

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

Term-End Examination

December, 2016

BME-030 : SAFETY ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. All questions carry equal marks.

1. (a) What is occupational safety ? Describe the reasons for risks to the safety and health of a worker in the workplace. 5
- (b) Describe the role of protective gears for personnel and guards for equipment and machines in controlling injuries. 5

2. (a) Explain (i) ergonomic traps, and (ii) a system failure. How do these factors influence the occurrence of accidents ? 5
- (b) Analyse the costs due to injury to worker or due to damage to equipment and property. 5

3. (a) What is meant by environmental pollution ? Describe the pollutants of air and also discuss greenhouse effect. 5
- (b) What are the soil pollutants and their effects ? Describe the pollutants of water and how they enter into water. 5
4. (a) Define an industrial environment and distinguish it from general meteorological conditions. 5
- (b) What are audit functions ? What are the guidelines to plan an audit of safety in an industry ? 5
5. (a) Describe the provisions of the Factories Act, 1948. 5
- (b) What is ISO 14000 series ? Describe its components and the documents included. 5
6. (a) What are the different sources of wastes ? How are solid wastes disposed off ? 5
- (b) Describe bio-methanation process and its applications. 5
7. (a) What are the different types of plastics that are used commercially ? What are the different products in plastic which are discarded as wastes ? 5
- (b) Describe plastic recovery and discuss its viability. 5

8. (a) What is understood by household hazardous waste (HHW) ? Give examples of HHW. 5
- (b) Describe medical wastes and problems caused by it. What are the different methods of treating medical wastes and its final disposal ? 5
9. (a) What is meant by monitoring ? How can monitoring of machines and processes be used for avoiding hazards ? 5
- (b) What is the role of first aid in responding to emergency ? Describe the contents of a first aid kit. 5
10. (a) What is a disaster ? Describe briefly the after-effects of disasters such as earthquakes, floods and cyclones. 5
- (b) What are the different principles involved in Disaster Management ? 5
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