

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:3171507

Date:07-12-2024

Subject Name: Industrial Maintenance and Safety 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.

	MARKS
Q.1 (a) Discuss the scope of maintenance in industry.	03
(b) State the objectives of the maintenance department.	04
(c) How safety engineering is related to design of any equipment?	07
Q.2 (a) What are the causes of an accident?	03
(b) Discuss various types of safety measures.	04
(c) Write note on: Safety education and training program and its importance.	07
OR	
(c) What is equipment availability and what are the three basic approaches to define and quantity availability.	07
Q.3 (a) What is meant by maintenance planning?	03
(b) Write about wear debris analysis.	04
(c) Explain various methods of recovery and increasing service life of equipments.	07
OR	
Q.3 (a) What is meant by predictive maintenance?	03
(b) What is TPM? State its benefits.	04
(c) Describe about various steps involved in Failure Mode and Effect Analysis (FMEA).	07
Q.4 (a) What is the use of lubrication?	03
(b) Mention the reasons for preventive maintenance to be adopted in the present times.	04
(c) Explain design for reliability in detail.	07
OR	
Q.4 (a) What are the advantages of condition monitoring?	03
(b) Distinguish between preventive maintenance and breakdown maintenance.	04
(c) Explain with neat sketch about fault tree analysis.	07
Q.5 (a) List the various pillars of TPM.	03
(b) Briefly describe about Hazard and Operability Study.	04
(c) How accidents are recorded, reported and investigated?	07
OR	
Q.5 (a) What is meant by Job Safety Analysis?	03
(b) Briefly describe about Condition based maintenance.	04
(c) What is 'decision tree'? Explain fault tracing with the help of it or any specified problem.	07
