

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

00123

Term-End Examination

June, 2018

BME-030 : SAFETY ENGINEERING

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **five** questions. All questions carry equal marks.*

1. A pressure vessel manufacturing company records the following in a year : Number of injuries — 5. Number of employees that received treatment in a hospital — 2 for 2 days each. Number of employees that received first aid and did not work for 4 hours — 3. The factory worked for 50 weeks during the year. Number of employees — 40. Calculate total number of available hours for work, injury incidence rate, rate of cases in which work days were lost, rate of cases in which work hours were lost, work hour lost rate.

14

2. (a) Describe various work-related operations that attract safety precautions. 7
- (b) Which conditions cause hearing loss and what precautions are suggested to avoid hearing loss ? 7
3. (a) Explain the importance of safety in an organization. List down various benefits of safety awareness programmes. 4
- (b) What is safety training ? Discuss the role of a trainer and attributes of a safety trainer. 4
- (b) Describe pollutants of air and discuss greenhouse effect. 6
4. (a) What is TLV ? How can you detect a disagreeable environment ? 7
- (b) What are audit functions ? What are the guidelines to plan an audit of safety in an industry ? 7
5. (a) Describe the Bhopal gas disaster. What are the causes and after-effects of the Bhopal gas disaster ? 10
- (b) Write the steps or guidelines which must be followed during welding process in any industry. 4

6. (a) What do you mean by First Aid ? What are the contents in a first aid box ? 7
- (b) What is a Safety Committee and who are its members ? How do safety committees help in promoting safety ? 7

7. Write short notes on the following (any *four*) : $4 \times 3 \frac{1}{2} = 14$

- (a) Disaster
- (b) Near Miss
- (c) Flash Point and Fire Point
- (d) Types of Wastes
- (e) Vermicomposting
- (g) COD and BOD
- (h) Recycling and Reuse
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