



UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

Department of Environmental Health Science

May 2015 Main Examination

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 on a separate sheet of paper**

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

QUESTION 1

- a) What advantage is conferred by the size and mass of bio-hazardous droplets to the worker? (4)
- b) What makes inhalable infectious particles present a potential respiratory hazard to the worker? (4)
- c) Under what conditions can one prefer to use a mouth – bit and nose respirator as opposed to the other types of respirators (6)
- d) If a worker is able to detect a substance by smell, what does this suggest about the Respiratory Protective Equipment (RPE)? (6)
- e) Outline key points that need to be considered in confidentiality (5)

QUESTION 2

- 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) Briefly discuss the dangers of working in confined spaces for a worker who does not have 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 an Assigned Protection Factor. (5)

QUESTION 3

- a) What are the conditions under which RPE be deemed adequate? (6)
- b) Name the critical routes of entry of contaminants into the human body and the possible health effects that might be caused by these pollutants (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 respond? (5)

QUESTION 4

- 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) A 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)
- c) When can one disclose a workers' confidential information to other parties? (4)
- d) Name the 3 key parts found in a flow of standard medical surveillance programme (6)

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. (4)