



QP CODE: 19102142



Reg No : .....

Name : .....

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

**Third Semester**

B.Sc Electronics Model III

**COMPLEMENTARY COURSE - ST3CMT01 - STATISTICS-PROBABILITY AND  
STATISTICS**

2017 Admission Onwards

388B396A

Maximum Marks: 80

Time: 3 Hours

**Part A**

*Answer any ten questions.*

*Each question carries 2 marks.*

1. Define Population and sample.
2. Write notes on Ogive curves.
3. Distinguish between Skewness and kurtosis.
4. Define Simple random sampling.
5. A random variable X has  $E(X) = 2$ ,  $E(X^2) = 8$  Find  $V(x)$
6. Define binomial distribution.
7. Define point estimation.
8. Define type I errors and type II error.
9. Explain goodness of fit.
10. What is mean by linear and non linear correlation?
11. What is the scatter diagram?
12. Find byx if  $2x+4y-5=0$  is the equation of y on x.

(10×2=20)

**Part B**

*Answer any six questions.*

*Each question carries 5 marks.*

13. What are the uses and limitation of Graphs and Diagrams?





14. Draw a pie diagram for the following data of Sixth Five Year plan Public sector Outlays.

Agriculture and Rural Development	12.9%
Irrigation	12.5%
Energy	27.2%
Industry & Minerals	15.4%
Transport and Communication	15.9%
Social Service & Others	16.1%

15. The monthly salary paid to all workers in a firm was Rs.3100. The number of male workers was twice that of the female workers. If the mean salary of a male worker was Rs.3500, find the mean salary of a female worker.
16. A problem in statistics is given to students A, B, C whose chances of solving are  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$  respectively. What is the probability that the problem (i) will be solved (ii) will not be solved.
17. What are the properties of Normal distribution?
18. 1000 ladies were chosen at random from the inhabitants of Bombay city and 550 were found to have dark eyes. Does this finding contradict the hypothesis that the event of a lady having dark eye has probability  $\frac{1}{2}$ .
19. Find Karl Pearson's co-efficient of correlation between the values of x and y given below.  
Also find probable error and interpret. Assume 69 and 112 as the mean value for x and y respectively
- |   |     |     |     |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|-----|-----|-----|
| X | 78  | 89  | 96  | 69  | 59  | 79  | 68  | 61  |
| Y | 125 | 137 | 156 | 112 | 107 | 136 | 123 | 108 |
20. What are the properties of regression coefficient?
21. Comment on the following results. For a bivariate distribution, 1) Coefficient of regression of y on x is 4.2 and coefficient of regression of x on y is 0.50 2)  $b_{xy} = -.82$  and  $b_{yx} = .25$

(6×5=30)

### Part C

Answer any two questions.

Each question carries 15 marks.

22. Define primary data. State the various methods of collecting primary data and discuss their relative merits and demerits.
23. Find the coefficient of variation for the following data and mention its uses

X	700-900	900-1100	1100-1300	1300-1500	1500-1700	1700-1900
f	10	16	26	18	8	3





24. Three judges gave the following ranks to eight contestants. Use the method of rank correlation mention which of the judges 1. Coincide most 2. Differ most

Judge A	1	2	3	4	5	6	7	8	9
Judge B	7	4	3	9	1	2	5	6	8
Judge C	3	9	5	8	7	4	1	2	6

25. In a partially destroyed record of an analysis of correlation data the following results only are eligible Variance of  $x=9$  Regression equations:  $8x-10y+66=0, 40x-18y=214$  Find (i) The mean values of  $x$  and  $y$  (ii) the coefficient of correlation (iii) Standard deviation of  $y$ .

(2×15=30)

