

24P142

(Pages: 2)

Name: .....

Reg.No: .....

**FIRST SEMESTER M.Com. DEGREE EXAMINATION, NOVEMBER 2024**

(CBCSS - PG)

(Regular/Supplementary/Improvement)

**CC19P MCM1 C03 - QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**

(Commerce)

(2019 Admission onwards)

Time : 3 Hours

Maximum : 30 Weightage

**Part-A**

Answer any *four* questions. Each question carries 2 weightage.

1. What are the important limitations of quantitative techniques?
2. Define Binomial Distribution
3. What do you mean by statistical estimation?
4. What are the advantages and disadvantages of non parametric tests?
5. What are the uses of Chi square test?
6. Distinguish between correlation and regression analysis.
7. What are the important limitations of Microsoft excel?

**(4 × 2 = 8 Weightage)**

**Part-B**

Answer any *four* questions. Each question carries 3 weightage.

8. In a town 10 accidents took place in a span of 100 days. Assuming that the number of accidents follows poisson, find the probability that there will be at least 3 accidents in a day.
9. In a normal distribution 17% of the items are below 30 and 17% of the items above 60. Find the mean and standard deviation.
10. The mean life of random sample of 100 tyres is 15269 km. The manufacturer claims that the average life of tyres manufactured by the company is 15200 km with SD of 1248 km. Test the validity of company's claim.
11. In 120 throws of a six faced die, the even numbers occur 55 times. Is the die unbiased.
12. Test the randomness of following arrangement of students (Boys and Girls) in a class: B, G, B, G, B, B, B, G, B, G, B, B, B, G, G, B, B, B, B, G, G, B, G, B, B, B, G, B, B, B, G, G, G, B, G, B, B, B, G, B, G, B, B, B, G, G, B.
13. If  $r_{12} = 0.98$ ,  $r_{13} = 0.44$ ,  $r_{23} = 0.54$ , find  $R_{1,23}$ ,  $R_{2,13}$  and  $R_{3,12}$

14. In a trivariate distribution,  $\bar{x}_1 = 10$ ,  $\bar{x}_2 = 15$ ,  $\bar{x}_3 = 12$ ,  $\sigma_1 = 3$ ,  $\sigma_2 = 4$ ,  $\sigma_3 = 5$ ,  $r_{23} = 0.4$ ,  $r_{31} = 0.6$  and  $r_{12} = 0.7$ . Determine the regression equation of  $X_1$  on  $X_2$  and  $X_3$ .

(4 × 3 = 12 Weightage)

**Part-C**

Answer any *two* questions. Each question carries 5 weightage.

15. Two batches of same product are tested for their mean life. Assuming that lives of the two products follow a normal distribution, test the hypothesis that the mean life is same for both the batches, given the following information:

Batch	Sample Size	Mean life in hours	S.D
A	10	750	12
B	8	820	14

16. One thousand articles from a factory were examined and found to be 3% defective. Among 1500 similar articles from a second factory are found to be only 2% defective. Can it reasonably be concluded that the product of the first factory is inferior to the second?
17. A company had 4 salesmen P,Q,R and S, each of whom was sent for a period of one month to three types of areas, namely, urban area, rural area and semi-urban area. The sales (in thousand rupees) achieved by the salesmen are shown in the following table:

Area	Salesmen			
	P	Q	R	S
Urban	80	80	60	100
Rural	30	30	70	30
Semi-urban	70	40	50	80

Carry out an analysis of variance and interpret the results.

18. Find the Karl Pearson's co-efficient of correlation by direct method based on deviations.

X :	8	4	10	2	6
Y :	9	11	5	8	7

(2 × 5 = 10 Weightage)

\*\*\*\*\*