25P142 (Pages: 2) Name: .....

Reg.No: .....

FIRST SEMESTER M.Com. DEGREE EXAMINATION, NOVEMBER 2025

(CBCSS - PG)

(Regular/Supplementary/Improvement)

CC19PMCM1C03 - 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. Define Quantitative Techniques
2. What are the important properties of Binomial Distribution?
3. What are the properties of Normal Distribution?
4. What are the advantages and disadvantages of non parametric tests?
5. Write a note on Mann-Whitney U- tests?
6. Distinguish between correlation and regression analysis.
7. What is SPSS?

(4 × 2 = 8 Weightage)

Part-B

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

8. 3% electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs, exactly 5 bulbs are defective.
9. In a sample of 500 units of a commodity from a large consignment, 40 units were considered defective. Estimate the percentage of defective in the whole consignment and limits within which the percentage will probably lie.
10. The average life of 26 bulbs were found to be 1200 hours with a S.D of 150 hours. Test whether these bulbs could be considered as a random sample from a normal population with mean 1300 hours.
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. In a trivariate distribution, $\bar{x}_1 = 53$, $\bar{x}_2 = 52$, $\bar{x}_3 = 51$, $\sigma_1 = 3.88$, $\sigma_2 = 2.97$, $\sigma_3 = 2.86$, $r_{23} = 0.8$, $r_{31} = 0.81$ and $r_{12} = 0.78$. Find the linear regression equation of 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. The following information is obtained concerning an investigation of 50 ordinary shop of small size.

	In town	In villages	Total
Run by men	17	18	35
Run by women	3	12	15
Total	20	30	50

Can it be inferred that shops run by women are relatively more in villages than in town? Use x^2 test.

(4 × 3 = 12 Weightage)

Part-C

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

15. The average no. of articles produced by two machines per day are 200 & 250 with S.D 20 & 25 respectively on the basis of 25 days production. Can you regard both the machines equally efficient at 1% level of significance?

16. In a sample of 1000 people selected from District X, 450 were regular drinkers of coffee. In another sample of 800 people drawn from District Y, 400 were regular drinkers of coffee. Test whether there is significant difference between the two districts, regarding the coffee drinking habit of people.

17. A test was given to 5 students chosen at random from M Com class each of the 3 universities in Bihar. Their scores were found as follows.

Universities	Scores				
A	90	70	60	50	80
B	70	40	50	40	50
C	60	50	60	70	60

Perform ANOVA and show if there is any significant difference between the scores of students in the 3 universities.

18. X : 5 10 5 11 12 4 3 2 7 6
Y : 1 6 2 8 5 1 4 6 5 2
Find the Karl Pearson's co-efficient of correlation.

(2 × 5 = 10 Weightage)

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