

SECTION – C (30 Marks)Answer any **THREE** Questions**ALL** question carry **EQUAL** marks

(3x10 = 30)

16. State and Prove the Tchebyshev's inequality.
17. If the joint probability density function of the random variable X and Y is given by
 $f(x, y) = cx(x - y); 0 < x < 2, -x < y < x$
 $f(x) = 0, \text{ elsewhere}$
- Evaluate (i) C (ii) $f(x)$ and $f(y)$ (iii) $f(y/x)$.
18. State and prove the recurrence formula for moments of Binomial Distribution and also find first four moments of binomial distribution.
19. Derive the moment generating function of Normal distribution.
20. Derive the probability density function of Student's t distribution.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2022
(Sixth Semester)

Branch – STATISTICS

STATISTICAL QUALITY CONTROL-II

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

1. Define quality.
2. What is TQM?
3. Write the difference between process control and product control.
4. What are the control charts used for variables?
5. Write the control limits of 'c' chart.
6. Mention the specific use of 'p' chart.
7. What is process capability?
8. Write the formula for calculating process capability index.
9. What is hazard rate?
10. What do you mean by reliability?

SECTION - B (25 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

11. a) Write a note on the needs for quality improvement.
(OR)
b) Write about the various models of TQM.
12. a) Explain the basic principles of control charts.
(OR)
b) Differentiate attribute and variable control charts.
13. a) Explain the application of c- chart with an example.
(OR)
b) Explain the following: (i) Defect and defective
(ii) Chance variation and assignable variation.
14. a) Explain process capability index with a suitable example.
(OR)
b) Write about the role of process capability index in quality improvement.
15. a) Define reliability. Explain its need in quality control.
(OR)
b) Explain IFR and DFR.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16. Explain the fundamental principles of TQM.
17. Explain the construction of Mean and Range charts with an example.
18. Explain the construction of np chart with suitable example.
19. Describe the procedure of capability ratio.
20. Write a detailed note about the basic elements of reliability.