

solve all questions

4	Construct A Study of prices of rice at Chennai and Madurai gave the following data : Also the coefficient of correlation between the two is 0.8 . Estimate the most likely price of rice (a) at Chennai corresponding to the price of 18 at Madurai and (b) at Madurai corresponding to the price of 17 at Chennai.	10	5	A	2.1.3									
<table><tr><td></td><td>Chennai</td><td>Madurai</td></tr><tr><td>Mean</td><td>19.5</td><td>17.75</td></tr><tr><td>S.D.</td><td>1.75</td><td>2.5</td></tr></table>			Chennai	Madurai	Mean	19.5	17.75	S.D.	1.75	2.5				
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5	Solve the L.P.P. by Using Penalty ( Big-M ) Method Minimise $Z = 2x_1 + 3x_2$ Subject to Constraints $x_1 + x_2 \geq 5$ $x_1 + 2x_2 \geq 6$ $x_1, x_2 \geq 0$	10	6	A	2.1.3									

Q.3	a.	<p>Organize the Samples of two types of electric bulbs were tested for length of life and the following data were obtained. Test at 5% level of significance whether the difference in the sample means is significant. [Tabulated value at 5% level of significance is 2.16]</p> <table><tr><td></td><td>Type I</td><td>Type II</td></tr><tr><td>Number of samples:</td><td>9</td><td>8</td></tr><tr><td>Mean of the samples(in hours):</td><td>1164</td><td>1004</td></tr><tr><td>Standard deviation(in hours):</td><td>65</td><td>50</td></tr></table>		Type I	Type II	Number of samples:	9	8	Mean of the samples(in hours):	1164	1004	Standard deviation(in hours):	65	50	5	4	A
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	b.	<p>Develop Theory predicts that the proportion of beans in the four groups A,B,C,D should be 9:3:3:1. In an experiment among 1600 beans the numbers in the four groups were 882, 313, 287, and 118. Does the experimental results support the theory? [Tabulated value of <math>\chi^2</math> at 5% level of significance is 7.81]</p>	5	4	A												

Q.3 a.	Find: If X and Y are independent Poisson variates such that $P(X=1) = P(X=2)$ and $P(Y=2) = P(Y=3)$ , find the variance of $2X-3Y$ .	5	2	
OR				
b.	Build In a factory an article is produced on three machines. Their respective productions are 300 units by A, 250 units by B and 450 units by C. It is found that the percentages of defective articles for A, B and C are 1, 1.2 and 2 respectively. An article is randomly selected from a days production (which are mixed), then find the probability that the selected article is defective.	5	1	A

a.	Find the following values of the demand & the corresponding price of a commodity, the degree of Correlation between the demand & price by computing Karl Pearson's coefficient of correlation.	5	5	R																																	
	<table><tr><td>Demand in Quintals</td><td>65</td><td>66</td><td>67</td><td>67</td><td>68</td><td>69</td><td>70</td><td>72</td></tr><tr><td>Price in Paise per kg</td><td>67</td><td>68</td><td>65</td><td>68</td><td>72</td><td>72</td><td>69</td><td>71</td></tr></table>	Demand in Quintals	65	66	67	67	68	69	70	72	Price in Paise per kg	67	68	65	68	72	72	69	71																		
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b.	Solve the rank correlation coefficient from the following data relating to the ranks of 10 students in English & Mathematics.	5	5	A																																	
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