

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions choosing not more than
Three in each Section.

SECTION A

(5 × 20 = 100)

1. What do you mean by research? Explain its significance in modern times.
2. Point out the important limitations of tests of hypotheses what precaution the researcher must take while drawing inferences as per the results of the said tests.
3. Examine the merits and limitations of the observation method in collecting material. Illustrate your answer with suitable examples.
4. From the following data, find the two regression equations.

X:	15	17	22	21	20	22	25
Y:	14	15	18	13	15	19	20

5. Electric bulbs manufactured by X and Y companies gave the following results.

	X company	Y company
Number of bulbs used	100	100
Mean life in hours	1300	1248
S.D in hours	82	93

Using the standard error of the difference between means state whether there is any significant difference in the mean life of the two makes.

(Table value of 'z' at 1% level = 2.58).

SECTION B

6. Examine the limits and uses of scientific method in good research.
7. What is sampling method? Discuss the various types of sampling methods used in social investigation work.
8. A company keeps records of accidents. During a recent safety review, a random sample of 60 accidents was selected and classified by the day of the week on which they occurred.

Day :	MON	TUE	WED	THURS	FRI
Number of accidents :	8	12	9	14	17

Test whether there is any evidence that accidents are more likely on some days than others. (Table value χ^2 for 4 d.f at 5% level is 4.5).

9. Three samples below have been obtained from normal populations with equal variances. Test the hypothesis at 5% level the population means are equal.

8	7	12
10	5	9
7	10	13
14	9	12
11	9	14

The table value of F at 5% level for $V_1 = 7$ and $V_2 = 17$ is 3.88.

10. Describe in brief, the layout of a research report covering all relevant aspects.
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