

CO5	K1	9.	Time series consists of. a) Short-term variations c) Irregular variations	b) Long-term variations d) All of the above															
CO5	K2	10.	The index number for base year is always _____. a) 1000 b) 100 c) 200 d) 400																
Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)																
CO1	K3	11a.	Explain the difference Between Ratio and Proportion (OR)																
CO1	K3	11b.	A sum of Rs. 25000 will become Rs. 31000 in 48 months at some rate of simple interest. Find the rate of interest per annum.																
CO2	K3	12a.	How can matrices be used in business? (OR)																
CO2	K3	12b.	Find the determinant of the matrix. Given, $A = \begin{vmatrix} 2 & 0 \\ 0 & 8 \end{vmatrix}$																
CO3	K4	13a.	Explain the characteristics of measure of central tendency (OR)																
CO3	K4	13b.	Find the mean for the following distribution.																
		<table border="1"> <tr> <td>X</td> <td>15</td> <td>21</td> <td>27</td> <td>30</td> <td>35</td> </tr> <tr> <td>F</td> <td>3</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> </table>				X	15	21	27	30	35	F	3	5	6	7	8		
X	15	21	27	30	35														
F	3	5	6	7	8														
CO4	K4	14a.	Explain the difference between correlation and regression. (OR)																
CO4	K4	14b.	Determine the correlation coefficient value for the given set of X and Y values:																
		<table border="1"> <tr> <td>X values</td> <td>21</td> <td>23</td> <td>37</td> <td>19</td> <td>24</td> <td>33</td> </tr> <tr> <td>Y values</td> <td>2.5</td> <td>3.1</td> <td>4.2</td> <td>5.6</td> <td>6.4</td> <td>8.4</td> </tr> </table>				X values	21	23	37	19	24	33	Y values	2.5	3.1	4.2	5.6	6.4	8.4
X values	21	23	37	19	24	33													
Y values	2.5	3.1	4.2	5.6	6.4	8.4													
CO5	K5	15a.	What are the problems with time series analysis? (OR)																
CO5	K5	15b.	In the analysis of time series the fitted linear trend equation is $Y=75.3-2.75X$ estimate trend value when																

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.	Twenty tons of iron is Rs. 6,00,000 (six lakhs). What is the cost of 560 kilograms of iron? (OR)	

CO1	K3	16b.	A sum of Rs. 800 amounts to Rs. 920 in 3 years at simple interest. If the interest rate increases by 3%, what will be the amount?																						
CO2	K4	17a.	How to find the determinant of a 3×3 square matrix? (OR)																						
CO2	K4	17b.	A manufacturer produces three products x, y, z which he sells in two markets. Annual sales are indicated below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Markets</th> <th colspan="3">Products</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>10,000</td> <td>2,000</td> <td>18,000</td> </tr> <tr> <td>II</td> <td>6,000</td> <td>20,000</td> <td>8,000</td> </tr> </tbody> </table> <p>If unit sale prices of x, y and z are ₹ 2.50, ₹ 1.50 and ₹ 1.00, respectively, find the total revenue in each market with the help of matrix algebra. (b) If the unit costs of the above three commodities are ₹ 2.00, ₹ 1.00 and 50 paise respectively. Find the gross profit</p>	Markets	Products			I	10,000	2,000	18,000	II	6,000	20,000	8,000										
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I	10,000	2,000	18,000																						
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CO3	K4	18a.	For a moderately skewed distribution, the mean and median are respectively 26.8 and 27.9. What is the mode of the distribution?																						
CO3	K4	18b.	(OR) Find the mean deviation from the mean of the following data : <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>X</th> <th>0-10</th> <th>10-20</th> <th>20-30</th> <th>30-40</th> <th>40-50</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>5</td> <td>8</td> <td>15</td> <td>16</td> <td>6</td> </tr> </tbody> </table>	X	0-10	10-20	20-30	30-40	40-50	F	5	8	15	16	6										
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CO4	K5	19a.	From the given data obtain the regression equations by Taking deviations from the actual means of X and Y series. <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>X</td> <td>3</td> <td>2</td> <td>7</td> <td>4</td> <td>8</td> </tr> <tr> <td>Y</td> <td>6</td> <td>1</td> <td>8</td> <td>5</td> <td>9</td> </tr> </tbody> </table>	X	3	2	7	4	8	Y	6	1	8	5	9										
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Y	6	1	8	5	9																				
CO4	K5	19b.	Knowledge of the students in the two subjects is related? <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <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>Maths</td> <td>1</td> <td>4</td> <td>2</td> <td>5</td> <td>3</td> <td>9</td> <td>7</td> <td>10</td> <td>6</td> <td>8</td> </tr> </tbody> </table>	Statistics	1	2	3	4	5	6	7	8	9	10	Maths	1	4	2	5	3	9	7	10	6	8
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Maths	1	4	2	5	3	9	7	10	6	8															
CO5	K5	20a.	calculate chain indices and fixed base indices with 2000 as base from the following data <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2000</th> <th>2001</th> <th>2002</th> <th>2003</th> <th>2004</th> </tr> </thead> <tbody> <tr> <td>Price of item(per kg)</td> <td>20</td> <td>25</td> <td>30</td> <td>45</td> <td>63</td> </tr> </tbody> </table>	Year	2000	2001	2002	2003	2004	Price of item(per kg)	20	25	30	45	63										
Year	2000	2001	2002	2003	2004																				
Price of item(per kg)	20	25	30	45	63																				
CO5	K5	20b.	(OR) Calculate Price Index Numbers for 2022 with 2014 as base with the help of Laspeyre's Method Paasche's, and Fisher's Methods																						

		Base year 2014		Current year 2022	
		Price (Rs.)	Quantity	Price (Rs.)	Quantity
Commodity					
		P ₀	Q ₀	P ₁	Q ₁
A		40	16	80	12
B		100	20	120	10
C		80	30	100	30
D		40	40	40	50