

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023****Subject Code:3162010****Date:07-12-2023****Subject Name:Industrial Maintenance and Safety****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) Explain the industrial hazards involved in press working process.	03
	(b) Explain failure data analysis and failure rate curve.	04
	(c) Classify different types of maintenance strategies and explain the breakdown and corrective maintenance with suitable examples.	07
Q.2	(a) How is the planning and scheduling of maintenance job done?	03
	(b) Explain replacement in anticipation of failure.	04
	(c) Enlist and Explain different maintenance strategies	07
	OR	
	(c) Explain Total Productive Maintenance in detail with its essential components.	07
Q.3	(a) Define	03
	1. Reliability	
	2. Availability	
	3. Maintainability	
	(b) State examples of Retrofitting	04
	(c) Explain the concept of 'Reliability centered maintenance' in detail.	07
	OR	
Q.3	(a) What is 'decision tree'?	03
	(b) Differentiate between short term and long term maintenance planning.	04
	(c) Explain Mechanical and electrical hazards types, causes and preventive steps/procedure	07
Q.4	(a) What are the functions of lubrication?	03
	(b) Explain classification of engineering industry - different process in engineering industry	04
	(c) Explain the different phases of failure rate curve (Bath tub curve) Substantiate your answer with the help of a diagram.	07
	OR	
Q.4	(a) What is preventive maintenance down time (PMDT)?	03
	(b) Explain the possible losses (of cost) in industry if safety is not followed	04
	(c) Explain any two sections of Factories Act, 1948.	07
Q.5	(a) What is Total productive maintenance (TPM)?	03
	(b) What measures will you take for good house/workshop keeping?	04
	(c) Explain replacement planning and decision.	07

OR

- Q.5** (a) What are the occupational diseases due to chemical gases? **03**
(b) Explain the industrial hazards involved in machining process. **04**
(c) Explain Care and maintenance of common elements used in material **07**
Handling equipment like rope chains slings, hooks, clamps,
Occupational diseases due to physical and chemical agents.
