



UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE

BSc DEGREE IN ENVIRONMENTAL HEALTH SCIENCES

MAIN EXAMINATION, MAY, 2018

TITLE OF PAPER : HEALTH RISK MANAGEMENT

COURSE CODE : EHM 312

TIME : 2HOURS

TOTAL MARKS : 100

INSTRUCTIONS:

- 1. QUESTION 1 IS COMPULSORY**
- 2. ANSWER ANY OTHER THREE QUESTIONS**
- 3. ALL QUESTIONS ARE WORTH 25 MARKS EACH**
- 4. BEGIN THE ANSWER TO EACH QUESTION IN A SEPARATE SHEET OF PAPER.**

DO NO OPEN THIS EXAMINATION PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

QUESTION 1

- I. Multiple choices: Write True or False against each letter corresponding to the following statements as they apply to risk assessment.**
- a. Proper sampling strategies must be adopted to decide which groups of workers, which plant locations and which shifts should not be monitored
 - b. Mining can also present a range of chemical hazards such as noise, vibration, radiation, heat stress, humidity and changes in atmospheric pressure.
 - c. Occupational health management is about improving workplace conditions and eliminating illness and disability related to work.
 - d. The reduction or elimination of workplace risk, disease and disability mainly depends on the factors where risk is managed at operational level.
 - e. Welding fume consists of mixtures of airborne gases and fine particles which if inhaled or swallowed may not result in risks to health.
 - f. Monitoring or "Sampling" means the use of valid and suitable occupational hygiene techniques to derive a quantitative estimate of the exposure of employees to substances hazardous to health.
 - g. Hygiene standards or occupational exposure limits (OELs) are useful measures with which exposures to chemical and physical agents in the workplace environment can be compared.
 - h. Biological monitoring is the measurement and assessment of hazardous substances or their metabolites in tissues, excreta or expired air in exposed workers.
 - i. Control measures include combinations of mechanical engineering and operational/procedural systems aimed at preventing or minimising exposures.
 - j. The risk assessment process ensures that factors influencing health are fully understood and adequately quantified so that decisions are taken inconsistently and in a cost-effective manner.
 - k. Exposure prevention is the principal aim of any control strategy, particularly when handling hazardous agents, capable of producing serious irreversible health effects.

(22 marks)

- II.** Name three factors that the risk of developing silicosis depends on. **(3 marks)**

QUESTION 2

- a. Differentiate between hazard and risk. **(3 marks)**
- b. Describe types of filters used in sampling air-borne pollutants. **(5 marks)**
- c. Describe Biological Monitoring and Biological Guidance Values **(12 marks)**
- d. Describe risk assessment under the following headings:
 - i. Definition of a risk assessment **(2 marks)**
 - ii. Importance of risk assessment **(3 marks)**

QUESTION 3

- a) In the following table of industrial processes, hazards and types of LEV , fill in the blank spaces

Industrial process	Nature of hazardous substance	Type of local exhaust ventilation (LEV)
Welding		
Paint spraying		
Polishing		
Shot blasting		

(8 marks)

- b) Describe risk management. **(12 marks)**
- c) How is a risk assessment carried out? **(5 marks)**

QUESTION 4

- a) Describe four characteristics of successful emission and exposure controls **(6 marks)**
- b) Describe the elements of an effective occupation health management policy. **(6 marks)**
- c) Describe the purpose of an occupational health assessment **(10 marks)**
- d) Describe risk communication **(3 marks)**

QUESTION 5

Describe risk assessment under the following headings:

- i. Define the extent of the assessment **(4 marks)**

- ii. Gather information **(12 marks)**

- iii. Assess the risks **(9 marks)**