



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

BACHELOR OF SCIENCE IN ENVIRONMENTAL
MANAGEMENT AND OCCUPATIONAL HEALTH

2020 AUGUST FINAL EXAMINATION

TITLE OF PAPER : FUNDAMENTALS OF INDUSTRIAL HYGIENE
COURSE CODE : EHM 436
DURATION : 2 HOURS
MARKS : 100

INSTRUCTIONS

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

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

QUESTION 1

The following scientists have each made enormous contribution to the field of industrial hygiene. For each scientist indicate the contributions made (25).

- a) Hippocrates
- b) Paracelsus
- c) Ramazzin
- d) Stenhouse
- e) Haldane
- f) Hamilton

QUESTION 2

- a) Differentiate between PEL, TLV, PEL and OEL (12)
- b) Sherwood and Greenhalgh documented some milestone in the 1960s towards workers' health. Briefly outline these innovations (10).
- c) List any 3 of the tenets of industrial hygiene (3).

QUESTION 3

- a) In order for one to be considered a risk worker, what attributes should this type of worker have? (4).
- b) Define exposure and give its linkages to a contaminant (6).
- c) According to the United States OSH Act (1970), what are the functions of the employer? (4).
- d) Outline the key focus of industrial hygiene (6).
- e) What features should the employer put in place in order to fulfill his legal obligation under anticipation/recognition? (4).
- f) What is an adsorbent (1).

QUESTION 4

- a) Enumerate the key engineering controls that may be applied in any industrial operation and briefly explain how will each render the workplace safe to work under (14).
- b) Why is the administrative control criticized over the engineering control? (3).
- c) How can occupational diseases be avoided in the workplace? (5).
- d) Define personal sampling (3).

QUESTION 5

- a) For each of the following give the occupational diseases thereof; (3)
 - i. Acute reactions
 - ii. Gradual reactions
 - iii. Delayed reactions
- b) If one wants to control stressors in the workplace, it is advised that a walk-through survey is the best practice. What is your take on this submission? (8).
- c) If a safety officer wants to take samples in the workplace which areas should he target and why? (4).
- d) Discuss the parameters that should be considered in choosing an instrument for data analysis from the scenario in c) above (10).