



**UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA**  
**SECOND SEMESTER EXAMINATIONS, MAY 2018**

**COURSE NO:** PE 372  
**COURSE NAME:** Environmental Management, Health and Safety

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Name: \_\_\_\_\_ Index \_\_\_\_\_ Number: \_\_\_\_\_

**ANSWER ANY FOUR QUESTIONS**

**QUESTION 1**

a. List the **two (2) major** impacts of high osmotic pressure produced by soluble salts on plants or seeds.

**[4 marks]**

b. Onshore discharges of waste may include land spreading and land farming. Differentiate between land spreading and land farming and outline **two (2)** major problems that will limit the future application of these disposal methods.

**[8 marks]**

c. Enumerate **two (2)** limitations of using distillation/pyrolysis to remove hydrocarbon from solid.

**[4 marks]**

d. The first and the most important step in minimising waste is to minimise the amount and/or toxicity of the waste that must be handled. State **three (3) practical ways** of achieving the said objective(s).

**[6 marks]**

e. Outline the most important indicators of the state of health and safety of an organisation.

**[3 marks]**

**QUESTION 2**

a. Explain the meaning of the following terms in relation to noise control:

**[8 marks]**

- i. Silencing
- ii. Absorption
- iii. Damping
- iv. Isolation

- b. Outline **three (3)** control measures that could be used to reduce the risk of infection from biological organisms.  
[6 marks]
- c. In relation to Work-Related Upper Limb Disorders (WRULDs):
- (i) Identify **four (4)** typical symptoms that might be experienced by affected individuals.  
[4 marks]
- (ii) Outline **three (3)** factors that would increase the risk of developing WRULDs.  
[3 marks]
- d. In-situ burning of hydrocarbon is associated with a lot of problems. Discuss briefly **two (2)** problems associated with in-situ burning of hydrocarbon-  
[4 marks]

### QUESTION 3

- a. Discuss briefly the following terms: 25  
marks
- i. Ergonomics
  - ii. Permit to Work (PTW)
  - iii. Bioremediation
  - iv. Lockout-tagout
  - v. Stressors

### QUESTION 4

- a. What is oil spill? Discuss briefly **two (2)** effects of oil spillage.  
[8 marks]
- b. Naturally occurring radioactive materials (NORM) generated at production sites must also be safely disposed of in ways to prevent unnecessary human exposure to nuclear radiation. State **three (3)** effective ways of disposing NORM.  
[6 marks]
- c. What First Aid Treatment and its purpose during oil well drilling operations?  
[4 marks]
- d. In relation to hazards in oil and gas industry:
- i. Outline the **two (2)** broad categories of hazards.  
[2 marks]
  - ii. Identify **three (3)** hazards associated with the preparation of drilling fluids.  
[3 marks]
  - iii. List **two (2)** control measures that should be put in place during fluid preparation.  
[2 marks]

**QUESTION 5**

- a. Most occupational accidents can be attributed in part to human error. Outline **three (3)** ways of reducing the likelihood of human error in the workplace.

**[6 marks]**

- b. Discuss briefly **three (three) major safety** techniques (measures) that must be adopted to prevent the occurrence of well blowout.

**[9 marks]**

- c. List the **two (2)** most effective ways of preventing fires and explosions at oil and gas facilities.

**[4 marks]**

- d. Wherever possible, risks are eliminated through selection and design of facilities, equipment and processes. However, if risks cannot be eliminated, they must be minimized. Discuss briefly **two (2)** ways of minimising risks.

**[6 marks]**

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