

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022

Subject Code:3171929**Date:16-01-2023****Subject Name:Quality and Reliability Engineering****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Discuss Just in Time Concept. **03**
 (b) Explain PDCA cycle. **04**
 (c) Define QFD and Discuss house of quality-product planning matrix. **07**
- Q.2** (a) Define following: (1) Parameter Design (2)System Design (3) Tolerance Design **03**
 (b) Discuss various Quality costs. **04**
 (c) Explain basic concepts, scope and implantation barriers of ISO 14000 **07**
- OR**
- (c) What is the role of ISO 14000 in managing good environmental practices. **07**
- Q.3** (a) Define following: (1) Quality (2) TQM (3) Poka yoke. **03**
 (b) Discuss the contribution of any one of the Quality Gurus. **04**
 (c) Define DOE and enlist the components of DOE. Discuss Taguchi Quality Loss Function. **07**
- OR**
- Q.3** (a) What is the difference between General Maintenance and Total Productive Maintenance? **03**
 (b) Explain the concept of 5S. **04**
 (c) Explain Pre-requisites of JIT. Also, Discuss the Elements of JIT **07**
- Q.4** (a) Explain briefly Bench Marking. **03**
 (b) Discuss seven basic types of waste. **04**
 (c) Discuss about the basic 7 Quality Control tools. **07**
- OR**
- Q.4** (a) Define Zero defects. Discuss various steps in implementing Zero defects. **03**
 (b) How Taguchi Techniques helps in achieving robust design of a product? **04**
 (c) Define FMEA. Draw a typical format of FMEA and explain its elements in brief **07**
- Q.5** (a) What is Quality Circle? Explain its role in industry. **03**
 (b) Give any Four definitions of Quality. **04**
 (c) What is world class manufacturing? Explain. **07**
- OR**
- Q.5** (a) Describe the concept of Kaizen. **03**
 (b) Explain any two TQM models. **04**
 (c) List various tools and techniques of KAIZEN. Also discuss any two of them. **07**
