BCA DEGREE(CBCS)EXAMINATIONS, OCTOBER 2021

First Semester

Bachelor of Computer Application

Complementary Course - ST1CMT31 - BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY

2017 Admission Onwards

E26EA3FD

Time: 3 Hours   Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What is a frequency curve?

2. What are functions of an average?

3. Find SD of the data 4, 7, 2, 6, 9, 11, 12.

4. Write down the regression equation of X on Y.

5. What is the relation between the regression coefficients when there is perfect correlation?

6. When correlation coefficient is one, what is the nature of the regression lines?

7. Explain discrete and continuous sample space.

8. What is relative frequency definition of probability?

9. State addition theorem for any two events.

10. What are the properties of probability mass functions?

11. If f(x) =2x for 0.

12. Can a random variable X .have the following probability density : f(x) = x, 0.

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. Draw a histogram for the following data:

Class	0-10	10-20	20-40	40-70	70-100	100-110
frequency	7	14	28	34	18	2

14. How will you calculate range for frequency distributions?

15. How is coefficient of variation differ from standard deviation?

16. Explain how will you fit a straight line using least square principle.

17. Find Karl Pearson's coefficient of correlation and P.E

X	12	20	15	22	18	24	20	12
Y	30	35	28	36	29	39	30	25

18. Probability that a patient is correctly diagnosed is 0.4.If a patient is correctly diagnosed he will survive is 0.8. What is the probability that a patient is correctly diagnosed and survived?

19. State and prove multiplication theorem for two events.Deduce the result for three events.

20. Find E(X) and V(X) for f(1)=1/4, f(2)=1/2 and f(3)=1/4.

21. Explain moment generating function of a continuous random variable by stating its important properties.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. The following table gives the age distribution of 542 workers ina company.Calculate Q_1, Q_3, D_4 and P_{27}

Age	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No.of workers	3	61	132	153	140	51	2

23. Explain least square principle in curve fitting and explain how will you fit a straight line using this method.

24. State and prove Baye's theorem.

25. Briefly explain mean ,variance and mgf of a random variable.Also state their properties.

(2×15=30)