

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026

Subject Code: 3162509

Date: 26/05/2026

Subject Name: Plant 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.**

- Q.1** (a) Define defect and failure. **03**
(b) What is FMEA? State its purpose. **04**
(c) Enlist the types of maintenance systems. Explain any one of them with an example. **07**
- Q.2** (a) Define preventive maintenance. **03**
(b) Write the differences between breakdown and preventive maintenance. **04**
(c) Explain condition based maintenance with its advantages. **07**
- OR**
- Q.2** (c) Explain predictive maintenance with its advantages. **07**
- Q.3** (a) Define maintenance planning. **03**
(b) What is job scheduling? **04**
(c) Explain short term and long term maintenance planning. **07**
- OR**
- Q.3** (a) Define maintenance scheduling. **03**
(b) What is job sequencing? **04**
(c) Explain maintenance planning process. **07**
- Q.4** (a) Define safety engineering. **03**
(b) Write importance of Safety policy. **04**
(c) Explain Job safety analysis (JSA) in steps. **07**
- OR**
- Q.4** (a) Define safety audit. **03**
(b) Write types of safety audit. **04**
(c) Explain safety audit procedure. **07**
- Q.5** (a) Define Total Productive Maintenance (TPM). **03**
(b) Write advantages of TPM. **04**
(c) Explain steps of TPM implementation. **07**
- OR**
- Q.5** (a) Define Reliability based maintenance (RBM). **03**

(b) Write importance of reliability.

04

(c) Explain Computer Managed Maintenance System (CMMS).

07
