Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Business Statistics — **Semester: 2nd**
Program: BBA ALL, Int. BBA-MBA(CORE) — **Time: 03 hrs.**
Course Code: DSQT1004 — **Max. Marks: 100**

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Choose an appropriate answer.		**CO1**
	(i) The algebraic sum of the deviation of the set of values from their arithmetic mean is (a) Equal to one (b) Always zero (c) Product of the values (d) Equal to median (ii) For symmetrical distribution (a) Mean=Median=Mode (b) Mean<Median<Mode (c) Mode=3Median-2Mean (d) Mean>Median>Mode (iii) Correlation is the most popular statistical measure that indicates, (a) Whether or not the relationship exist (b) Direction of relationship within the variables (Direct or Indirect) (c) Relationship is strong or weak (d) All of the above (iv) If the mean and variance are 5 and 16 respectively then coefficient of variation is (a) 60% (b) 70% (c) 80% (d) None of the above (v) For a positive skewed data (a) Mean=Median	**2*10=20**	**CO1**

	(b) Mean<Median (c) Mean>Median (d) Mean is zero (vi) What is the mean deviation about mean of the data 2,9,9,3,6,9,4? (a) 2.23 (b) 2.57 (c) 3.23 (d) 3.57 (vii) Which of the following is an ideal measure of dispersion, (a) Range (b) Standard deviation (c) Quartile deviation (d) Mean deviation (viii) The range of probability for an event E is (a) $P(E) \geq 1$ (b) $P(E) \leq 0$ (c) $0 \leq P(E) \leq 1$ (d) $-1 \leq P(E) \leq 1$ (ix) A process by which we estimate the value of dependent variable on the basis of one or more independent variable is called (a) Measure of central tendency (b) Measure of dispersion (c) Regression (d) Correlation (x) Which of the following method is not a method of collection primary data? (a) Questionnaires (b) Interviews (c) Data collected for published sources (d) All are primary data methods		
SECTION B **4Qx5M= 20 Marks**			
	Answer the following question.		
Q.11	What do you mean by data? Discuss any two method of primary data collection.	**5**	**CO2**
Q. 12	Discuss any five requisites of an ideal measure of central tendency.	**5**	**CO2**

<table>
<tr><td>Q. 13</td><td>
<table>
<tr><td>Class Interval</td><td>5-10</td><td>10-15</td><td>15-20</td><td>20-25</td><td>25-30</td></tr>
<tr><td>Frequency</td><td>9</td><td>15</td><td>30</td><td>32</td><td>14</td></tr>
</table>
Calculate the standard deviation for the data given above.
</td><td>5</td><td>CO2</td></tr>
<tr><td>Q.14</td><td>If bxy= -0.8 and byx= -1.2, calculate the correlation coefficient.</td><td>5</td><td>CO2</td></tr>
<tr><td colspan="4">SECTION-C
3Qx10M=30 Marks</td></tr>
<tr><td>Q .15</td><td>The following table indicates the marks obtained by 30 students in a class.
<table>
<tr><td>Marks</td><td>Number of students</td></tr>
<tr><td>0-10</td><td>2</td></tr>
<tr><td>10-20</td><td>6</td></tr>
<tr><td>20-30</td><td>9</td></tr>
<tr><td>30-40</td><td>7</td></tr>
<tr><td>40-50</td><td>4</td></tr>
<tr><td>50-60</td><td>2</td></tr>
</table>
Calculate mean, median and mode for the data given above. Based on the values of mean, median and mode discuss the symmetry of the data.
</td><td>10</td><td>CO3</td></tr>
<tr><td>Q.16</td><td>The following data shows the weight and blood pressure of five persons.
<table>
<tr><td>Person</td><td>Weight</td><td>Blood Pressure</td></tr>
<tr><td>A</td><td>150</td><td>125</td></tr>
<tr><td>B</td><td>169</td><td>130</td></tr>
<tr><td>C</td><td>175</td><td>160</td></tr>
<tr><td>D</td><td>180</td><td>169</td></tr>
<tr><td>E</td><td>200</td><td>150</td></tr>
</table>
Calculate the correlation coefficient and interpret your result.
</td><td>10</td><td>CO3</td></tr>
<tr><td>Q.17</td><td>A bag contains 5 white balls and 8 black balls. One ball is drawn at random from the bag. Again, another one is drawn without replacing the first ball. Find the probability that both the balls drawn are white.</td><td>10</td><td>CO3</td></tr>
<tr><td colspan="4">SECTION-D
2Qx15M= 30 Marks</td></tr>
<tr><td>Q .18</td><td>Following data shows age (X, in years) and blood pressure (Y).
<table>
<tr><td>X</td><td>56</td><td>42</td><td>72</td><td>39</td><td>63</td><td>47</td><td>52</td><td>49</td><td>40</td><td>42</td><td>68</td><td>60</td></tr>
<tr><td>Y</td><td>127</td><td>112</td><td>140</td><td>118</td><td>129</td><td>116</td><td>130</td><td>125</td><td>115</td><td>120</td><td>135</td><td>133</td></tr>
</table>
(a) Calculate the two equation of regression line.
(b) Calculate correlation coefficient between X and Y and interpret your result.
(c) Can we estimate the blood pressure of a person aged 20 years on the basis of this regression equation? Discuss.
</td><td>5
5

5</td><td>CO4</td></tr>
</table>

Q.19	During a 20-day long skiing competition, the snow depth at Snow Mountain was measured (to the nearest cm) for each of the 20 days. The records are as follows: 301, 312, 319, 354, 359, 345, 348, 341, 347, 344, 349, 350, 325,323, 324, 328,322, 332, 334, 337. (a) Prepare grouped frequency distribution table with class 300-310, 311-320, 321-330, ……along with cumulative frequency more than and less than type. (b) Prepare an ogive curve.	**5** **10**	**CO4**