Indian Statistical Institute, Bangalore
M.S. (QMS) First Year
Second Semester – Statistical Process Control II

Final Exam Duration: 3 Hrs Date: May 02, 2017 Max Marks: 50

Remarks: Use only calculator.

1. [2 + 2 + 6 = 10]

a) Define chain sampling procedure.

b) State the conditions for implementing chain sampling plan.

c) Compute the probability of acceptance between 2 plans at p value of $0.01, 0.05, 0.10$ and compare them.

$$n = 5, c = 0, i = 3 \text{ and } n = 10, c = 1, i = 3$$

2. [4 + 6 = 10]

a) Illustrate csp - 1, csp - 2, csp - 3 and multilevel csp.

b) Draw the OC curve for the plan $i = 50, f = \frac{1}{5}$ and compute the value of AOQL.

3. [2 + 8 = 10]

a) What is sequencial sampling?

b) Develop a sequencial sampling procedure with

$$P_1 = 0.005, \propto = 0.05, P_2 = 0.05, \beta = 0.10$$

Calculate the acceptance and rejection number for the following value of n 50, 100, 150, 200.

4. [3 + 2 = 5]

a) Define the SKSP - 2 type skip lot sampling plan.

b) State how to compute probability of acceptance for such plan.

5. [3 + 7 + 5 = 15]

a) State the β-correction procedure.

b) Derive the β-correction factor.

c) Define the control system.

6. [3 + 5 = 8]

a) State the signal-to-noise ratios.

b) Suppose a CSP-1 Plan is used which is desired to maintain an AOQL of 1.9%. Specify two CSP-1 plan that would meet the specified AOQL value.