

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) EXAMINATION – SUMMER 2019****Subject Code: 171906****Date: 10/05/2019****Subject Name: Quality And Reliability Engineering****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) Write a short note on the importance of the subject Quality Engineering. **07**
 (b) Explain the principles of Total Quality Management and also mention various benefits of implementing TQM in an organization. **07**
- Q.2** (a) Explain PDCA cycle in details with suitable example. **07**
 (b) Explain in detail about Cost of Quality. **07**
- OR**
- (b) State the importance of national and international quality awards. **07**
- Q.3** (a) Explain your understanding about quality circle. **07**
 (b) Explain 7 New Quality Management Tools. **07**
- OR**
- Q.3** (a) Explain about Juran Trilogy. **07**
 (b) Explain basic concepts, scope and barriers of ISO 14000. **07**
- Q.4** (a) Discuss about advantages and disadvantages of Total Productive Maintenance. **07**
 (b) Briefly Explain the concepts of Lean and Agile Manufacturing. **07**
- OR**
- Q.4** (a) Define Failure Mode and Effect Analysis (FMEA) and explain the various stages of FMEA. **07**
 (b) What do you understand by the Robust Design? How Taguchi techniques helps achieving robust design of a product. **07**
- Q.5** (a) Write short note on JIT Production system. **07**
 (b) Define the following terms: **07**
 Reliability, Availability, Maintainability, Failure Density, Mean Time To Failure (MTTF), Mean Time Between Failure (MTBF), Mean Time To Repair (MTTR)
- OR**
- Q.5** (a) Discuss Quality Function Deployment in detail. **07**
 (b) Draw a typical Bath-Tub Curve and explain it phases. **07**
