

**M.Com. DEGREE EXAMINATION, MAY 2021****First Semester**

Faculty of Commerce

**Paper IV—QUANTITATIVE TECHNIQUES**

Private Registration (2014–2018) Supplementary/Mercy Chance (Non-CSS)

Private Registration (2004–2011) Admissions Special Mercy Chance (Non-CSS)

Time : Three Hours

Maximum : 75 Marks

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

1. Write down the sample space of 'Throwing a die'.
2. What is normal distribution ?
3. What is standard normal variate ?
4. What you mean by critical region ?
5. Define degree of freedom.
6. What is a nonparametric test ?
7. What is meant by binomial distribution ?
8. Describe any two uses of Poisson distribution.
9. Define probability.
10. What are the limitation of 't' test ?

(10 × 2 = 20 marks)

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

11. How does the normal distribution differ from Binomial distribution ?
12. Distinguish between one tailed and two tailed tests.
13. What are Type I and TypeII errors ?
14. Give the application of Quantitative Techniques in business management.
15. A die is rolled and a coin is tossed, find the probability that the die shows an odd number and the coin shows a head.

**Turn over**



16. You flip a fair coin 7 times. What is the probability that the coin lands with the heads side up ?
17. If electricity power failures occur according to a Poisson distribution with an average of 3 failures every twenty weeks, calculate the probability that there will not be more than one failure during a particular week.
18. If  $X$  follows a normal distribution with mean 12 and variance 16, find  $P(X \geq 20)$ .

(5 × 5 = 25 marks)

**Section C***Answer any one question.**The question carries 10 marks.**Answers not to exceed three pages.*

19. The average life of 26 electric bulbs were found to be 1200 hours with a standard deviation of 150 hours. Test whether these bulbs could be considered as a random sample from a normal population with mean 1300 hours.
20. Explain the technique of analysis of variance in two way classification of data.

(1 × 10 = 10 marks)

**Section D***Answer any one question.**The question carries 20 marks.**Answer not to exceed five pages.*

21. From the following data use  $\chi^2$  test and conclude whether inoculation is effective in preventing tuberculosis :

	Attacked	Not attacked
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Inoculated	...	31	469
Non inoculated	...	185	1315

22. Three varieties of A, B, C wheat were shown in 4 plots each and the following yields in quintals per acre were obtained :

Plots	Varieties		
	A	B	C
1	10	9	4
2	6	7	7
3	7	7	7
4	9	5	6

(1 × 20 = 20 marks)