



**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Science**

**Department of Environmental Health  
Sciences**

**Final Examination 2007**

TITLE OF PAPER : INDUSTRIAL HYGIENE ASPECT OF PLANT  
OPERATION

COURSE CODE : EHS 531

DURATION : 3 HOURS

MARKS : 100

INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS  
CAREFULLY

: ANSWER ANY FIVE QUESTIONS

: EACH QUESTION CARRIES 20 MARKS

: NO PAPER SHOULD BE BROUGHT INTO NOR OUT  
OF THE EXAMINATION ROOM

: BEGIN EACH QUESTION ON A SEPARATE SHEET  
OF PAPER

DO NOT OPEN THE QUESTION PAPER UNTIL PERMISSION HAS BEEN  
GRANTED BY THE INVIGILATOR.

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Answer 5 questions

**Question 1**

- a) Explain the hazards associated with machines and plants in an industry. [4 Marks]
- b) Outline the different types of control measures that can be put in place in order to protect workers from machine hazards [8 Marks]
- c) Within the context of Occupational Safety and Health Act 2001 what is an accident and how is it reported. [8 Marks]

**Question 2**

a) In relation to radiation, explain the meaning of any four (4) of the following terms:

- i. Sievert
- ii. Non-stochastic effect
- iii. Shielding
- iv. Film badge
- v. Ionizing radiation
- vi. Non ionizing radiation
- vii. Stochastic effect

[12 Marks]

b) What are the health effects of radiation and how can workers be protected from exposure?

[8 Marks]

**Question 3**

a) In relation to electricity

- i. How does electricity get to the house
- ii. What are the hazards of electricity

[5 Marks]

[5 Marks]

b) In relation to light:

- i. How does light affect the human eye [5 Marks]
- ii. As a safety officer what can you do the workstations to reduce light effects? [5 Marks]

**Question 4**

Taking the case of Mbabane campus (refectory and hostels):

- (a) What type(s) of fire can the activities at the campus result into? [5 Marks]
- (b) Explain how each in (a) can be controlled and prevented [15 Marks]

**Question 5**

- a) As a safety officer how can you ensure that workers are protected from hearing impairment activities [10 Marks]
- b) Vibration can cause serious damage to tissues and organs,
  - i. What is vibration? [5 Marks]
  - ii. What increases the risk to the worker? [5 Marks]

**Question 6**

Agriculture is an industry with hazards that can be fatal and can also lead to disabilities:

- a) What hazardous activities are involved in agriculture [10 Marks]
- b) Handling of animals has dangers, explain the hazards of handling animals [10 Marks]