22102354

QP CODE: 22102354

Reg No : .....

Name : .....

BCA DEGREE(CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE EXAMINATIONS, JULY 2022

First Semester

Bachelor of Computer Applications

Complementary Course - ST1CMT31 - BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY

2017 Admission Onwards

9E350A14

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What is Box plot?
2. Mean of a series is given to be 30.A constant 5 is added to all elements of the series. What is the mean of the new series?
3. What is mean deviation?
4. What is a line of best fit?
5. If r=0.89, PE=0.023, find the value of n
6. Why there be two regression lines in case of simple regression?
7. Write down the sample space of throwing two coins and a die.
8. In a class there are 30 boys and 20 girls. From the class one name is picked up at random.What is the probability that it is a boy's name
9. Define conditional probability
10. Define Random variable
11. If V(x)=2 find V(2x+5)
12. What are the properties of mgf.

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. How will you construct a frequency curve for the following data?

Class	5-10	10-15	15-20	20-25	25-30
frequency	4	15	24	9	2

14. Explain various partition values.How will you find it.

15. What is coefficient of variation?Mention its uses.

16. Explain how will you fit a power curve using the method of curve fitting.

17. Find the mean of variables X and Y given the following:
Regression equation of Y on X: 2y-x-50=0
Regression equation of X on Y: 3y-2x-10=0

18. A problem in Statistics is given to three students A,B and C whose chances of solving it are 1/2,1/3 and 1/4.What is the probability that the problem will bw solved if they try independently.

19. Probabilities that a husband and wife will be alive 20 years from now is given by 0.8 and 0.9 respectively.Find the probability that in 20 years (1) both will alive (2) neither will alive.

20. The distribution function of a random variable is $F(X)=(3x^3-x^4)/4$ in the range $0<x<2$. Find the pdf.

21. If $f(x)=Ae^{-x/5}$:$x>0$
=0 otherwiswe is a pdf.
Determine A and find its mean.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. An analysis of monthly wages paid to workers in two companies A and B gives the following results:

(a)Which of the companies pays out larger amount as monthly wages?

(b) In which company there is greater variability in individual wages

	CompanyA	Company B
No.of workers	586	648
Average monthly wages	52.5	47.5
Variance	110	113

23. Obtain the two regression equations and the value of correlation coefficient.

X	10	15	12	17	13	16	24	14	22
Y	30	42	45	46	33	34	40	35	39

24. What are the different approaches used for defining probability? Explain

25. A random variable X has the following mass function. Find the value of c and obtain its distribution function.

X	0	1	2
P(x)	$3c^2$	$4c-10c^2$	5c-1

(2×15=30)