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 appointsd 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.

Outputs

Machine I	*Machine II*	*Machine III*
10	9	20
15	7	16
11	5	10
10	6	14