



**From the questions given below you are required to attempt any of 5 out of the total given 10 questions.**

Que 1. Explain In Brief about the characteristics of Chi-Square Test. And State what are the precautionary measures that we are required to take which using Chi-Square Test.

Que 2. Find Chi-square from the following information:

<i>Condition of child</i>	<i>Condition of home</i>		<i>Total</i>
	<i>Clean</i>	<i>Dirty</i>	
Clean	70	50	120
Fairly clean	80	20	100
Dirty	35	45	80
Total	185	115	300

State whether the two attributes viz., condition of home and condition of child are independent (Use Chi-square test for the purpose).

Que 3. On the basis of information given below about the treatment of 200 patients suffering from a disease, state



whether the new treatment is comparatively superior to the conventional treatment.

<i>Treatment</i>	<i>No. of patients</i>	
	<i>Favourable Response</i>	<i>No Response</i>
New	60	20
Conventional	70	50

For drawing your inference, use the value of  $\chi^2$  for one degree of freedom at the 5 per cent level of significance, viz., 3.84.

Que 4. Set up an analysis of variance table for the following per acre production data for three varieties of wheat, each grown on 4 plots and state if the variety differences are significant.

<i>Plot of land</i>	<i>Per acre production data</i>		
	<i>Variety of wheat</i>		
	<i>A</i>	<i>B</i>	<i>C</i>
1	6	5	5
2	7	5	4
3	3	3	3
4	8	7	4



Que 5. Set up ANOVA table for the following information relating to three drugs testing to judge the effectiveness in reducing blood pressure for three different groups of people:

Amount of Blood Pressure Reduction in Millimeters of Mercury

	<i>Drug</i>		
	<i>X</i>	<i>Y</i>	<i>Z</i>
Group of People <i>A</i>	14	10	11
	15	9	11
<i>B</i>	12	7	10
	11	8	11
<i>C</i>	10	11	8
	11	11	7

Do the drugs act differently?

Are the different groups of people affected differently?

Is the interaction term significant?

Answer the above questions taking a significant level of 5%.

Que 6. Analyse and interpret the following statistics concerning output of wheat per field obtained as a result of experiment conducted to test four varieties of wheat viz., A, B, C and D under a Latin Square Design.



<i>C</i> 25	<i>B</i> 23	<i>A</i> 20	<i>D</i> 20
<i>A</i> 19	<i>D</i> 19	<i>C</i> 21	<i>B</i> 18
<i>B</i> 19	<i>A</i> 14	<i>D</i> 17	<i>C</i> 20
<i>D</i> 17	<i>C</i> 20	<i>B</i> 21	<i>A</i> 15

Que 7. A sample of 200 bulbs made by a company give a life time mean of 1540 hours with a standard deviation of 42 hours. Is it likely that the sample has been drawn from a population with the mean life time of 1500 hours? You may use 5% level of significance. Calculate using relevant statistical test.

Que 8. The mean produce of wheat of a sample of 100 fields in 200 lbs. per acer with a standard deviation of 10 bls. Another sample of 150 fields gives the mean of 220 lbs. with a standard deviation of 12 lbs. Can the two samples be considered to have been taken from he same population? Whose standard deviation is 11 lbs? Use 5% level of significance. Calculate with the help of convenient statistical tool/test.



- Que 9. Discuss In Detail the steps involved in **Decision Making Process**.
- Que 10. Explain in the detail the three types of decision making environment.