Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: BBA (AO) **Semester: V**
Programme: Aviation Demand Forecasting CC: BDSA 106
Time: 03 hrs. **Max. Marks: 100**
Instructions:

SECTION A

S. No.	**Attempt all of the following, each question carry two marks.**		
Q 1	Forecasting vs Prediction	**2**	**CO 1**
Q 2	Relationship between forecasting, planning and decision-making	**2**	**CO 1**
Q 3	Econometric model	**2**	**CO 1**
Q 4	Model fit	**2**	**CO 1**
Q 5	Medium term forecasts	**2**	**CO 1**
Q 6	Trend line	**2**	**CO 1**
Q 7	Seasonality	**2**	**CO 1**
Q 8	Moving Average	**2**	**CO 1**
Q 9	Cyclical variation	**2**	**CO 1**
Q 10	Delphi Method	**2**	**CO 1**

SECTION B

Attempt any Four

Q 1	What are the factors affecting aviation forecasting? Explain in details.	**5**	**CO3**
Q 2	Use this data to develop a regression model to predict cost by number of passengers. Interpretate the regression coefficient. The data is showing the costs and associated number of passengers for twelve 500-mile commercial airline flights using Boeing 737s during the same season of the year. $\sum xy = 93.78, \sum x^2 = 1897, \overline{X} = 73.5, \overline{Y} = 5.73$	**5**	**CO2**
Q 3	What is the difference between quantitative and qualitative approach of forecasting?	**5**	**CO3**

<table>
<tr><td>Q 4</td><td>How Jury of Executive Opinion method can be applied for forecasting passengers for green field airport at new location?</td><td>5</td><td>CO3</td></tr>
<tr><td>Q 5</td><td>Discuss the role of forecasting in Capacity and infrastructure planning.</td><td>5</td><td>CO3</td></tr>
<tr><td colspan="4">SECTION-C
Attempt any three</td></tr>
<tr><td>Q 1</td><td>ATMs data (in thousands) of Delhi airports is given below- Estimates the next quarter forecast using 3rd order moving average.
<table>
<tr><td>Year</td><td>Quarter 1</td><td>Quarter 2</td><td>Quarter 3</td><td>Quarter 4</td></tr>
<tr><td>2015</td><td>320</td><td>185</td><td>215</td><td>395</td></tr>
<tr><td>2016</td><td>345</td><td>200</td><td>230</td><td>420</td></tr>
<tr><td>2017</td><td>365</td><td>210</td><td>240</td><td>440</td></tr>
</table></td><td>10</td><td>CO3</td></tr>
<tr><td>Q 2</td><td>Fit a trend line for this data using regression model (Results value upto three places of decimals). Forecast for 2020.
<table>
<tr><th>Year</th><th>Passengers (thousands)</th></tr>
<tr><td>2008</td><td>99</td></tr>
<tr><td>2009</td><td>98</td></tr>
<tr><td>2010</td><td>103</td></tr>
<tr><td>2011</td><td>107</td></tr>
<tr><td>2012</td><td>116</td></tr>
<tr><td>2013</td><td>136</td></tr>
<tr><td>2014</td><td>163</td></tr>
<tr><td>2015</td><td>190</td></tr>
<tr><td>2016</td><td>215</td></tr>
<tr><td>2017</td><td>248</td></tr>
</table></td><td>10</td><td>CO3</td></tr>
<tr><td>Q 3</td><td>Discuss the components of time series with suitable examples form aviation business.</td><td>10</td><td>CO2</td></tr>
<tr><td>Q 4</td><td>Discuss Qualitative approach of demand forecasting in aviation business?</td><td>10</td><td>CO2</td></tr>
<tr><td colspan="4">SECTION-D</td></tr>
<tr><td>Q 1</td><td>Can amount of Freight be predicted using regression analysis? Given table represents FREIGHT (In Thousand MT) and IIP of India. Establish linear regression model and determine these followings (Results upto three places of decimals)-
<ol type="a">
Fit Simple Linear regression model
Determine R^2
Predict freight amount when IIP is 350.

<table>
<tr><th>FREIGHT (IN Thousand MT)</th><th>IIP</th></tr>
<tr><td>649</td><td>123</td></tr>
<tr><td>681</td><td>130</td></tr>
<tr><td>705</td><td>139</td></tr>
</table></td><td>30</td><td>CO4</td></tr>
</table>

		699	145			
		797	154			
		846	162			
		854	167			
		979	176			
		1068	189			
		1278	204			
		1397	222			
		1550	251			
		1714	290			
		1701	297			