1804E091 Candidate's Seat No :_____

B.Sc. Sem-6 Examination
CC 309
Statistics

Time : 2-00 Hours]   April 2022   [Max. Marks : 50

INSTRUCTIONS:
➤ ALL QUESTIONS IN SECTION 1 CARRY EQUAL MARKS.
➤ ATTEMPT ANY THREE QUESTIONS IN SECTION-I.
➤ SECTION-II IS COMPULSORY WITH INTERNAL OPTIONS.
➤ USE OF SCIENTIFIC CALCULATOR IS ALLOWED.

SECTION–I

ATTEMPT ANY THREE QUESTIONS FROM THE FOLLOWING: [42]

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

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

Q-2 (A): Write a short note on "Theory of Runs".   [07]

Q-2 (B): State the advantages of sampling inspection.   [07]

Q-3 (A): Discuss the causes of variations in a production process.   [07]

Q-3 (B): State the main objectives of drawing $\overline{X}$ and R chart. Also explain what conclusions you draw from both the charts.   [07]

Q-4 (A): Differentiate between variable charts and attribute charts.   [07]

Q-4 (B): Explain C chart in SQC in detail.   [07]

Q-5 (A): Explain the construction of p and np charts. Also explain what conclusions you draw from both the charts.   [07]

Q-5 (B): Define Acceptance Sampling. State its advantages.   [07]

Q-6 (A): Write a short note on Producer's Risk and Consumer's Risk.   [07]

Q-6 (B): What is OC curve? State its characteristics.   [07]

Q-7 (A): What is Double Sampling Plan? State its advantages.

Q-7 (B): Explain the single sampling plan in detail with the help of an example.   [07]

Q-8 (A): Explain the difference between lot inspection and sample inspection.   [07]

Q-8 (B): Explain the double sampling plan (2000, 50, 1, 100, 4).   [07]

(P.T.O)

SECTION–II

Q-9 ANSWER IN SHORT: [ANY 8] [08]

A. Who introduced control charts in SQC based upon the theory of random variations?

B. Who was the pioneer of SQC in India?

C. Define Specification Limits.

D. Define Process Limits.

E. Define Revised Control Limits.

F. Define Rational Sub grouping in SQC.

G. "*p* chart can be drawn even if all the samples are not of equal size." Do you agree? Why?

H. In *np* chart, what do you do if LCL value is negative?

I. Define Low Spots in attribute charts.

J. What does C chart indicate?

K. What is the outcome of variations due to chance causes as far as the process is concerned?

L. Which control chart should be used before constructing $\overline{X}$ chart?

M. Define ASN.

N. Define AOQ and AOQL.

O. Define ATI.

P. Define AQL.