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BME-007

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

Term-End Examination

00533

June, 2018

BME-007 : QUALITY ENGINEERING

Time : 3 hours *Maximum Marks : 70*

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

1. State at least three definitions of quality and discuss if all of them lead to the same conclusion. 7

2. Bring out the essential features of quality control and quality assurance. Are these two inclusive functions ? Explain. 7

3. Discuss the importance of audit in quality assurance. What different audits are essentially carried out ? 7

4. What are Deming's suggestions for achieving total quality ? 7

5. What is Six Sigma methodology ? How does it help in assuring quality ? 7

6. What is meant by ISO – 9000 ? Describe the various series of ISO. What are the benefits of ISO ? 7

7. Due to the extreme cost of interrupting production, a firm has two standby machines available in case a particular machine breaks down. The machine in use has a reliability of 0·94 and the backups have reliabilities of 0·90 and 0·80. In the event of a failure, either backup can be pressed into service. If one fails, the other backup can be used. Compute the system reliability. 7

8. Determine availability for each of these cases : 7

   (a) MTBF = 40 days, average repair time = 3 days.

   (b) MTBF = 300 hours, average repair time = 6 hours.

9. Define the term 'Inspection'. What are the aims of inspections ? What do you mean by "Inspection Standards" ? 7

10. What do you mean by "Statistical Quality Control" ? What are control charts ? Explain. 7

11. What is QFD ? What advantages can be derived from QFD ? 7

12. How is customer satisfaction related to quality of product or service ? What is customer value and how does it influence the working of an organization ? 7