

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. Sem-IV Examination June- 2011****Subject code: 142502****Subject : Fundamentals of Quality Management****Date:13/06/2011****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Discuss concept of quality as per quality gurus like Juran and Crosby. **07**  
 (b) What is QFD? Discuss Importance of QFD **07**

- Q.2** (a) Discuss various phases of SQM. **07**  
 (b) Discuss need of acceptance sampling **07**

**OR**

- (b) what is benchmarking .explain with suitable example **07**

- Q.3** (a) Discuss various dimensions of a quality **07**  
 (b) Discuss concept of OC curve with neat sketch. also explain various risks. **07**

**OR**

- Q.3** (a) Explain various tools of Quality control. **07**  
 (b) Discuss various types of sampling plans with suitable examples **07**

- Q.4** (a) Discuss quality management scenario. in Indian industries. **07**  
 (b) Discuss various types of quality audits. **07**

**OR**

- Q.4** (a) Control charts for  $\bar{x}$  and R are maintained on a certain dimension of a **07**  
 manufactured part, measured in cm.The subgroup size is 4.The values of  $\bar{x}$   
 and R are computed for each subgroup. After 20 subgroups  $\sum \bar{X} = 41.340$   
 and  $\sum R = 0.320$ . Compute the values of 3-sigma limits for  $\bar{x}$  and R charts.

(Assume  $A_2=0.73, D_3=0, D_4=2.28, d_2=2.059$ )

- (b) In 25 sample of 50 pieces each, number of rejects was: **07**  
 1,2,5,6,3,5,2,1,1,0,0,1,0,1,0,2,1,0,0,1,1,0,0,1, and 0. In this process in  
 control? If the consumer is willing to accept lots of this product that are  
 2.5% or less nonconforming, will the process in present state produces an  
 acceptable lot?

- Q.5** (a) Why do Dodge-Romig sampling schemes enjoy easy popularity with **07**  
 industrial inspection? State some of the characteristics of these schemes.  
 (b) Derive relationship between AOQ, AFI and the process average for any **07**  
 sampling plan.

**OR**

- Q.5** (a) Discuss five stages of quality culture. **07**  
 (b) Discuss various charts for variables and attributes. **07**

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