

**2023/TDC(CBCS)/ODD/SEM/  
STSDSC/GE-101T/111**

**TDC (CBCS) Odd Semester Exam., 2023**

**STATISTICS**

**( 1st Semester )**

Course No. : STSDSC/GE-101T

**( Descriptive Statistics and Probability Theory )**

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

**SECTION—A**

Answer *fifteen* questions, selecting *three* from each

Unit :

1×15=15

**UNIT—I**

1. Define nominal data.
2. Define population.
3. Define sample.
4. Define quantitative data.

( 2 )

UNIT—II

5. Define standard deviation.
6. Define skewness.
7. Define Kurtosis.
8. Define Cumulants.

UNIT—III

9. Define correlation coefficient.
10. Define regression coefficient.
11. Define regression.
12. Define no correlation.

UNIT—IV

13. Define sample space.
14. Define composite event.
15. Define independent event.
16. Define impossible event.

24J/127

( Continued )

( 3 )

UNIT—V

17. Define random variable.
18. Define independence.
19. Define conditional probability.
20. Define equally likely events.

SECTION—B

Answer five questions, selecting one from each  
Unit : 2×5=10

UNIT—I

21. Distinguish between discrete and continuous data.
22. Define histogram and write its uses.

UNIT—II

23. Define second-order raw moment.
24. Define mean deviation about mean.

24J/127

( Turn Over )

( 4 )

UNIT—III

25. Define Spearman's rank correlation coefficient.
26. Define regression lines of  $Y$  on  $X$ .

UNIT—IV

27. Show that probability of sample space is equal to 1.
28. State the classical definition of probability.

UNIT—V

29. If  $A$  and  $B$  are independent events, then  $\bar{A}$  and  $\bar{B}$  are also independent events.
30. Prove that  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ , where  $A$  and  $B$  are not mutually exclusive events.

24J/127

( Continued )

( 5 )

SECTION—C

Answer five questions, selecting one from each  
Unit : 5×5=25

UNIT—I

31. What is the difference between nominal, ordinal and time series data?
32. What is ogive? What are two types of ogive? State its usage in practical situation.

UNIT—II

33. Discuss the different measures of dispersion along with their merits and demerits.
34. Obtain first four central moments in terms of raw moments.

UNIT—III

35. Define multiple and partial correlation coefficients.
36. Obtain the limits of Karl Pearson's correlation coefficient.

24J/127

( Turn Over )

UNIT—IV

37. What do you mean by mutually exclusive event and exhaustive event? State the statistical definition of probability.
38. State the axiomatic definition of probability. Write the limitation of classical and statistical definition of probability.

UNIT—V

39. State and prove Bayes' theorem.
40. State and prove the multiplication law of probability.

\*\*\*