

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B Tech FSE  
Subject (Course): Principles of Safety Management  
Course Code : FSEG 232  
No. of page/s: 2

Semester – III  
Max. Marks : 100  
Duration : 3 Hrs

### Section A

Answer all the questions:

5 \* 4 = 20 Marks

1. Differentiate Accident and Incident with examples
2. Differentiate Unsafe act and Unsafe condition with examples
3. What is the significance of Henrich's triangle in accident prevention?
4. Outline various lagging and leading indicators used in measuring safety performance
5. What do you understand by Safe System of Work?

### Section B

Answer all the questions:

5 \* 8 = 40 Marks

6. Illustrate the different steps of 5S approach
7. Explain the purpose, methodology and benefits of Job Safety Analysis
8. What is hierarchy of risk control? Discuss hierarchy of risk control using suitable examples
9. Describe the requirements of interview process that would help to obtain best quality information from witness regarding a workplace accident
10. Number of employees worked in Avnet Industries for the year 2016 is given below. Total working days during the year was 300 and average working hours for any employee was 8 hours. It is also reported that 1500 hours of overtime works were performed during the year.

Time period- 2016	Morning Shift	Night Shift
January to April	1000	1000
May to August	2000	1000
September to December	1000	2000

The following are the injury statistics of the company for the year 2016

- a) Number of fatalities - 3
- b) Number of reportable accidents – 7
- c) Number of lost time accidents - 15
- d) Number of first Aid injuries- 20

Calculate reportable accident and lost time injury frequency rates and incidence rates for the year 2016

**Section C**

**Answer both the questions:**

**2 \*20 = 40 Marks**

11. A forklift skidded on an oil spill causing serious injury to a visitor
- a. You immediately reached the accident spot, explain how you are going to respond to this accident (8)
  - b. Explain why this accident should be investigated (4)
  - c. What are the different evidences that you will scrutinize to identify the root cause of this accident? (8)
12. a. Define confined space. What are the differences between permit required and permit not required confined space? (3+5)
- b. What are the potential hazards in a confined space and how these hazards can be effectively managed? (12)



Note: - Pl. start your question paper from next page

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B Tech FSE  
Subject (Course): Principles of Safety Management  
Course Code : FSEG 232  
No. of page/s: 2

Semester – III  
Max. Marks : 100  
Duration : 3 Hrs

### Section A

Answer all the questions:

5 \* 4 = 20 Marks

1. Differentiate Reportable and non-Reportable Accident with examples
2. Differentiate Safety audit and Inspection
3. Discuss on any two root cause analysis techniques
4. How the safety performance of an organization can be measured?
5. Write short note on safety pyramids

### Section B

Answer all the questions:

5 \* 8 = 40 Marks

6. Briefly explain different theories on accident causation.
7. Discuss the significance and requirements of safety policy.
8. What is work permit system and explain the requirements as per SIOD 105
9. What are the hazards of confined space and how these can be controlled?
10. What are the duties of safety officer?

### Section C

Answer both the questions:

2 \* 20 = 40 Marks

11. *A research laboratory of three stories and a total floor space of 10,000 square meters houses activities requiring the use of flammable and unstable chemicals with supporting storage space. You are the ESH Manager on site. Early one afternoon you hear a loud explosion coming from a ground floor laboratory where two chemists apparently had*

*been working. A fire was underway and was about to escape from the room where the explosion had occurred.*

Make all necessary assumptions and list in order the steps that would be best taken in a complete response to this incident.

12. What is meant by hierarchy of control? How hierarchy of control can be used to control noise exposure. Discuss with suitable examples.