

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE –SEMESTER (NEW SYLLABUS) EXAMINATION- SUMMER 2019

Subject Code: 2181920

Date: 13-05-2019

Subject Name: Quality Engineering (Department Elective III)

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.

- Q.1**
- (a) Which are the seven magnificent quality tools? **03**
 - (b) Define Quality. What are the functions of Quality Management? **04**
 - (c) What do you understand by Total Quality Management? Describe the contribution of Deming in the field of TQM. **07**
- Q.2**
- (a) What do you understand by ISO? State its levels. Mention its importance in the field of quality. **03**
 - (b) Define and explain quality circle. **04**
 - (c) You are working at a manufacturing concern as a Manager- Quality Control Department. Prepare following assignment:-
Activity/Task:- Preparation of “5S work sheet and One H” checklist for Kaizen **07**

OR

- (c) Give roadmap for implementation of TQM in a manufacturing company. **07**
- Q.3**
- (a) Give cause and effect diagram for following:- **03**
 - (i) High cost of textile industry
 - (ii) TQM in Technical Education
 - (b) Explain Types of waste and Explain regarding how you will eliminate/reduce following wastes:- **04**
 - (i) Waste of movement
 - (ii) Waste of overproduction.
 - (c) The quality related costs for a product AAA are given in Table 1. **07**

S.No.	Category	Cost in Rs.(Lakhs)
1	Defective stock	01
2	Inspection Process	20
3	Consumer adjustment	25
4	Down grading products	18
5	Incoming inspection	40
6	Repairs	09
7	Scrap (Waste)	10
8	Scrap (Reusable)	05
9	Plant quality control engineering	12
10	Corporate quality control engineering	20
11	Spot check inspection	40

Identify the Prevention cost, Appraisal cost and failure costs and gives your comments as a Manager QC.

OR

- Q.3**
- (a) Differentiate between Lean and Agile manufacturing. **03**
 - (b) What are muda, muri, and mura? Explain the various types of muda. **04**

	(c)	Define FMEA. Explain how it helps in ensuring quality of a product. Draw a typical format of FMEA and explain its elements in brief	07
Q.4	(a)	Describe concept of KAIZEN.	03
	(b)	How Taguchi method is useful in design of experimental?	04
	(c)	Describe preparation of Quality Function Deployment (QFD) house of quality matrix by giving suitable example.	07
OR			
Q.4	(a)	What is the difference between General Maintenance and Total Productive Maintenance?	03
	(b)	Explain world class manufacturing (WCM) concept.	04
	(c)	Explain PDCA cycle in details.	07
Q.5	(a)	Explain how you will implement Lean manufacturing technique in a manufacturing organization.	03
	(b)	Explain JIT with real field application.	04
	(c)	Explain how you implement Six Sigma DMAIC methodology in an engineering enterprise.	07
OR			
Q.5	(a)	Define and discuss about benchmarking	03
	(b)	Explain various quality dimensions in service sector.	04
	(c)	Explain the concept of Six Sigma with the help of a Normal Distribution curve.	07
