

B.Sc. Sem.-6 Examination

CC-309

Statistics

April-2025

Time : 2-30 Hours]

[Max. Marks : 70

- Q.1 (A) What is statistical quality control? Explain the how it's useful in industries? (07)
- (B) Explain the Control limit, Modified limit and construction of \bar{X} -chart. (07)

OR

- (A) What is variation in production? Explain the type of cause variation in quality control. (07)
- (B) Write a short note on 'Theory of Run' in SQC. (07)

- Q.2 (A) Write a note on the construction of an attribute control chart when the sample size of defects per unit is not equal and equal. (07)

- (B) Write a short note on p-chart and np-chart with example. (07)

OR

- (A) Write a difference between the chart for variable and chart for attribute. (07)
- (B) Describe the 3σ limit for \bar{X} and R chart. (07)

- Q.3 (A) What is Acceptance sampling plan? Explain the Sigle sampling plan. (07)

- (B) Explain the ideal OC curve. Also states its characteristic and properties. (07)

OR

- (A) What is double sampling plan? Explain the probability of acceptance in double sampling plan. (07)

- (B) Explain AOQ, LTPD and ATI with illustration. (07)

- Q.4 (A) Explain acceptance sampling plans for variables. Discuss its advantages and disadvantages. (07)

- (B) Derive a sampling plan for variables when the upper specification limit (L) is known and the lot standard deviation (σ) is known. (07)

OR

- (A) Explain the difference between acceptance sampling plans for attributes and variables. (07)

- (B) Derive a sampling plan for variables when the upper specification limit (U) is known and the lot standard deviation (σ) is unknown. (07)

E167-2

Q.5 Answer the following Question. (Any Seven)

(14)

1. Explain in short under which situation we modified control limit?
2. Which distribution is use in single sampling?
3. Explain difference between defect and defective.
4. Define: ASN (Double Sampling Plan)
5. Define: Producer Risk.
6. What does C-Chart Indicate?
7. What are lower spots in attribute chart?
8. What kind of variations are acceptable in control charts? Why?
9. Give the example of random or chance cause of variation.
10. How obtain the Pa when value of α and β given for AOQ?
11. If the Central Line (CL) is 15 and the Upper Control Limit (UCL) is 50, find the Lower Control Limit (LCL).
12. What is AOQ and AOQL.
13. Define: ATI.
14. How we can process double sampling plan explain in short.
