tbody> <tr> <td>500</td> <td>40</td> </tr> <tr> <td>1000</td> <td>70</td> </tr> <tr> <td>1500</td> <td>90</td> </tr> <tr> <td>2000</td> <td>110</td> </tr> <tr> <td>2500</td> <td>130</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Estimate the equation of the regression line. Predict the fuel consumption for a flight distance of 1800 miles. 	Flight Distance (Miles)	Fuel Consumption (gallons)	500	40	1000	70	1500	90	2000	110	2500	130	15	CO4
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