BCA DEGREE(CBCS)EXAMINATION, DECEMBER 2018

First Semester

Bachelor of Computer Application

Complementary Course – ST1CMT31 – BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY

2018 Admission only

C7F554E6

Maximum Marks: 80   **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries 2 marks.

1. What are cumulative frequency curves?

2. What are partition values?

3. Find the range for the series 43, 25, 18, 29, 9, 69, 71.

4. What is curve fitting?

5. Write down the equation of a straight line by explaining the terms used.

6. Comment on the result: byx=-0.82 and bxy=0.25

7. Distinguish between sure event and impossible event.

8. What is the probability of selecting a boy from a class containing 4 Boys and 3 girls?

9. What are prior probabilities?

10. What is cumulative probability function?

11. Find the expectation of X if $f(x)=30x4$ $0 \leq x \leq 1$.

12. Write down the formula for mean,SD and mgf of a continuous randomvariable.

(10×2=20)

Part B

Answer any **six** questions.

Each question carries 5 marks.

13. Draw a histogram and super impose on it the frequency polygon

Mid value	15	25	25	45	55	65	75
Frequency	9	25	38	35	18	12	5

14. Find mean and median for the following:

Class	0-10	10-20	20-30	30-40	40-50
f	12	17	22	18	11

15. Find coefficient of variation for the following
43,25,18,29,9,52,69,71,50,10.

16. What is a scatter diagram? From the scatter diagram how do you infer the nature of relationship between the variables?

17. How to identify the two regression lines?.Explain

18. Explain statistical regularity and frequency approach to probability

19. Define conditional probability and statistical independence.

20. From the following mass fuction ,obtain the value of c and distribution function

X	0	1	2	3	4	5	6	7	8
P(x)	c	3c	5c	7c	9c	11c	13c	15c	17c

21. Define the terms Expectation and Variance of discrete randomvariables.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Find SD and coefficient of variation :.

Class	10-15	15-20	20-25	25-30	30-35
frequency	5	20	47	38	10

23. Calculate the coefficient of correlation from the following data:Also obtain the equations of the regression lines.

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

24. A bag contains 8 balls,identical except for colour of which 5 are red and 3 white.A man draws two balls at random one after another with out replacement. What is the probability that (1) one of the ball drawn is white and other red (2) What would be the value of these probabilities if a ball drawn is replaced before another ball is drawn.

25. (a) State the properties of mathematical expectation (b)Find the expectation and variance of $f(x)=30x^4(1-x)$ for 0<x<1

(2×15=30)