PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCom DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch – **COMMERCE (BUSINESS ANLYTICS)**

STATISTICAL QUALITY CONTROL

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 The control charts for number of defects per sample is
(i) p chart (ii) np chart
(iii) c chart (iv) u chart

2 In double sampling plan, if the number of defects is in between the two cut off numbers c_1 and c_2, then
(i) accept the lot (ii) reject the lot
(iii) take another sample (iv) none of these

3 In TQM, suppliers are treated as
(i) partners (ii) managers
(iii) employees (iv) enemies

4 The interpretation of $C_{pk} = C_p$ is
(i) the process is out of control (ii) the process is customer-centric
(iii) the process is centered (iv) the process is costly

5 The failure cost of a product possessing reliability R=1 is
(i) zero (ii) unity
(iii) infinity (iv) none of the above

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a Explain chance causes and assignable causes.
OR
b Explain control charts for variables.

7 a Explain producer's risk and consumer's risk.
OR
b Explain the characteristics of OC curve.

8 a Explain the benefits of TQM.
OR
b Explain the evolution of Quality.

9 a Explain process capability index.
OR
b Explain statistical process and quality improvement.

10 a Define the terms (i) Failure density (ii) Hazard rate (iii) Reliability
OR
b Explain the scope of Reliability.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Briefly explain the advantages of SQC.

OR

b Explain the procedure to construct $\bar{X}$ chart.

12 a Explain the procedure of Single sampling plan.

OR

b Explain briefly about acceptance sampling plans.

13 a Briefly explain TQM models.

OR

b Explain TQM and its components.

14 a Explain briefly the meaning and use of process capability.

OR

b How to measure and calculate process capability?

15 a Derive exponential distribution of a life model.

OR

b Explain the different modes of failure with the help of bath tub curve.

Z-Z-Z END