

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86**  
(For candidates admitted from the academic year 2025 – 2026)

**B.B.A DEGREE EXAMINATION, APRIL 2026**  
**BUSINESS ADMINISTRATION**  
**SECOND SEMESTER**

**COURSE : ELECTIVE**  
**PAPER : BUSINESS STATISTICS**  
**SUBJECT CODE : 25BA/ME/BS23**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

<b>Q. No.</b>	<b>SECTION A</b>	<b>CO</b>	<b>KL</b>																		
	<b>Answer all the questions: (4 x 2 = 8)</b>																				
1.	What is a Histogram?	CO1	K1																		
2.	Determine Range. 200, 210, 208, 160, 220, 250.	CO1	K1																		
3.	Write down the straight-line equation.	CO1	K1																		
4.	Define time series.	CO1	K1																		
	<b>SECTION B</b>																				
	<b>Answer any Six questions: (6 x 5 = 30)</b>																				
5.	Explain the types of data with examples.	CO2	K2																		
6.	Distinguish between correlation and regression.	CO2	K2																		
7.	Explain components of time series.	CO2	K2																		
8.	Group A: n = 50, Mean = 40, SD = 5 Group B: n = 60, Mean = 50, SD = 6 Find: 1. Combined Mean 2. Combined Standard Deviation.	CO2	K2																		
9.	Annual Sales (₹ in lakhs): <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td><b>Year</b></td> <td>2018</td> <td>2019</td> <td>2020</td> <td>2021</td> <td>2022</td> <td>2023</td> </tr> <tr> <td><b>Sales</b></td> <td>50</td> <td>55</td> <td>60</td> <td>65</td> <td>70</td> <td>75</td> </tr> </table> Find trend using Semi-average method.	<b>Year</b>	2018	2019	2020	2021	2022	2023	<b>Sales</b>	50	55	60	65	70	75	CO2	K2				
<b>Year</b>	2018	2019	2020	2021	2022	2023															
<b>Sales</b>	50	55	60	65	70	75															
10.	Calculate the coefficient of Skewness from the following data. <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td><b>Size of the Item</b></td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> </tr> <tr> <td><b>f</b></td> <td>3</td> <td>6</td> <td>9</td> <td>13</td> <td>8</td> <td>5</td> <td>4</td> </tr> </table>	<b>Size of the Item</b>	6	7	8	9	10	11	12	<b>f</b>	3	6	9	13	8	5	4	CO2	K2		
<b>Size of the Item</b>	6	7	8	9	10	11	12														
<b>f</b>	3	6	9	13	8	5	4														
11.	<table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td><b>X</b></td> <td>10</td> <td>12</td> <td>14</td> <td>16</td> <td>18</td> </tr> <tr> <td><b>Y</b></td> <td>20</td> <td>24</td> <td>28</td> <td>32</td> <td>36</td> </tr> </table> Calculate correlation coefficient and interpret the result.	<b>X</b>	10	12	14	16	18	<b>Y</b>	20	24	28	32	36	CO2	K2						
<b>X</b>	10	12	14	16	18																
<b>Y</b>	20	24	28	32	36																
	<b>SECTION C</b>																				
	<b>Answer any Two questions: (2 x 8 = 16)</b>																				
12.	Calculate Mean, Median and Mode for the following data: 12, 15, 18, 20, 22, 25, 30, 35	CO3	K3																		
13.	Calculate 3-year and 5-Year Moving Average: <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td><b>Year</b></td> <td>2019</td> <td>2020</td> <td>2021</td> <td>2022</td> <td>2023</td> <td>2024</td> <td>2025</td> <td>2026</td> </tr> <tr> <td><b>Sales</b></td> <td>40</td> <td>50</td> <td>60</td> <td>70</td> <td>80</td> <td>90</td> <td>100</td> <td>110</td> </tr> </table>	<b>Year</b>	2019	2020	2021	2022	2023	2024	2025	2026	<b>Sales</b>	40	50	60	70	80	90	100	110	CO3	K3
<b>Year</b>	2019	2020	2021	2022	2023	2024	2025	2026													
<b>Sales</b>	40	50	60	70	80	90	100	110													
14.	Compute the quartile deviation and coefficient of quartile deviation for: 5, 7, 9, 11, 13, 15, 17, 19.	CO3	K3																		

<b>SECTION D</b>																												
<b>Q. No.</b>	<b>Answer any Two questions: (2 x 8 = 16)</b>	<b>CO</b>	<b>KL</b>																									
15.	Compute Spearman's Rank Correlation. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Student</th> <th>Maths</th> <th>Statistics</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>80</td> <td>75</td> </tr> <tr> <td>B</td> <td>70</td> <td>65</td> </tr> <tr> <td>C</td> <td>90</td> <td>85</td> </tr> <tr> <td>D</td> <td>60</td> <td>70</td> </tr> <tr> <td>E</td> <td>85</td> <td>80</td> </tr> </tbody> </table>	Student	Maths	Statistics	A	80	75	B	70	65	C	90	85	D	60	70	E	85	80	CO4	K4							
Student	Maths	Statistics																										
A	80	75																										
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16.	Fit a straight-line trend by the method of least squares to the following data. Assuming that the same rate of change continues, what would be the predicted earning (Rs. in lakh) for the year 2017? <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> </tr> </thead> <tbody> <tr> <td>Earnings</td> <td>38</td> <td>40</td> <td>65</td> <td>72</td> <td>69</td> <td>60</td> <td>87</td> <td>95</td> </tr> </tbody> </table>	Year	2005	2006	2007	2008	2009	2010	2011	2012	Earnings	38	40	65	72	69	60	87	95	CO4	K4							
Year	2005	2006	2007	2008	2009	2010	2011	2012																				
Earnings	38	40	65	72	69	60	87	95																				
17.	A manufacturer claims that the average lifetime of LED bulbs produced in his factory is 1,200 hours. A random sample of 12 bulbs was tested and the following lifetimes (in hours) were recorded: 1180, 1210, 1195, 1225, 1170, 1205, 1230, 1185, 1190, 1215, 1200, 1175 Test at 5% level of significance whether the manufacturer's claim is true.	CO4	K4																									
<b>SECTION E</b>																												
<b>Q. No.</b>	<b>Answer any Two questions : (2 x 15 = 30)</b>	<b>CO</b>	<b>KL</b>																									
18.	Calculate seasonal indices by the ratio to moving average method, from the following data: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>1<sup>st</sup> Quarter</th> <th>2<sup>nd</sup> Quarter</th> <th>3<sup>rd</sup> Quarter</th> <th>4<sup>th</sup> Quarter</th> </tr> </thead> <tbody> <tr> <td>2005</td> <td>75</td> <td>60</td> <td>54</td> <td>59</td> </tr> <tr> <td>2006</td> <td>86</td> <td>65</td> <td>63</td> <td>80</td> </tr> <tr> <td>2007</td> <td>90</td> <td>72</td> <td>66</td> <td>85</td> </tr> <tr> <td>2008</td> <td>100</td> <td>78</td> <td>72</td> <td>93</td> </tr> </tbody> </table>	Year	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter	2005	75	60	54	59	2006	86	65	63	80	2007	90	72	66	85	2008	100	78	72	93	CO5	K5
Year	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter																								
2005	75	60	54	59																								
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2008	100	78	72	93																								
19.	From the data given below, find the rank correlation. <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td><b>Marks in Maths</b></td> <td>25</td> <td>28</td> <td>35</td> <td>32</td> <td>31</td> <td>36</td> <td>29</td> <td>38</td> <td>34</td> <td>32</td> </tr> <tr> <td><b>Marks in Statistics</b></td> <td>43</td> <td>46</td> <td>49</td> <td>41</td> <td>36</td> <td>32</td> <td>31</td> <td>30</td> <td>33</td> <td>39</td> </tr> </tbody> </table>	<b>Marks in Maths</b>	25	28	35	32	31	36	29	38	34	32	<b>Marks in Statistics</b>	43	46	49	41	36	32	31	30	33	39	CO5	K5			
<b>Marks in Maths</b>	25	28	35	32	31	36	29	38	34	32																		
<b>Marks in Statistics</b>	43	46	49	41	36	32	31	30	33	39																		
20.	Goals scored by two teams in a Football session were as follows: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Goals</th> <th>Team 'A'</th> <th>Team 'B'</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>15</td> <td>20</td> </tr> <tr> <td>1</td> <td>10</td> <td>10</td> </tr> <tr> <td>2</td> <td>07</td> <td>05</td> </tr> <tr> <td>3</td> <td>05</td> <td>04</td> </tr> <tr> <td>4</td> <td>03</td> <td>02</td> </tr> <tr> <td>5</td> <td>02</td> <td>01</td> </tr> <tr> <td><b>Total</b></td> <td><b>42</b></td> <td><b>42</b></td> </tr> </tbody> </table> Calculate coefficient of variation and state which team is more consistent.	Goals	Team 'A'	Team 'B'	0	15	20	1	10	10	2	07	05	3	05	04	4	03	02	5	02	01	<b>Total</b>	<b>42</b>	<b>42</b>	CO5	K5	
Goals	Team 'A'	Team 'B'																										
0	15	20																										
1	10	10																										
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