

UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DIPLOMA ENVIRONMENTAL HEALTH SCIENCES
FINAL EXAMINATION PAPER 2005

TITLE OF PAPER : ENVIRONMENTAL AND OCCUPATIONAL HEALTH
COURSE CODE : EHS 302
DURATION : 2 HOURS
MARKS : 100

INSTRUCTIONS :

- : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- : ANSWER ONLY **FOUR** QUESTIONS
- : EACH QUESTION CARRIES 20 MARKS.
- : WRITE NEATLY & CLEARLY
- : NO PAPER SHOULD BE BROUGHT INTO OR OUT OF THE EXAMINATION ROOM.
- : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

Question 1.

- i) What are the components of a workplace health and safety risk management? (11 marks)
- ii) What are the components of the Day Light Factor (3 marks)
- iii) A required illumination level in a small factory room 12m x 8m is 500Lux. The lamps are incandescent lamps each with an output of 7500Lumens. The coefficient of utilization is 0.6 and the maintenance factor is 0.9. Calculate the number of lamps required. (5 marks)
- iv) Clearly explain how you would determine the moisture content or humidity when undertaking environmental measurement (4 marks)
- v) Give any two (2) examples of ionising radiation (2 marks)

Question 2.

- a) In the workplace machinery can either produce mechanical or non-mechanical dangers not only to the operatives but also to the people nearby. Briefly discuss this statement. Your answer should site at least four (4) examples of mechanical dangers and at least ten (10) examples of non-mechanical dangers. (15marks)
- b) Critically examine the types of injuries that can be inflicted by an unguarded abrasive wheel in the workplace (5marks)
- c) Name five (5) types of machine guards that are used in the workplace. (5marks)

Question 3.

- a) Define the following and indicate their importance in occupational hygiene.
 - Ceiling (C)
 - IDLH
 - PEL
 - TWA
 - TLV(15marks)
- b) What is a material safety data sheet? List 10 items covered on the typical MSDS. (10marks)

Question 4.

- A. What is the difference between dry and wet deposition **(6 marks)**
 - B. What are the reactions that make the ozone layer and Using CFC's as an example, give a detailed description of the reactions that brake the ozone layer **(15 marks)**
 - C. Which gases are known as the main greenhouse gases **(4 marks)**
- (Total = 25marks)**

Question 5.

- A. With regard to air pollution, discuss the following:
 - i) Atmospheric inversion (5 marks)
 - ii) Radiation inversion (5 marks)
 - iii) Subsidence inversion (5 marks)
 - iv) The mixing depth (5 marks)

B. What are the health effects of:-

- i) Asbestos (3 marks)
- ii) Coal dust (2 marks)