

EHS 439 DECEMBER, 2019 FINAL EXAMINATION



UNIVERSITY OF ESWATINI
Faculty of Health Sciences
Department of Environmental Health Science

**BACHELOR OF SCIENCE IN ENVIRONMENTAL
MANAGEMENT AND OCCUPATIONAL HEALTH**

EHS 439 DECEMBER, 2019 FINAL EXAMINATION PAPER

TITLE OF PAPER : SAFETY MANAGEMENT IN MINES
COURSE CODE : EHS 439
DURATION : 2 HOURS
MARKS : 100

INSTRUCTIONS

- 1. Read the questions & instructions carefully**
- 2. Then answer ANY FOUR (4) questions**
- 3. Each question is weighted 25 marks**
- 4. Write neatly and clearly**
- 5. Begin each question in a separate sheet of paper**
- 6. Numbering within a chosen question should be in a sequential order**
- 7. BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.**

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

QUESTION 1

- a) What are the functions and duties of the standby team during a mine rescue mission? (8)
- b) Outline the important duties of the colliery officials (12)
- c) Why is the establishment of surface control important in a mine? (4)
- d) What are the spectrum of lung diseases that are caused by coal mine dust called? (1).

MARKS: 25

QUESTION 2

- a) How should the fresh air base be located in a mine? (12)
- b) Write short notes on the Internal Responsibility System (IRS) (3)
- c) During an accident it is said that the investigator should, "Freeze the Accident Scene". What is the connotation of this statement? (4).
- d) Under evacuation procedures, which group(s) of people are classified as special needs personnel? (6)

MARKS: 25

QUESTION 3

- a. What are the responsibilities of a mine worker? (8)
- b. What are the basic hazards that may be encountered in a surface mine? (5)
- c. How can mine workers be protected from excessive noise in the mine? (5)
- d. List the signs and symptoms of heat disorders. (5)
- e. Under what circumstances would one wear the following type of personal protection (2)
 - i. Safety helmet.
 - ii. Hearing protection.

MARKS: 25

QUESTION 4

- a) Coal mine ventilation is primarily concerned with controlling key components that safe-guard the health of the workers. Name these components (10)
- b) Outline the purpose of underground mine ventilation (8)
- c) What is a rock strata gas? (6)
- d) Name the single factor that makes smoke add an extra element of difficulty in any rescue or recovery operation (1)

MARKS: 25

QUESTION 5

- a) In answering the following question make a table to address the following, how to detect, when to test and meaning of findings of the following gases:
 - i. Oxygen (6),
 - ii. Carbon Dioxide (7).
- b) What makes CO toxic compared to other gases? (1)
- c) How should one protect mines and equipment in an underground coal mine? (4).
- d) After coal excavation has been done, how should the environment be brought to its original position? (3)
- e) Define the following terms, gob and stowing (4)

MARKS: 25