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0504N106

Candidate's Seat No :_____

B.Sc Semester-6 Examination

CC 309

Statistics

April-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Q-1 (A): What is SQC? State its uses. **[07]**

Q-1 (B): Explain the concept of 3σ limits in SQC. **[07]**

==OR==

Q-1 (A): Write a short note on "Theory of Runs". **[07]**

Q-1 (B): Discuss the causes of variations in a production process. **[07]**

Q-2 (A): State the main objectives of drawing $\overline{X}$ and R chart. Also explain what conclusions you draw from both the charts. **[07]**

Q-2 (B): Explain C chart in SQC in detail. **[07]**

==OR==

Q-2 (A): Differentiate between variable charts and attribute charts. **[07]**

Q-2 (B): Explain the construction of *p* and *np* charts. Also explain what conclusions you draw from both the charts. **[07]**

Q-3 (A): Write a short note on Producer's Risk and Consumer's Risk. **[07]**

Q-3 (B): What is OC curve? State its characteristics. **[07]**

==OR==

Q-3 (A): What is Double Sampling Plan? State its advantages. **[07]**

Q-3 (B): Define Acceptance Sampling. State its advantages. **[07]**

Q-4 (A): State the advantages of sampling inspection for variables. **[07]**

Q-4 (B): Explain sampling plan for variables when LCL is specified for known and unknown σ. **[07]**

==OR==

Q-4 (A): Explain sampling plan for variables when UCL is specified for known and unknown σ. **[07]**

Q-4 (B): State the advantages of sampling inspection for attributes. **[07]**

P.T.O

M106-2

Q-5 ANSWER IN SHORT: [ANY 7 OUT OF 12] **[14]**

1. State the pioneer of SQC in India. Name the person introduced control charts in SQC based upon the theory of random variations.
2. Define Specification Limits and Process Limits.
3. Define Control Limits. What do you mean by Revised Control Limits?
4. Define Rational Sub grouping in SQC. Does it affect the quality?
5. "*p* chart can be drawn even if all the samples are not of equal size." Do you agree? Why?
6. Are *p* chart and *np* chart same? In *np* chart, what should be done if LCL value is negative?
7. What are attribute charts? Define Low Spots in attribute charts.
8. What does C chart indicate? Does it apply to *p* chart and *np* chart too?
9. What is the outcome of variations due to chance causes as far as the process is concerned?
10. Which control chart should be used before constructing $\bar{X}$ chart? Why?
11. Define ASN and ATI.
12. Define AOQ and AOQL.

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