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

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

**MAY 2019 FINAL EXAMINATION**

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**TITLE OF PAPER : FUNDAMENTALS OF INDUSTRIAL HYGIENE**  
**COURSE CODE : EHM 428**  
**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. Numbering within a chosen question should be in a sequential order**
- 6. 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) How is a positive fit test carried out and what are its limitations? (8)
- b) SCBAs have these features in them, PASS and ADSU. What are they for? (3)
- c) Briefly discuss the issues that should be taken into account under health surveillance medical confidentiality (10)
- d) What are the fundamental differences between the qualitative and quantitative fit tests? (4)

**QUESTION 2**

- a) Chronologically describe how a quantitative fit test is carried out, EXCLUDING the exercises that are supposed to be carried out by the subject (10)
- b) Compare and contrast between Self Contained Breathing Apparatus and Supplied Air Ventilators (15)

**QUESTION 3**

- a) What is the time lapse that can force fire rescuers to manually rescue one of their own? (4)
- b) List the agricultural situations that would require SAR. (3)
- c) Name 5 types of quarter mask and state what they indicate. (5)
- d) Define filter efficiency. (1)
- e) What do the following letters used in respirators labelling mean? N, R, P. (6)
- f) What would be the three (3) components that one will need in order to quantify exposure to a pollutant? (6)

**QUESTION 4**

- a) Outline the current guidance to what workers may be exposed to under excursions. (6)
- b) What type of work environments would be depicted by the following? (6)
  - i. Oxygen enriched
  - ii. Oxygen deficient
  - iii. Confined space
- c) What is the function of the following? (6)
  - i. Escape only respirator
  - ii. Positive pressure respirator
  - iii. User seal check
- d) Define a fit test. (3)
- e) List the possible sources of health hazards produced by heat in the workplace. (4)

**QUESTION 5**

- a) Outline the responsibility of an OHS officer regarding an IDLH atmosphere (10)
- b) Discuss with relevant examples what needs to be considered in selecting air cleaning devices (10)
- c) Write short notes on exposure (5)