

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018****Subject Code:2161505****Date:08/05/2018****Subject Name:Maintenance & Safety Engg****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.

- Q.1** (a) Define the term 'maintenance'. Bring out its scope. **03**  
(b) What are the main objectives of maintenance department? **04**  
(c) How Safety Engineering helps in improving productivity of an organization? -Discuss. **07**
- Q.2** (a) What is maintainability? **03**  
(b) Discuss the need and importance of maintainability. **04**  
(c) How Safety Engineering is related to design of any equipment? **07**
- OR**
- (c) Explain with neat sketches maintenance and repair of shafts and spindles. **07**
- Q.3** (a) What is 'decision tree'? **03**  
(b) Discuss any one method used for preventing equipments from corrosion. **04**  
(c) Discuss VEIN analysis and its importance in maintenance management. **07**
- OR**
- Q.3** (a) What is preventive maintenance down time (PMDT)? **03**  
(b) Differentiate between preventive and breakdown maintenance. **04**  
(c) Explain the elements of planned preventive maintenance program. **07**
- Q.4** (a) What is Total productive maintenance (TPM)? **03**  
(b) How will you decide about the replacement of an equipment? **04**  
(c) List out various assumptions in MAPI method and explain the procedure of MAPI method with the help of any example. **07**
- OR**
- Q.4** (a) What are the components of maintenance cost? **03**  
(b) Explain how overall maintenance cost can be reduced. **04**  
(c) Discuss the important pillars for the successful implementation of TPM program. **07**
- Q.5** (a) What are the causes of an accident? **03**  
(b) Explain the steps of safety procedure. **04**  
(c) Explain the industrial hazards involved in machining and casting. **07**
- OR**
- Q.5** (a) What measures will you take for good house/workshop keeping? **03**  
(b) How accidents are recorded and investigated? **04**  
(c) Discuss safety rules for the foundry work and welding operation. **07**

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