



VIT[®]
Vellore Institute of Technology
 (Deemed to be University under section 3 of UGC Act, 1956)

Department of Mathematics
SCHOOL OF ADVANCED SCIENCES
Winter Semester 2023-2024

Continuous Assessment Test –II

Programme Name & Branch : B.Tech Computer Science & Engineering Business Systems

Slot: B2

Course Name & code: Data Science and Statistical Modelling MAT2005

Class Number (s): VL2023240503856, VL2023240503866

Exam Duration: 90 Min.

Maximum Marks: 50

General instruction(s): Answer ALL Questions / Statistical tables are allowed

Q.No.	Questions	Max Marks	CO	BL																									
1.	A company appoints 4 salesmen, A, B, C, D and observes their sales in 3 seasons summer, winter and monsoon. The figures (in lakhs of Rs.) are given in the following table. <table><tr><td></td><td colspan="4">Salesmen</td></tr><tr><td>Season</td><td>A</td><td>B</td><td>C</td><td>D</td></tr><tr><td>Summer</td><td>36</td><td>36</td><td>21</td><td>35</td></tr><tr><td>Winter</td><td>28</td><td>29</td><td>31</td><td>32</td></tr><tr><td>Monsoon</td><td>26</td><td>28</td><td>29</td><td>29</td></tr></table> Check if there is there any significant difference in the sales between the salesmen and season at 5% level of significance.		Salesmen				Season	A	B	C	D	Summer	36	36	21	35	Winter	28	29	31	32	Monsoon	26	28	29	29	10	CO4	BL 1
	Salesmen																												
Season	A	B	C	D																									
Summer	36	36	21	35																									
Winter	28	29	31	32																									
Monsoon	26	28	29	29																									
2.	The following table gives the yields of 15 samples of plot for three varieties of seed. <table><tr><td>A</td><td>B</td><td>C</td></tr><tr><td>20</td><td>18</td><td>25</td></tr><tr><td>21</td><td>20</td><td>28</td></tr><tr><td>23</td><td>17</td><td>22</td></tr><tr><td>16</td><td>15</td><td>28</td></tr><tr><td>20</td><td>25</td><td>32</td></tr></table> Test using analysis of variance whether there is a significant difference in the average yield of seeds at 5% level of significance.	A	B	C	20	18	25	21	20	28	23	17	22	16	15	28	20	25	32	10	CO 4	2							
A	B	C																											
20	18	25																											
21	20	28																											
23	17	22																											
16	15	28																											
20	25	32																											
3.	Compute the Spearman's ranks correlation coefficient for the following data of the marks obtained by 10 students in the Commerce and Mathematics <table><tr><td>Commerce</td><td>35</td><td>54</td><td>80</td><td>95</td><td>73</td><td>73</td><td>35</td><td>91</td><td>83</td><td>81</td></tr><tr><td>Mathematics</td><td>40</td><td>60</td><td>75</td><td>90</td><td>70</td><td>75</td><td>38</td><td>95</td><td>75</td><td>71</td></tr></table>	Commerce	35	54	80	95	73	73	35	91	83	81	Mathematics	40	60	75	90	70	75	38	95	75	71	10	CO 5	1			
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