

**UNIVERSITY OF SWAZILAND**  
Faculty of Health Sciences

Department of Environmental Health Science

Final Examination  
2011/2012

Title of paper: Industrial Hygiene and Aspect of Plant Operation II

Course code: EHS 563

Time allowed: 2 hours

Marks allocation: 100 Marks

Instructions:

- 1) Read the questions and instructions carefully
- 2) Answer any 4 questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly

This paper is not to be opened until the invigilator has granted permission

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**Answer any 4 questions****Question 1**

In relation to radiation, explain the following:

- i. Sievert [2 Marks]
- ii. Non-stochastic effect and Stochastic effect [4 Marks]
- iii. Shielding [2 Marks]
- iv. Film badge [2 Marks]
- v. Ionizing radiation [4 Marks]
- vi. Non ionizing radiation [4 Marks]
- vii. What measure would you recommend to reduce the exposure of a worker who uses a source of x-rays at work? [3 Marks]
- viii. Two types of radiation exposures [4 Marks]

**Question 2**

- a) Define hazardous noise [1 Mark]
- b) What are the health and safety effects of noise at the workplace? [4 Marks]
- c) As a safety officer explain the components and how you would implement a Hearing Conservation Programme (HCP) [20 Marks]

**Question 3**

- a) Define vibration [2 Marks]
- b) What increases the health risk of those exposed to vibration at the workplace? [8 Marks]
- c) What health symptoms will workers who are suffering from vibration present? [10 Marks]
- d) Explain prevention measures that can be taken to reduce vibration effects to workers. [5 Marks]

**Question 4**

As a safety officer of the JJ Bank Ltd Branch A, you notice that the types of extinguishers provided in the building were not necessarily the needed types that are for the activities of a bank.

Alert management on the:

- a) Type(s) of fires the company might have [5 Marks]
- b) Extinguishers that the **company ought to have**, explain their advantages [8 Marks]
- c) Preventive measures to be put in place [6 Marks]
- d) Reactive measures to be put in place in case of fire out break [6 Marks]

**Question 5**

In relation to light explain the following:

- a) Define light and types of light [5 Marks]
- b) Difference between **luminance** and **illuminance** [4 Marks]
- c) Measures to be taken that will ensure health and safety of workers in an office environment [10 Marks]
- d) Effects of **high** and **low** light intensity on the human eye [6 Marks]