

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED MANUFACTURING) /
B.Tech. AEROSPACE ENGINEERING (BTAE)**

Term-End Examination

June, 2015

01243

BME-007 : QUALITY ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. All questions carry equal marks. Assume suitable data, if required. Use of scientific calculator is allowed.

1. What are the seven basic tools of SQC ? Explain any five in detail. 10

2. To compare the price of a product in two cities, ten shops were selected at random in each town and the prices were noted below :

City 1 61 63 56 63 56 63 59 56 44 61

City 2 55 54 47 59 51 61 57 54 64 58

Test whether the average prices can be said to be the same in the two cities. [Given for 18 d of $t_{0.05} = 2.1$]

10

3. Distinguish between process FMEA and desire FMEA. What are the benefits of FMEA ? 10
4. Compute the reliability of the system as shown in Figure 1. 10

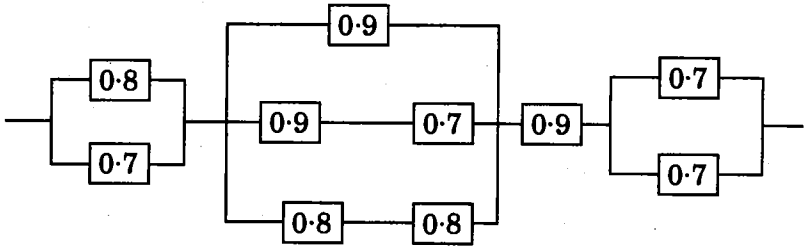


Figure 1

5. What are the common points in Juran's, Crosby's and Feigenbaum's philosophies ? What was Ishikawa's approach towards TQM ? 10
6. Write a detailed note on six-sigma methodology (DMAIC) of quality management. 10
7. Explain the procedure for constructing control charts for attributes. 10
8. Write short notes on the following : 10
 - (a) FMECA
 - (b) QFD
9. Explain the concept of cost of quality. Discuss the various types of quality costs. Describe the elements of cost of quality. 10