

QP CODE: 24027779



Reg No :

Name :

**B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, OCTOBER 2024**

Third Semester

B.Sc Computer Science Model III

**COMPLEMENTARY COURSE - ST3CMT41 - STATISTICS - STATISTICAL METHODS
AND PROBABILITY THEORY**

2017 Admission Onwards

3F33675B

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

Each question carries 2 marks.

1. Define sample.
2. Explain chronological classification.
3. Explain the importance of time series analysis.
4. Distinguish between exclusive class and inclusive class.
5. What is meant by census?
6. What is meant by central tendency?
7. Find the mean of first ten even positive integers.
8. How will you locate median graphically?
9. Define the deciles.
10. Write down the sample space of throwing two coins and a die.
11. Distinguish between sure event and impossible event.
12. Define uniform distribution of the discrete type.

(10×2=20)

Part B

*Answer any **six** questions.*

Each question carries 5 marks.

13. Explain the various method of collecting primary data.





14. Briefly explain different types of scale.
15. Distinguish between systematic and stratified random sampling.
16. From the following data compute the value of harmonic mean.

Marks:	10	20	30	40	50
No of students:	20	30	50	15	5
17. Write the formula for computing combined standard deviation.
18. (a) State addition theory of probability for three events. (b) Suppose A, B, C are events such that $P(A) = P(B) = P(C) = 1/4$ and $P(A \cap B) = P(C \cap B) = 0$ and $P(A \cap C) = 1/8$. Evaluate $P(A \cap B \cap C)$.
19. State and prove multiplication for two events and deduce it for three events.
20. Define expectation of a random variable. What are its properties?
21. If a random variable X follows a Poisson distribution such that $P(X=1) = P(X=2)$. Find $P(X=0)$.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. (a) Distinguish between census and sampling. (b) Briefly explain various random sampling techniques.
 23. Calculate the mean, median and mode from the following data.

Class:	10-19	20-29	30-39	40-49	50-59	60-69
	70-79					
Frequency:	14	20	42	54	45	18
 24. In a test given to two groups of students the scores obtained are as follows:

Group 1:	23	11	19	26	35	46	53	18
	36							
Group 2:	31	18	21	31	48	40	18	23
	30							
- (1) Which group is more consistent? (2) Find the combined mean and standard deviation.
25. a) Differentiate between classical and statistical definition of probability. b) State and prove the addition theorem for two events. Deduce it for three events. c) A bag contains 5 white and 7 black balls. Another bag contains 6 white and 4 black balls. One ball is randomly transferred from first bag to second bag and then a ball is drawn from the second bag. Find the probability that it is a white ball.

(2×15=30)

