BCA DEGREE (CBCS) EXAMINATION, NOVEMBER 2019

First Semester

Bachelor of Computer Application

Complementary Course - ST1CMT31 - BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY

2017 Admission Onwards

7C6486B8

Time: 3 Hours   Maximum Marks :80

Part A

Answer any ten questions.

Each question carries 2 marks.

1. How will you draw a less than ogive?

2. If mean =30, median=32 find mode.

3. Define variance

4. What are the normal equations for fitting a straight line?

5. What is mean by limited degree of correlation?

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

7. Define equally likely events with example.

8. Define subjective probability

9. When will you say that two events are statistically independent?

10. Find k if $f(x) = k x e^{-x}$ 0

11. If $E(X)=3.5$, find $E(2x+7)$

12. Find the expectation of X if $f(x)=30x^4$ $0 \leq x \leq 1$.

(10×2=20)

Part B

Answer any six questions.

Each question carries 5 marks.

13. Represent the following data by a stem and leaf chart:

11,10,13,23,27,28,25,32,38,49,40,47

14. Find median,quartilesand 8th decile of the following:
120,130,140,110,160,150,190,180,170,200

15. Find out coefficient of variation for the following:
200,210,208,160,220,250

16. Explain least square principle in curve fitting

17. Out of the two lines of regression given by
x+2y-5=0 and 2x+3y-8=0,which one is the regression line of X on Y

18. If odds in favour of A solving a problem are 2 to 3 and odds against B solving the same problem are 3to5.Find the probability for (1) A solving the problem (2) Bsolving the problem

19. There are two urns one containing 5 white and 4 black balls and the other containing 6 white and 5 black balls.One urn is chosen and one ball is drawn. If it is white,what is the probability that the urn selected is the first

20. An unbiased die is thrown.Obtain the probability distribution for it.

21. Let X have density function f(x)=1/(b-a) ;a<x<b
                              =0 otherwise.
Find its mean and variance

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. Draw a histogram and frequency polygon for the following data:

Class	0-10	10-20	20-30	30-40	40-50
frequency	3.	20	20	15	6

23. From the following result ,estimate the yield of crops when the rainfall is 22 cms.and the rainfall when the yield is 600 kgs.
Coefficient of correlation between yield and rainfall is 0.2

	Yieldin kgs.(Y)	Rainfall in cms (X)
Mean	508.4	26.7
SD	36.8	4.6

24. Given A,B,C are independent events. P(A)=0.3,P(B)=0.2 and P(C)=0.4.Find the probability for (a) all occuring (b)none occuring (c)Atleast one occuring (d)Exactly one occuring

25. For the function $f(x)=cxe^{-x}$;x>0 .find C .Also find mean ,variance and mgf,

(2×15=30)