

Name:	
Enrolment No:	

UPES

End Semester Examination, December 2023

Course: Aviation Demand Forecasting

Program: BBA-AVO

Course Code: TRAV3015P

Semester: V

Time: 03 hrs.

Max. Marks: 100

Instructions:

- *Read each question carefully before answering.*
- *Make sure your answers are concise and to the point.*
- *Support your answers with specific examples or details from the case study where appropriate.*
- *Write your answers legibly.*
- *Section – A, B, D are compulsory i.e., there will be no choice available for these sections.*
- *Attempt any 3 in Section – C*

SECTION A
10Qx2M=20Marks

S. No.	Statement of the Question	Marks	CO
Q1.	Mention one regulatory change that could significantly affect aviation demand forecasts.	2	CO1
Q2.	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
Q3.	Seasonal variation is caused by (a) increase of population (b) strike and lockout (c) weather and social customs (d) none of these.	2	CO1
Q4.	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
Q5.	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
Q6.	Name the components of time series?	2	CO1
Q7.	Exponential smoothing method of forecasting is (a) Qualitative method (b) Quantitative method (c) Delphi method (d) regression-based method	2	CO1
Q8.	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
Q9.	Name two key variables that are crucial in aviation demand forecasting.	2	CO1
Q10.	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

SECTION B
4Qx5M= 20 Marks

Q11.	What is Demand forecasting? Why is it required in aviation industry and who requires it?	5	CO2																						
Q12.	What are the key factors which influence the aviation demand forecasting?	5	CO2																						
Q13.	What is the Time Horizon in the Context of Aviation Demand Forecasting? What Factors Influence the Choice of Time Horizon for a Forecast?	5	CO2																						
Q14.	What external factor can significantly influence aviation demand forecasts?	5	CO2																						
SECTION-C 3Qx10M=30 Marks																									
Q15.	Explain various forecasting methods.	10	CO3																						
Q16.	Briefly discuss the Delphi method of making forecast.	10	CO3																						
Q17.	Explain the different types of qualitative methods with advantages and disadvantages.	10	CO3																						
Q18.	Describe the uses of qualitative, time-series, and causal forecasts.	10	CO3																						
SECTION-D 2Qx15M= 30 Marks																									
Q19.	<p>As an aviation analyst, you are tasked with forecasting passenger demand using both autoregression (AR) and moving average (MA) methods. You have been provided with the monthly passenger data (in thousands) for a regional airport over the last six months:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Month (t)</th> <th>Passengers (in thousands)</th> </tr> </thead> <tbody> <tr><td>1</td><td>120</td></tr> <tr><td>2</td><td>125</td></tr> <tr><td>3</td><td>130</td></tr> <tr><td>4</td><td>135</td></tr> <tr><td>5</td><td>140</td></tr> <tr><td>6</td><td>145</td></tr> </tbody> </table> <p>Use a first-order autoregressive model (AR(1)) to forecast the passenger demand for month 7. Calculate a 3-month moving average forecast for month 7. Compare the results obtained from the two methods and discuss which method might be more appropriate in this scenario, considering the nature of the data and the aviation market.</p>	Month (t)	Passengers (in thousands)	1	120	2	125	3	130	4	135	5	140	6	145	15	CO4								
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4	135																								
5	140																								
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Q20.	<p>Discuss how aviation forecasting techniques are applied in various areas of the aviation industry to find solutions to operational challenges. Provide examples to illustrate their application."</p> <p>OR</p> <p>Fit a trend line for this data using regression model (Results value upto three places of decimals). Forecast for 2025.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> </tr> </thead> <tbody> <tr> <td>PAX (thousands)</td> <td>99</td> <td>98</td> <td>103</td> <td>107</td> <td>116</td> <td>136</td> <td>163</td> <td>190</td> <td>215</td> <td>248</td> </tr> </tbody> </table>	Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	PAX (thousands)	99	98	103	107	116	136	163	190	215	248	15	CO4
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