

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– II EXAMINATION – SUMMER - 2017

Subject code: 2724603**Date: 25/05/2017****Subject Name: Quality Engineering & Six Sigma Fundamentals****Time: 02:30 PM to 05:00 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 the contribution of Taguchi in designing off-line quality control techniques with the help of quality loss function. **07**
- (b) Explain the concept of Quality Triology as given by J M Juran **07**
- Q.2** (a) Six Sigma is not just for manufacturing, it can be applied to any industry/business. – Justify the statement giving suitable examples. **07**
- (b) Trace the journey of Quality through Inspection-to-Control-to-Assurance-to-Management explaining changing perspective of quality at each level. **07**
- OR**
- (b) What is quality? Is it costing to the organization or adding profit to it? – Support your answer with suitable examples. **07**
- Q.3** (a) Explain the relevance of ISO:9000, ISO:14000 and QS:9000 in overall business improvement. **07**
- (b) Draw a typical format of FMEA and explain significance of each element. **07**
- OR**
- Q.3** (a) How does the conceptual approach to ISO 14001 differ from ISO 9001? **07**
- (b) What is FMEA? What is the importance of Risk Priority Number (RPN) in FMEA? How RPN is calculated? State importance of each element which are used in the calculation of RPN. **07**
- Q.4** (a) Explain DMAIC methodology of Six Sigma. **07**
- (b) What is QFD? Draw typical QFD structure and explain importance of its each section. **07**
- OR**
- Q.4** (a) Differentiate between DMAIC and DMADV methodology of Six Sigma improvement drive. **07**
- (b) Describe how marketing, human resources, and finance/accounting can contribute to the QFD process **07**
- Q.5** (a) Explain how 5S technique will help improve quality and productivity of any business. What are the limitations of 5S techniques? **07**
- (b) Explain Kaizen and Poka Yoke techniques with suitable examples **07**
- OR**
- Q.5** (a) Explain the prerequisites, advantages and limitations of Quality Circle. **07**
- (b) Differentiate between manufacturing and service sectors in terms of identifying, controlling and improving quality characteristics giving suitable examples **07**