

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024

Subject Code:3161913

Date:28-11-2024

Subject Name:Industrial Safety and Maintenance 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.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1 (a) What do you mean by quality? Explain the concept of quality circle.	03
(b) Explain short term and long term maintenance plans.	04
(c) Explain the Hazard and Operability Study (HAZOP).	07
Q.2 (a) Classify different types of failure in detail.	03
(b) Explain Breakdown analysis template by taking an example of any company.	04
(c) What is FMEA? How does FMEA help maintenance personnel?	07
OR	
(c) Explain the causes of wear of equipments and its preventions.	07
Q.3 (a) Define: 1.Opportunistic Maintenance, 2. Routine Maintenance and, 3. Predictive Maintenance	03
(b) What is Ferrography?	04
(c) Explain the factors involved in the effective planning of maintenance work.	07
OR	
Q.3 (a) Explain Equipment Downtime Analysis	03
(b) Explain the considerations for “design for maintainability” in details.	04
(c) Explain the assembly of Ball and Roller bearing.	07
Q.4 (a) Write short note on Design Out Maintenance.	03
(b) Explain Off-site Emergency Plan in brief.	04
(c) State the main objectives of preventive maintenance and explain the preventive maintenance in details.	07
OR	
Q.4 (a) Define following in terms of maintenance: (1) Planning and, (2) Scheduling.	03
(b) Explain CPM with its advantages & limitations	04
(c) Explain the ‘Vibration monitoring’ in detail.	07
Q.5 (a) What are the causes of an accident?	03
(b) What are the safety rules need to be follow inside your college workshop?	04
(c) Explain the different type of safety training conducted in any organization.	07
OR	
Q.5 (a) What is job safety analysis (JSA), Write down its objectives?	03
(b) Explain the main objectives of good plant layout.	04
(c) Enlist the personal protective equipments with their functions.	07
