26151905

26151905

Reg. No.....

Name.....

M.Com. DEGREE (PRIVATE) EXAMINATION, JULY 2026

First Semester

Faculty of Commerce

Paper IV—QUANTITATIVE TECHNIQUES

(2016—2018 Admissions—Final Mercy Chance)

Time : Three Hours | Maximum Marks : 75

NPC Permitted

Section A

Answer **all** *questions.*
Each question carries 2 *marks.*
Answer not to exceed **half a page** *each.*

1. Define quantitative techniques.
2. State any four applications of quantitative techniques in business.
3. What is meant by a random experiment ?
4. What is conditional probability ?
5. What is Bayes theorem ?
6. What is a sampling frame ?
7. What is the principle of inertia of large numbers ?
8. State the assumptions of a *t*-test.
9. Define F-test and explain its assumptions.
10. What is Yate's correlation for continuity ?

(10 × 2 = 20)

Turn over

Section B

Answer any **five** *questions.*
Each question carries 5 *marks.*
Answer not to exceed **one page** *each.*

11. Explain the major limitations of quantitative techniques in business decision making.

12. Explain the relationship between Poisson and Normal distribution.

13. Define sampling error. Explain the factors influencing the magnitude of sampling error.

14. Explain the construction and uses of a two-way classification of data.

15. The probability that A solves a problem in statistics is 2/5 and the probability that B solve it is 3/8. If they try independaly find the probability that :

    (i) Both solve the problem ;

    (ii) None solves the problem ; and

    (iii) At least one solves the problem.

16. A salesman has a probability of 0.3 of making a sale to any customer. If he approaches 10 customers, find the probability of making :

    (a) Exactly 3 sales ; and

    (b) At least 2 sales.

17. The following two samples have standard deviations of 8 and 5, with sample sizes of 16 and 12 respectively. Test whether the population variances are equal at the 5 % level.

18. The observed frequencies of four categories are 18, 22, 25 and 15. If the expected frequency for each category is 20, calculate the Chi-square and test the goodness of fit at the 5 % level.

(5 × 5 = 25)

Section C

Answer any **one** *question.*
This question carries 10 *marks.*
Answer not to exceed **three pages.**

19. Define probability and explain the addition and multiplication theorems of probability with suitable examples.

20. Explain the uses of the F-distribution in hypothesis testing.

(1 × 10 = 10)

Section D

Answer any **one** *question.*
This question carries 20 *marks.*
Answer not to exceed **five pages.**

21. Explain the role of Quantitative Techniques in modern management. Discuss how they help managers in decision making and control.

22. A medical survey of 600 persons produced the following results :

	Lung Disease	Non-Lung Disease	Total
Smokers	90	210	300
Non-Smokers	45	255	300
Total	135	465	600

Using the Chi-square test, determine whether there is a significant association between smoking and lung disease at the 5 % level of significance. (Critical value at 5 % level of significance 3.84)

(1 × 20 = 20)