| BME-007 |

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

Term-End Examination

00190

June, 2016

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.*

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1. (a) Briefly discuss the factors controlling the quality of design.   **4**

    (b) Explain the term "Quality Survey".   **3**

2. (a) What are the contributions of JURAN on quality management ?   **2**

    (b) What are the seven QC tools for quality improvement ?   **5**

3. (a) What are the requirements of ISO 9000 : 9004 ? *4*

(b) What are the methods and tools for assessing the effectiveness of safety and health program ? *3*

4. (a) Discuss the different types of sampling plans. *3*

(b) Draw OC curve for single sampling plan for n = 300, c = 2, r = 3. Use Poisson distribution, where n = sample size, c = acceptance number, r = rejection number. *4*

5. Explain briefly, the procedures for generating control charts for variables. *7*

6. (a) What do you mean by six sigma ? Briefly explain the DMAIC procedure. *4*

(b) Briefly explain the term, "Design of Experiments". *3*

7. (a) Define 'QFD'. *2*

   (b) Discuss briefly about the various quality management and planning tools. *5*

8. (a) What are the elements of FMECA ? $3\frac{1}{2}$

   (b) Discuss the steps for carrying out design FMEA. $3\frac{1}{2}$

9. (a) Discuss the reliability of series and parallel connection of components in a system. *3*

   (b) Explain the bathtub curve failure analysis, with a neat diagram. *4*

10. (a) Write some principles to ensure quality policy information to deal with vendors. *4*

    (b) Discuss the various customer needs. *3*

11. (a) Explain the use of ABC analysis to identify quality costs. *3*

    (b) Define the terms : *4*
       (i) Cost of failure
       (ii) Cost of appraisal
       (iii) Cost of preventing

12. (a) Explain the "Crosby's" concept of zero defect. *3*

(b) Discuss the use of "Cause and Effect" diagram proposed by Ishikawa. *4*