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 : EHS 332

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.**

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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)