

B.Sc. (Honours) Examination, 2019
Semester-IV
Statistics
Course : CC-10
(Statistical Quality Control)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer **any four** questions

1. a) Describe the following terms:
Process control, chance causes, assignable causes, 3σ – limits, control charts
b) Describe, in detail, the construction of control chart for number of defective items 6+4
 2. a) Discuss the following concepts in connection with sampling inspection plan:
Consumer's risk, producer's risk, AOQL, OC curve and ASN curve
b) For a single sampling plan, obtain the expressions for the OC and ASN functions. 5+5
 3. a) Describe the construction of (\bar{X}, R) chart for varying sample size.
b) Describe the technique of sampling inspection by variables in the normal distribution case. 5+5
 4. a) Distinguish between –
i. Process control and product control
ii. Sample size and rational subgroup
b) Describe the construction of control chart for number of defects. 4+6
 5. Describe the sequential inspection plan in details. Compare it with the single inspection plan and double inspection plan in terms of number of samples required to test. 10
 6. What is a double sampling inspection plan? Find the expression of OC and ASN functions for a double inspection plan. 10
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