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G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.B.A.

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
IV	PART - III	CORE	U21BB408	BUSINESS STATISTICS AND MATHEMATICS

Date & Session: 15.11.2024 / AN

Time : 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.																					
CO1	K1	1.	Which of the following is a basis classification of a table? a) purpose b) construction c) originally d) all of these																					
CO1	K2	2.	Data can be obtained through a statistical _____. a) Survey b) Methods c) Analysis d) Medium																					
CO2	K1	3.	Find the mean of 6, 7, 10, 12, 13, 4, 8, 12. a) 9 b) 10 c) 12 d) 13																					
CO2	K2	4.	Calculate the range of the data sets 61,22,34,17,81,99,42,94. a) 90 b) 82 c) 88 d) 85																					
CO3	K1	5.	Who introduced the term 'regression'? a) Karl Pearson b) R.A Fischer c) Croxton and Cowden d) Francis Galton																					
CO3	K2	6.	The correlation for the values of two variables moving in the same direction is a) Perfect positive b) Positive c) Negative d) no correlation																					
CO4	K1	7.	Which of the following is not a possible ordered pair for a matrix with 6 elements a) (2,3) b) (3,2) c) (1,6) d) (3,1)																					
CO4	K2	8.	The number of element in a matrix of order 2*3 is a) 6 b) 4 c) 5 d) 2																					
CO5	K1	9.	What will be ratio of simple to compound interest on two same sums invested in SBI at rate of interest of 8% kept for 3 years? a) 1875/2029 b) 1/2.9 c) 1903/2156 d) 4/9																					
CO5	K2	10.	The principal is four times the simple interest and the number of years is same as the rate of interest per annum. What is the time? a) 6 years b) 4 years c) 5 years d) 2 years																					
Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)																					
CO1	K3	11a.	Discover the characteristics of statistics.																					
CO1	K3	11b.	Identify the limitations of statistics.																					
CO2	K3	12a.	Show the mean from the following data																					
			<table border="1"> <thead> <tr> <th>Values</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>Less than 10</td> <td>4</td> </tr> <tr> <td>Less than 20</td> <td>10</td> </tr> <tr> <td>Less than 30</td> <td>15</td> </tr> <tr> <td>Less than 40</td> <td>25</td> </tr> <tr> <td>Less than 50</td> <td>30</td> </tr> <tr> <td>Less than 60</td> <td>35</td> </tr> <tr> <td>Less than 70</td> <td>45</td> </tr> <tr> <td>Less than 80</td> <td>65</td> </tr> </tbody> </table>				Values	F	Less than 10	4	Less than 20	10	Less than 30	15	Less than 40	25	Less than 50	30	Less than 60	35	Less than 70	45	Less than 80	65
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CO2	K3	12b.	<p style="text-align: center;">(OR)</p> <p>The monthly income of 10 families in rupees in ascertain village are given below</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Family</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td>Income</td> <td>85</td> <td>70</td> <td>10</td> <td>75</td> <td>500</td> <td>8</td> <td>42</td> <td>250</td> <td>40</td> <td>36</td> </tr> </table> <p>Show of Harmonic mean</p>	Family	1	2	3	4	5	6	7	8	9	10	Income	85	70	10	75	500	8	42	250	40	36
Family	1	2	3	4	5	6	7	8	9	10															
Income	85	70	10	75	500	8	42	250	40	36															
CO3	K4	13a.	<p>Illustrate the coefficient of correlation from the following data</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>X</td> <td>12</td> <td>9</td> <td>8</td> <td>10</td> <td>11</td> <td>13</td> <td>7</td> </tr> <tr> <td>Y</td> <td>14</td> <td>8</td> <td>6</td> <td>9</td> <td>11</td> <td>12</td> <td>3</td> </tr> </table> <p style="text-align: center;">(OR)</p>	X	12	9	8	10	11	13	7	Y	14	8	6	9	11	12	3						
X	12	9	8	10	11	13	7																		
Y	14	8	6	9	11	12	3																		
CO3	K4	13b.	<p>Illustrate the following are the rank obtained by 10 students in two subjects .Statistics and mathematics .To what extent the knowledge of the students in the subject is related</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Statistics</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td>Mathematics</td> <td>2</td> <td>4</td> <td>1</td> <td>5</td> <td>3</td> <td>9</td> <td>7</td> <td>10</td> <td>6</td> <td>8</td> </tr> </table>	Statistics	1	2	3	4	5	6	7	8	9	10	Mathematics	2	4	1	5	3	9	7	10	6	8
Statistics	1	2	3	4	5	6	7	8	9	10															
Mathematics	2	4	1	5	3	9	7	10	6	8															
CO4	K4	14a.	<p>Show the inverse of $\begin{bmatrix} -6 & -12 \\ -8 & -8 \end{bmatrix}$</p> <p style="text-align: center;">(OR)</p>																						
CO4	K4	14b.	<p>Let $A = \begin{pmatrix} 2 & -3 & 1 \\ 4 & 2 & 3 \end{pmatrix}$ $B = \begin{pmatrix} 3 & -2 & 4 \\ 1 & 3 & -5 \end{pmatrix}$ Show that $A^T + B^T$</p>																						
CO5	K5	15a.	<p>Calculate the simple interest on Rs 5,000 at 10 % 3 year find also amount</p> <p style="text-align: center;">(OR)</p>																						
CO5	K5	15b.	<p>Calculate the differentiate the following with respect of x</p> <p>a) $(3x^2+4x-5)^3$</p> <p>b) $E^{3x^2+2x^3}$</p>																						

Course Outcome	Bloom's K-level	Q. No.	SECTION - C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)																				
CO1	K3	16a.	<p>State the various functions of statistics.</p> <p style="text-align: center;">(OR)</p>																				
CO1	K3	16b.	<p>Explain the different methods collection of primary data.</p>																				
CO2	K4	17a.	<p>Show the standard deviation for the following data</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Interval</td> <td>5-10</td> <td>10-15</td> <td>15-20</td> <td>20-25</td> <td>25-30</td> <td>30-35</td> <td>35-40</td> <td>40-45</td> </tr> <tr> <td>F</td> <td>6</td> <td>5</td> <td>15</td> <td>10</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> </tr> </table> <p style="text-align: center;">(OR)</p>	Interval	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	F	6	5	15	10	5	4	3	2		
Interval	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45															
F	6	5	15	10	5	4	3	2															
CO2	K4	17b.	<p>Illustrate the mode from the following series</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Size of item</td> <td>0-5</td> <td>5-10</td> <td>10-15</td> <td>15-20</td> <td>20-25</td> <td>25-30</td> <td>30-35</td> <td>35-40</td> <td>40-45</td> </tr> <tr> <td>F</td> <td>20</td> <td>24</td> <td>32</td> <td>28</td> <td>20</td> <td>16</td> <td>34</td> <td>10</td> <td>8</td> </tr> </table>	Size of item	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	F	20	24	32	28	20	16	34	10	8
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F	20	24	32	28	20	16	34	10	8														
CO3	K4	18a.	<p>Compare correlation and regression</p> <p style="text-align: center;">(OR)</p>																				
CO3	K4	18b.	<p>Show the two regression equation of x and y and y on x from the data given below , taking from actual mean of x and y</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Price Rs</td> <td>10</td> <td>12</td> <td>13</td> <td>12</td> <td>16</td> <td>15</td> </tr> <tr> <td>Amount demanded</td> <td>40</td> <td>38</td> <td>43</td> <td>45</td> <td>37</td> <td>43</td> </tr> </table>	Price Rs	10	12	13	12	16	15	Amount demanded	40	38	43	45	37	43						
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Amount demanded	40	38	43	45	37	43																	
CO4	K5	19a.	<p>Calculate by matrix method</p> <p>$2x+4y+z=5;$ $X+y+z=6$ $2x+3y+z=6$</p> <p style="text-align: center;">(OR)</p>																				
CO4	K5	19b.	<p>Evaluate the various types of matrix.</p>																				
CO5	K5	20a.	<p>Calculate differentiate the following with respect to x</p> <p>i) $X^3+3 \log x+2 \cos x$</p> <p>ii) $3 \tan x + 2 \cos x - e^{x+5}$</p> <p style="text-align: center;">(OR)</p>																				
CO5	K5	20b.	<p>Calculate the interest on Rs 1,000 for 10 years at 4 % per annum , the interest being paid annually</p>																				

