

23P142

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Name:

Reg.No:

FIRST SEMESTER M.Com. DEGREE EXAMINATION, NOVEMBER 2023

(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. Explain the significance of quantitative decisions.
2. Define normal distribution.
3. What is meant by Interval Estimation?
4. What are the assumptions in non parametric tests?
5. Write a note on Sign tests?
6. What do you mean by line of best fit?
7. What are the advantages of SPSS?

(4 × 2 = 8 Weightage)

Part-B

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

8. Consider families with 4 children each. What percentage of families would you expect to have (1) 2 boys and 2 girls (2) at least one boy
9. 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.
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. Of 500 people selected at random from a town 275 are drinkers of tea and others are drinkers of coffee. On the basis of these findings can you conclude that the tea and coffee are equally popular in that town.
12. If $r_{12} = 0.7$, $r_{31} = r_{23} = 0.5$, $\sigma_1 = 2$, $\sigma_2 = 3$ and $\sigma_3 = 3$, find the equation of plane of regression x_1 on x_2 and x_3

13. If $r_{12} = 0.7$, $r_{13} = 0.61$, $r_{23} = 0.4$, find $r_{12.3}$, $r_{13.2}$ and $r_{23.1}$
14. In a course of anti-malarial work in a certain city over a period of the time quinine was administered to 606 adults out of a total population of 3540. The data regarding incidence of malarial fever is given below. Examine whether the quinine has the effect of preventing fever.

	Fever	non-fever	Total
Quinine	19	587	606
Non- quinine	193	1741	1934
Total	212	2328	2540

(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 out the spearman's rank correlation coefficient

X	68	64	75	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70

(2 × 5 = 10 Weightage)
