

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

Term-End Examination

December, 2015

BME-007 : QUALITY ENGINEERING

Time : 3 hours

Maximum Marks : 70

***Note :** Attempt any **ten** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Briefly explain the functions of various departments for achieving and maintaining quality. 3
- (b) Explain the two principal ways for recognizing the quality effects on cost and income. 4
2. (a) Explain the elements of 'Cost of Quality'. 3
- (b) Explain the 'Process Decision Programme Chart'. 4

- 3.** (a) Briefly explain the elements of TQM. 3
- (b) Discuss about the need for safety and health in industry. 4
- 4.** (a) What do you mean by acceptance sampling? 2
- (b) Calculate the probability of acceptance of a lot containing 5% of defectives by sampling plan with acceptance number 2 and sample size 500. 5
- 5.** (a) Discuss about offline quality control. 3
- (b) The average weight of 1000 iron rods are found to have a standard deviation of 1.024. Calculate the standard errors in the sample means, if the sample size is 10, 50 and 100. 4
- 6.** (a) Explain the various steps for carrying out experiments for Taguchi method. 4
- (b) What is the process of Benchmarking? 3
- 7.** What do you mean by 'House of Quality'? Discuss, in brief, the various steps to prepare the house of quality. 7

8. (a) What are the advantages of FMEA ? $3\frac{1}{2}$
- (b) Discuss about the applications of statistical process control. $3\frac{1}{2}$
9. (a) Briefly explain the role of analytical tools in reliability. 2
- (b) Discuss some important aspects for design of reliability. 5
10. (a) Discuss the method to implement TQM in a company. $3\frac{1}{2}$
- (b) Briefly explain how one could achieve customer satisfaction. $3\frac{1}{2}$
11. (a) Differentiate between single and double sampling plans. 3
- (b) What is the use of quality cost information ? 4
12. (a) Briefly explain the 7 QC tools used in TQM. 4
- (b) Write about 'Shewhart's' concepts in quality management. 3
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