

00127

**BACHELOR OF TECHNOLOGY IN
MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)
Term-End Examination
June, 2013**

BME-030 : SAFETY ENGINEERING

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any five questions.*

1. (a) Make a list of operations performed by industrial worker that require safety. What are the benefits of practicing safety programme ? 7
- (b) Describe factors that can affect the health of a worker in a work place. 7
2. (a) Describe injuries based on type of accidents. 5
- (b) Discuss any three theories of accident causation. 9
3. (a) Distinguish between industrial and natural environment. What is artificial environment ? 8

- (b) How will you detect the presence of following in the atmosphere ? 6
- (i) SO_2 , HCl and CO
 - (ii) CO_2 and CH_4
 - (iii) Oxides of N_2 and F
4. (a) Bring out the distinguishing features of (i) domestic solid waste (ii) municipal solid waste and (iii) industrial solid waste. What health hazards are associated with these wastes ? 10
- (b) How is solid waste managed ? 4
5. (a) Describe the advantages and disadvantages associated with solid waste burning ? Describe the working of an incinerator. 8
- (b) How are the exhaust gases from incinerator cleaned ? Describe baghouse filter. 6
6. (a) What is composting ? Describe aerobic microbial composting and vermicomposting. What are the advantages of composting ? 7
- (b) The water released from industrial process is not allowed to mix with general stream. What is/are reasons (s) ? Taking example of electroplating process describe what contaminants will pollute water. 7

7. (a) Define COD, BOD and pH of water. 6
- (b) What is hazardous waste ? What are indications of hazardous nature of waste ? Mention at least 10 substances whose presence in the waste make it hazardous. 8
8. (a) Can hazardous wastes be generated in homes ? What are the characteristic indicators that will define if domestic waste is hazardous ? What steps can be taken in safe disposal of hazardous domestic waste ? 7
- (b) What is medical waste ? What methods are commonly used for disposing off medical waste ? Describe incineration of medical wastes and common waste treatment facility. 7
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