

INDUSTRIAL SAFETY AND HAZARD MANAGEMENT

FINAL EXAMINATION

INSTRUCTION TO STUDENTS: ATTEMPT ALL THE QUESTIONS

1. What is the expression of the impact and possibility of a mishap in terms of potential mishap severity and probability of occurrence? (5 Marks)
 - a. Hazard
 - b. Risk
 - c. Mishap
 - d. Safety

2. What is an unplanned event or series of events resulting in death, injury, occupational illness, damage to or loss of equipment and/ or property to the environment called? (5 Marks)
 - a. Hazard
 - b. Risk
 - c. Mishap
 - d. Accident

3. In PSC concept, secondary failure of components is due to? (10 Marks)
 - a. Excessive stresses
 - b. Human error
 - c. Inadvertent control signals
 - d. Wear and tear

4. In fault tree analysis, what do gate symbols describe? (10 Marks)
 - a. System level failure
 - b. Component level failure

- c. Sub-component level failure
 - d. Connection between event symbols according to their casual relation
5. In fault tree analysis, what is conditional event denoted by? (10 Marks)
- a. Circle
 - b. Rectangle
 - c. Diamond
 - d. Oval
6. In bowtie analysis, what is a top event of a fault tree referred to? (10 Marks)
- a. Basic event
 - b. Pivotal event
 - c. Central event
 - d. Accident scenario
7. If device 1 fails because of the external events or internal failures of device 2, what is the dependency between both devices called? (10 Marks)
- a. Common unit coupling
 - b. Proximity coupling
 - c. Functional coupling
 - d. Human coupling
8. What is a subset of dependent events in which two or more components fault state exists at the same time or for a short time called? (10 Marks)
- a. Dependent failure
 - b. Independent failure
 - c. Common cause failure

d. Common cause cut-sets

9. What are the three elements for hazard triangle? (10 Marks)

a. Hazard, risk, target/ threat

b. Hazardous element, risk, initiating mechanism

c. Hazardous element, initiating mechanism, target/ threat

d. Hazard, mishap, initiating mechanism

10. **PART A.** What can weakness of risk control system be attributed as (5 Marks)

a. Leading indicator

b. Lagging indicator

c. Preventive risk control system

d. Mitigating risk control system

PART B. What can health risk control system be attributed as (5 Marks)

a. Leading indicator

b. Lagging indicator

c. Preventive risk control system

d. Mitigating risk control system

11. Risk related to the population that may be affected by hazardous incidents in a region is termed as? (5 Marks)

a. Individual risk

b. Societal risk

c. Entropy risk

d. Residual risk

12. The risk associated with system degradation is known as? (5 Marks)

- a. Individual risk
- b. Societal risk
- c. Entropy risk
- d. Residual risk

END OF EXAM!!