



QP CODE: 23145663



23145663

Reg No :

Name :

M Sc DEGREE (CSS) EXAMINATION, DECEMBER 2023

First Semester

M.Sc.Computer Science (Data Analytics)

CORE - CA030101 - STATISTICS FOR DATA ANALYTICS

2020 ADMISSION ONWARDS

0481E685

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Define probability
2. Distinguish between independent and dependent events.
3. What are the graphical representations of frequency distribution?
4. **From the following data compute the arithmetic mean by direct method.**

Marks	Number of students
X	
20	8
30	12
40	20
50	10
60	6
70	4





5. Define Bernoulli distribution.
6. Define continuous uniform distribution.
7. Distinguish between independent and dependent variables in regression analysis
8. What is a regression equation?
9. What is a trend? What are the two types of trends?
10. **What is the formula for calculating the autocorrelation between two variables x_t and x_{t+1} in a discrete time series $x_1, x_2, x_3, \dots, x_N$**

(8×1=8 weightage)

Part B (Short Essay/Problems)

Answer any *six* questions.

Weight 2 each.

11. Three cards are drawn successively from a deck of 52 playing cards. Find the probability all three cards drawn successively are queen without replacing the card after each draw.
12. A Bag I contains 5 white and 7 black balls while another Bag II contains 5 white and 4 black balls. One ball is drawn at random from one of the bags, and it is found to be black. Find the probability that it was drawn from Bag I.
13. Find first four central moments for the following observations
X- 13, 14, 18, 19, 21
14. The mean and variance of a distribution are 40 and 625 respectively. Find the mode and median if coefficient of skewness is -0.2?
15. Define binomial distribution. Find the mean and variance of the binomial distribution.
16. Define geometric distribution. Find the mean and variance.
17. What are the interpretations of the coefficient of correlation on the basis of probable error?
18. Explain about the schemes of components of seasonality analysis.

(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any *two* questions.

Weight 5 each.

19. **Find the weighted geometric mean from the following data:**





Group	Index Number	Weights
Food	260	46
Fuel & Lighting	180	10
Clothing	220	8
House & Rent	230	20
Education	120	12
Misc.	200	4

20. a) Define the probability density function of a random variable.
b) Let X is a random variable which denotes the number of heads obtained when a coin is tossed 3 times. Find the probability distribution of the random variable X and mean and variance of the distribution.
21. Explain in detail about different types of correlations between variables with examples
22. Explain in detail about data analytics life cycle.

(2×5=10 weightage)

