QP CODE: 19102231

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Reg No : .....

Name : .....

B.Sc. DEGREE (CBCS) EXAMINATION, OCTOBER 2019

Third Semester

B.Sc Computer Science Model III

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

2017 Admission Onwards

2DDA6D52

Maximum Marks: 80 Time: 3 Hours

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define sample.
2. Explain the importance of time series analysis.
3. Explain continuous data with examples.
4. Explain ratio scale with example.
5. What is meant by sampling?
6. What is meant by central tendency?
7. What are positional averages? Give an example
8. Define partition values.
9. Define Boxplot. How can we construct a box plot?
10. Three fair coins are tossed at a time. Enumerate the elements of the sample space.
11. State multiplication theorem on probability for 1) two events 2) three events.
12. What are the characteristics of Poisson distribution?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain any two method of collecting primary data. What are their advantages and disadvantages?

14. What is meant by classification? What are the different types of classification?

15. Distinguish between systematic and stratified random sampling.

16. Find out mode for the following:

Size :	3	8	10	12	15	20	25	30
Fre.	2	7	15	27	12	4	3	2

17. Define geometric mean. Write the merits, demerits and uses of geometric mean.

18. Explain (1) statistical regularity (2) frequency approach to probability and state two limitations of this approach

19. If A and B are independent then show that (1) A and B' are independent (2) A' and B are independent (3) A' and B' are independent

20. Define expectation of a random variable. What are its properties?

21. Find the mgf of normal distribution.

(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 mean and median for the following data

Class :	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Frequency:	4	6	5	8	6	6	5

Also obtain mode using the empirical relationship

24. Obtain Mean Deviation about median for the data

Marks:	20-40	40-60	60-80	80 -100	100-120	120-140
Frequency:	8	12	24	16	6	4

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)