

National Exams December 2008
98-Ind-B10 - Industrial Safety and Health
3 hours duration

Notes:

1. If doubt exists as to the interpretation of any question, the candidate is urged to submit with the answer paper, a clear statement of any assumptions made.
2. This is a Closed Book exam. No calculators are allowed for this exam.
3. Any five questions constitute a complete paper. Only the first five questions as they appear in your answer book will be marked.
4. All questions are of equal value.
5. Write your answers in point-form whenever possible, but fully.

Front Page

Marking Scheme (marks)

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|----|--------|---------|---------|
| 1. | (i) 7, | (ii) 7, | (iii) 6 |
| 2. | (i) 6, | (ii) 7, | (iii) 7 |
| 3. | (i) 7, | (ii) 6, | (iii) 7 |
| 4. | (i) 7, | (ii) 7, | (iii) 6 |
| 5. | (i) 7, | (ii) 6, | (iii) 7 |
| 6. | (i) 7, | (ii) 6, | (iii) 7 |
| 7. | (i) 6, | (ii) 8 | (iii) 6 |

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1.
 - (i) State the basic objectives of the Occupational Health and Safety Act (OHSA).
 - (ii) Explain the concept of “system safety” in the context of accident investigation.
 - (iii) What are back-out and recovery as they apply to accident prevention?

2.
 - (i) State the objectives of fault-free analysis (FTA).
 - (ii) State the elements of a Process Safety Management Program.
 - (iii) What are the application of FTA (fault-free analysis) methodology?

3.
 - (i) Define physical hazards. Name some of the physical hazards.
 - (ii) What are some of the common chemical hazards?
 - (iii) What is your understanding of the criterion for permit-required confined space?

4.
 - (i) What are toxic substances and their effects on the human body?
 - (ii) How are the toxic agents detected? Name the broad categories of application of respiratory protective equipment.
 - (iii) What is hypoxia? What are the effects of hypoxia on people?

5.
 - (i) State the rules that should be followed for proper use of the respiratory protective equipment.
 - (ii) State the major types of respiratory protective equipment.
 - (iii) What are the typical or normal hazardous operations in industry that require respiratory equipment and protective clothing?

6.
 - (i) Give some examples of hazard elimination and accident avoidance.
 - (ii) Explain the means by which hazard levels may be limited.
 - (iii) Explain your understanding of initiating and contributing hazards resulting in injury and damage of a pressurized steel tank.

7. An employee in a foundry was using an overhead wall-mounted electrically controlled crane to move a heavy casting from one position to another at his workstation. The casting weighed approximately 3,000 pounds. While he was moving the casting, it fell, causing the hoist cables to snap and strike the employee a glancing blow to his head. Fortunately, he was wearing protective head gear, or the blow could have been fatal when the hoist eyebolt assembly failed.
 - (i) Determine the causes of the accident.
 - (ii) State the corrective actions required.
 - (iii) Suggest the follow-up action required.