Roll No. .....

23060

M.Tech 2nd Semester (M.E.) (Manufacturing and Automation) (Elective-I) Examination– May, 2014

QUALITY CONTROL TECHNIQUES

Paper 925/M-608-A(D)

Time : 3 hours ***Max. Marks : 100***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions. All questions carry equal marks.

1. What do you mean by quality control ? Explain the role of graphical representation in quality control.

2. (a) What are the major points to be looked into while introducing statistical control charts for quality assurance in an industry ? Show typical X and R charts.

(b) What do you mean by product and process control and explain the cause of variation in quality ?

3. Explain the following terms in reference to quality control :

(i) Producer's risk

(ii) Consumer's risk

(iii) Average outgoing quality

(iv) Single sampling plan of inspection and

(v) p-chart

4. Explain the difference in interpretation between an observation falling below the lower control limit on an X-bar chart and one falling below the lower control limit on an R-chart. Discuss the impact of each on the revision of control charts.

5. (a) Explain the difference between specification limits and control limits. Is there a desired relationship between the two ?

(b) Define the inspection. What are the types of inspection ?

6. Explain the concept of process capability. When should it be estimated ? Discuss its impact on the production of scrap and/or rework.

7. (a) Describe the impact of the sample size and the acceptance number on the OC curve.

   (b) State and explain the advantages and limitations of acceptance sampling over 100% inspection.

8. (i) What are the advantages and disadvantages of variable sampling plans over those for attributes ?

   (ii) Explain the terms AOQ and AOQL for single sampling and double sampling plans.
