

00304

**BACHELOR OF TECHNOLOGY IN
MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

June, 2011

BME-030 : SAFETY ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions.

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1. (a) Describe theories that explain occurrence of accidents in industrial environment. 6
(b) What kind of injuries result from an accident ? 4
2. (a) A construction site record following in a year during which work was done for 48 weeks. 6
Number of injury - 5
Number of employees that received treatment in hospital for 2 days - 3
Number of employees that received first aid at site and did not work for 4 hrs - 2
Number of employees - 50

Calculate number for which work was done, the rate of injury incidence, rate of cases in which work hours and work days were lost, total number of work hour lost as % of total hrs.

- (b) What role is envisaged for government in respect of health of industrial workers ? 4
3. (a) What are the principles of gas detection in industrial environment ? 6
- (b) What is audit in respect of safety and health ? 4
4. (a) What is the role of UNO in maintaining health of environment ? 5
- (b) Describe the effect of carbon monoxide, sulphur dioxide nitrous oxide on human health. 5
5. (a) What are different types of wastes ? Identify the sources of wastes. 7
- (b) Describe the processes of Biomethanation. 3
6. What is landfilling ? What considerations are made in site selection for landfilling ? Give a schematic through landfill cross - section. 10

7. (a) Distinguish between incinerations in rotary kiln and on flat surface hearths. 5
- (b) Describe 5
- (i) waste dumping at sea
- (ii) underground disposal of waste
- (iii) deep well disposal of waste.
8. (a) What is recycling and why it is done ? 5
- (b) Describe a typical process of recycling of paper. 5
9. (a) What is safety training ? What are the attributes of a safety trainer ? 5
- (b) Does a relationship exist between illiteracy and safety ? Describe different types of illiteracy emphasizing upon functional illiteracy. 5
10. (a) What is air quality ? Define exceedance factor (EF). Correlate EF with critical, high, moderate and low air pollution. 5
- (b) Compare the natural and anthropogenic sources of pollution of environment. 5
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