



**2021/TDC(CBCS)/EVEN/SEM/
STSHCC-601T/102**

**TDC (CBCS) Even Semester Exam.,
September—2021**

STATISTICS

(6th Semester)

Course No. : STSHCC-601T

(Design of Experiment)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Symbols have their usual meanings

SECTION—A

Answer any *ten* of the following questions : $2 \times 10 = 20$

1. Define treatment in reference to an experiment.
2. What is the role of randomization in experimental design?



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3. What do you mean by local control in context of designing an experiment?
4. What is the purpose of defining experimental error in an experimental design?
5. Mention the demerits of a complete randomized design.
6. Mention two differences between complete randomized design and randomized block design.
7. Define relative efficiency.
8. What are the merits of using Latin square design?
9. Define complete and incomplete block designs of experiments.
10. Define the balanced incomplete block design (BIBD).
11. What do you mean by symmetric BIBD?
12. Define resolvable BIBD.
13. Define main effect of a treatment in context of a 2^2 -factorial design.

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(Continued)

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14. Mention two advantages of using factorial design.
15. What do you mean by partial confounded design?
16. Give an example of 2^3 -factorial design.
17. Define fractional factorial experiments.
18. Define correction factor.
19. Write two merits and demerits of LSD.
20. What is missing plot technique?

SECTION—B

Answer any *five* of the following questions : $6 \times 5 = 30$

21. Give statistical model for complete randomized design with one observation per unit. Also discuss the statistical analysis.
22. Elaborate the components required for a good experimental design.
23. Describe a randomized complete block design.

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(Turn Over)



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24. Discuss a Latin square design and its statistical analysis.
25. Interpret the necessary conditions of BIBD.
26. Establish the interrelationship among BIBD, symmetric BIBD and resolvable BIBD.
27. What do you mean by confounding? Mention the differences of partial and complete confounding.
28. Give statistical model for a two-factor factorial experiment in a randomized block design and also give the ANOVA table.
29. Obtain the formula for single missing observation in case of RBD.
30. Describe the method of estimation of missing observation in case of LSD.
