

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER– VI EXAMINATION – SUMMER 2026

Subject Code:3162010

Date:26-05-2026

Subject Name:Industrial Maintenance and Safety

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

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|------------|-----|---|-----------|
| Q.1 | (a) | Define Reliability and write the basic needs of reliability | 03 |
| | (b) | Discuss causes of accidents in industrial plant | 04 |
| | (c) | What are the different types of maintenance strategies used in industrial settings, and how do they impact equipment reliability and overall production efficiency? | 07 |
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| Q.2 | (a) | State the types and reasons of wear in machines. | 03 |
| | (b) | List out different hazard model & explain any one in brief? | 04 |
| | (c) | Explain Breakdown analysis template by taking an example of any company | 07 |
| OR | | | |
| | (c) | Explain failure rate curve in brief? | 07 |
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| Q.3 | (a) | Give the difference between individual and group replacement. | 03 |
| | (b) | How vibration can be identified in a Machine? | 04 |
| | (c) | What is fault tree analysis? Apply it for a car accident and suggest detail analysis. | 07 |
| OR | | | |
| Q.3 | (a) | What is condition base maintenance system? | 03 |
| | (b) | Differentiate between planned maintenance and unplanned maintenance. | 04 |
| | (c) | Describe briefly about the safety training | 07 |
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| Q.4 | (a) | Discuss the parameter when Occupational diseases due to physical and chemical agents occur. | 03 |
| | (b) | Enlist the steps of accident and dangerous occurrence reporting | 04 |
| | (c) | Enlist the factors involved in effective planning of maintenance work. | 07 |
| OR | | | |
| Q.4 | (a) | Give the steps to find out accident investigation. | 03 |
| | (b) | Explain short term and long term maintenance plans. | 04 |
| | (c) | How can you take care & maintenance of rope chain slings & hooks? | 07 |
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| Q.5 | (a) | Give the safety criteria in welding cutting and finishing of any equipment. | 03 |
| | (b) | Explain fire prevention methods | 04 |
| | (c) | Explain maintainability, availability and reliability in brief | 07 |
| OR | | | |
| Q.5 | (a) | Give the difference between reconditioning and retrofitting. | 03 |
| | (b) | Enlist the steps of accident and dangerous occurrence reporting. | 04 |
| | (c) | Explain in brief the salient points of Factories act 1948 for health and safety | 07 |
