

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER–VIII • Remedial EXAMINATION – WINTER 2013****Subject Code: 181905****Date: 12/09/2013****Subject Name: Industrial Safety and Maintenance Engineering****Time: 03:00 pm – 05:30 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) What is fire triangle? Explain the different classes of fire with symbols and extinguishers used for them. Draw any four symbols for possible fire hazards you have seen. **07**

(b) What is fault tree analysis and Root cause analysis? Explain in detail. **07**

Q.2 (a) What is personal protective equipment? Explain different PPE used for different purpose and an importance of PPE. **07**

(b) Explain the different types of industrial accidents and general steps to be taken for preventing the accidents in any industry. Also explain the procedure for accident reporting. **07**

OR

(b) State the types of hazards and explain any three in detail with possible causes and remedial actions. **07**

Q.3 (a) Highlight the characteristics of factory act and explain employee's safety provisions to be made in factory. **07**

(b) What is workman's compensation act and explain main features of the same? Also narrate the possible reasons for which compensation may not be given to employee. **07**

OR

Q.3 (a) Explain the possible steps and measures to be taken by factory management and Government with respect to industrial safety. **07**

(b) Write a note on OSHA and its features in detail. **07**

Q.4 (a) Define : (i) Reliability (ii) Machine Availability (iii) Equipment Life Cycle (iv) Mean Time Between Failure (v) Maintainability (vi) Mean Time Down (vii) Mean Time To Repair. **07**

(b) What is planned maintenance? State objective and principles of planned maintenance. Also enlist the advantages of sound maintenance systems. **07**

OR

Q.4 (a) Define failure with respect to machine and enlist the methods of failure analysis. Also explain FMEA method. **07**

(b) Mention the types of maintenance and explain features and merits-demerits of preventive maintenance and predictive maintenance. **07**

Q.5 (a) What is total productive maintenance? Explain its main features and benefits of TPM. **07**

(b) Explain lubrication and leakage monitoring in detail. Also enlist the advantages of the same. **07**

OR

Q.5 (a) What is conditioning monitoring? Enlist the different techniques used for condition monitoring. Explain vibration monitoring in detail. **07**

(b) Explain condition based maintenance and risk based maintenance in detail **07**
