



QP CODE: 22002580



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Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION , NOVEMBER 2022

Second Semester

M.Sc. ARTIFICIAL INTELLIGENCE

CORE - AI010201 - STATISTICAL COMPUTING

2019 Admission Onwards

1BF1809E

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Define conditional probability
2. Define Binomial Distribution.
3. Define parameter.
4. Define sample variance.
5. Distinguish between one tailed and two tailed tests.
6. In 120 throws of six faced die, the even number occur 55 times. Is the die unbiased?
7. Explain different types of correlation?
8. Define correlation and explain the various types of correlation.
9. Write the procedure for carrying out one way analysis of variance.
10. How does one way ANOVA differ from two way ANOVA?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Define mutually exclusive events.
12. A juggler has seven red, five green, and four blue balls. During his stunt, he accidentally drops a ball and then picks it up. As he continues, another ball falls. What is the probability that the first ball that was dropped is blue, and the second ball is green?
13. Explain the assumptions of central limit theorem.





14. 50 children were given special diet for a certain period and control group of 50 other children were given normal diet. Their average gain in weight were found to be 7.2 lbs and 5.7 lbs respectively and the common standard deviation for gain in weight was 2 lbs. Assuming normally of the distributions would you conclude that the special diet really promoted weight?
15. In a laboratory experiment , two random samples gave following results:
Test the equality of sample variance at 5% level of significance

Sample	Size	Sample mean	Sum of squares of deviations from mean
1	10	15	90
2	12	14	108

16. Explain the applications of logistic regression.
17. Why 2x2 Latin square is not possible?
18. Write a note in two way ANOVA.

(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any **two** questions.

Weight 5 each.

19. $f(x) = \frac{x}{15}$; where $x = 1, 2, 3, 4, 5$
 $= 0$; otherwise
 is a density function of random variable X. Find its distribution function. Find $P(1 < x < 2)$ and $P(1/2 < x < 5/2)$?
20. From the following data, obtained from a sample of 1000 persons calculate the standard error of the mean.

Earning in Rs	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of Persons	50	100	150	200	250	100	100	100

21. Calculate the two regression equations from the data given below:

Price	10	12	13	12	16	15
Demand	40	38	43	45	37	43

22. Write a note on analysis of variance.

(2×5=10 weightage)

