



**UNIVERSITY OF SWAZILAND**

**Faculty of Health Science**

**Department of Environmental Health Sciences**

**Main Examination 2012**

---

**Title of paper: AIR SAMPLING AND ANALYSIS II**

**Course code: EHS 565**

**Time allowed: 2 HOURS**

**Marks allocation: 100 Marks**

**Instructions:**

- 1) Answer ANY FOUR (4) questions**
- 2) Each question is weighted 25 marks**
- 3) Write neatly and clearly**
- 4) Begin each question in a separate sheet of paper**

**This paper is not to be opened until the invigilator has granted permission**

## **QUESTION 1**

- a) Workers in confined spaces ordinarily face a challenge with oxygen deficiency; the employer then has to carry out oxygen enrichment, discuss what oxygen enrichment is and its inherent dangers? (8)**
- b) Working in confined spaces pose some health and safety risks, briefly explain the dangers that may be attributed to confined spaces to a worker who has not been issued with an Respiratory Protective Equipment (RPE) (6)**
- c) Briefly discuss the wearer – related factors that might need the attention of management in the selection and utilization of RPE (6)**
- d) Define what an Assigned Factor is (5)**

## **QUESTION 2**

- a) Under what conditions can RPE be said to be adequate? (6)**
- b) Name the critical routes of entry of contaminants into which the human body is exposed and the possible health effects that might be caused by these pollutants in the body (8)**
- c) List the types of employees who might not be able to utilize RPE yet their occupation may require them to do so (6)**
- d) You were making a presentation to your peers when suddenly one of them asks you about Effective Protection Factors, how will you answer him? (5)**

## **QUESTION 3**

- a) Define the following as they relate to RPE (10)**
  - i. CE – marking**
  - ii. Breathing apparatus**
  - iii. Respirator (filtering device)**
  - iv. Reasonably practicable measures**
  - v. Controlled area**

- b) Name the 5 laws governing the use of RPE under the auspices of the Health and Safety Executive mandate (10)**
- c) Your newly established company has just engaged you to be their RPE officer and they suggest that you provide RPE straight way because they have seen their neighbouring workers having donned theirs. Would you agree with this statement and why? (5)**

#### **QUESTION 4**

- a) When implementing Health and Safety measures which include the selection and use of RPE, which are the 2 critical stakeholders to be consulted? (4)**
- b) What 4 attributes can warrant RPE to be said that it is "suitable" (8)**
- c) Mention 6 justifiable conditions under which RPE can be used (12)**
- d) What input does one need in order to calculate a hazard ratio? (1)**

#### **QUESTION 5**

- a) A RPE selector form has different steps to be followed. Name the very salient data that has to be collected in step 1 (9)**
- b) Critical data that should be reflected in step 5 is very key in order for one to make an informed decision, what is this information that should be captured? (6)**
- c) Briefly discuss the reason for fit testing (6)**
- d) Compare and contrast the following tests, qualitative and quantitative fit testing types (4)**