Indian Statistical Institute, Bangalore

M.S. (QMS) First Year

Second Semester - Statistical Process Control II

Final Exam Time: 3 hours Date: 22/04/2016 Max Marks: 70

1. Write short notes on the following:- [5 x 3 = 15]

a) Statistical Process Control v/s Process Adjustment.
b) Taguchi's concept of Loss Function.
c) Process Capability Calculation method when data does not follow Normal Distribution.

2. [2 + 10 + 5 + 3 = 20]

a) Define the concept of Taguchi's beta correction technique.
b) Derive the formula of β.
c) Describe the method of process correctional adjustment.
d) What type of process this method of process adjustment can be implemented?

3. [3 + 7 = 10]

a) Define continuous sampling plan scheme and its method.
b) Derive the OC curve of the following plan AOQ(%) = 0.018, f = 1/2, i = 1540.

4. [3 + 2 + 5 = 10]

a) When to apply chain Sampling Plan.
b) Define the method of Chain Sampling Plan (ChSP-1).
c) Draw OC curve of the plan. n = 5, i = 3.

5. Compute the β-correction table for the following data containing 16 observation. The observation are given in the order of their occurrence. [15]

75, 70, 70, 70, 75, 75, 77, 75, 75, 72, 78, 75, 75, 78, 78, 80