

QP CODE
C2118

Enrollment Number:

Name:

M.COM DEGREE EXAMINATIONS, AUGUST 2025
Second Semester
M.Com
M21CM07DC – Quantitative Techniques
(2024 July admissions)

Time: 3 Hours

Max Marks: 70

Section A

Answer any five of the following questions in two or three sentences each. Each question carries 2 marks.

1. Define Statistical Quality Control (SQC).
2. State Addition Theorem of probability.
3. Mention any two differences between t test and z test.
4. Differentiate between dependent variables and independent variables.
5. Name the type of control chart for attributes.
6. Differentiate between partial correlation and multiple correlation.
7. What are the drawbacks of Non – parametric test?
8. State the assumptions of binomial distributions.

(2X5=10)

Section B

Answer any six of the following questions in a paragraph each. Each question carries 5 marks.

9. What are the utilities of the normal distribution in statistical analysis and decision making?
10. Evaluate the different methods of studying correlation.
11. Distinguish between correlation and regression.
12. How does statistical quality control help in minimizing defects and rework in manufacturing process? Explain with examples.

13. A bag contains 4 white balls, 5 black balls, 3 yellow balls and 2 red balls. If one ball is drawn at random what is the probability that ball is not black or yellow?
14. Find the probability that at most 5 defective bolts will be found in a box of 200 bolt, if it is known that 2% of such bolt are expected to be defective? ($e^{-4} = 0.0183$)
15. Find whether any significant difference existing between height and weight given below;

Height (inch)	57	59	62	63	64	65	55	58	57
Weight (IBS)	113	117	126	126	130	129	111	116	112

16. The mean life of random sample of 64 tyres is 40800 km. The manufacturer claims that the average life of tyres manufactured by the company 41000 km with a standard deviation of 320 km. Test the validity of the company's claims at 5% of level of significance.
17. It is found that out of 500 units of a product produced by a machine 30 are defectives. Test whether the machine produces 2 % defectives items on an average.
18. A scores made by a candidate in a certain test are normally distributed with mean 500 and standard deviation 100. What percent of candidates receive scores?
 - a) Less than 400
 - b) Between 400 and 600
 (Area between $z=-1$ and $z=0$ is 0.34134)

(5X6=30)

Section C

Answer any two of the following questions in four pages each. Each question carries 15 marks.

19. Explain the Binomial, Poisson and Normal distributions with their Assumptions, Constructs and uses.
20. Discuss in detail the concepts of Statistical Process Control.

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21. Obtain regression equation of y on x and estimate y when $x = 55$, from the following data;

X	40	50	38	60	65	50	35
Y	38	60	55	70	60	48	30

22. A test was given to 5 students from the Vth class of 3 schools of a town, the individual score are;

School 1	9	7	6	5	8
School 2	7	9	5	4	5
School 3	6	5	6	7	6

Carry out Analysis of Variance.

(15X2=30)