



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

19MAT202 – STATISTICS AND NUMERICAL METHODS



## 16 mark Questions and Answers

The following table shows the lives in hrs. of four brands of electric lamps.

A: 1610 1610 1650 1680 1700 1720 1800

B: 1580 1640 1640 1700 1750

C: 1460 1550 1600 1620 1640 1660 1740 1820

D: 1510 1520 1530 1570 1600 1680

Perform an analysis of variance and test the homogeneity of the mean lives of the 4 brands of lamps.

2. To study the performance of three detergents and three different water temperature the following

‘whiteness’ readings were obtained with designed equipment.

Water temp.	Detergent A	Detergent B	Detergent B
Cold water	57	55	67
Warm water	49	52	68
Hot water	54	46	58

Perform a two way analysis of variance, using 5% level of significance.

3. A tea company appoints four salesman A, B, C and D and observes their sales in three seasons,

summer, winter and monsoon. The figures are given in the following table.

Seasons	Salesman				Seasons total
	A	B	C	D	
Summer	36	36	21	35	128
Winter	28	29	31	32	120
monsoon	26	28	29	29	112
Salesman's total	90	93	81	96	360

i) Do the salesman significantly differ in performance?

ii) Is there significant difference between the seasons?

4. Analysis the variance in the latin square of yields paddy where P,Q, R and S denote the difference

methods of cultivation

S122 P121 P123 Q122

Q124 R123 P122 S125

P120 Q199 S120 R121  
R122 S123 Q121 P122

Examine whether the different methods of cultivation have given significantly different yields.

5. The following table shows the lives in hours of four brands of electric lamps

A	1610	1610	1650	1680	1700	1720	1800
B	1580	1640	1640	1700	1750		
C	1460	1550	1600	1620	1640	1660	1740 1820
D	1510	1520	1530	1570	1600	1680	

Illustrate, Analysis of variance and test the homogeneity of the mean lives of the 4 brands of lamps.

6. Three different machines are used for a production. On the basis of the outputs. Set up a one way ANOVA table and test whether the machines are equally effective.

<i>Outputs</i>		
<i>Machine I</i>	<i>Machine II</i>	<i>Machine III</i>
10	9	20
15	7	16
11	5	10
10	6	14