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ll-h.c. dushar
17/11/08*



UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Final Examination 2008/2009

Title of paper: Air Sampling and Analysis I

Course code: EHS 564

Time allowed: 2 hours

Marks allocation: 100 Marks

Instructions:

- 1) Read the questions and instructions carefully
- 2) Answer Four questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly

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

Answer any four (4) questions

Question 1

- a) What are the 4 factors for determining the selection of an air cleaning device
[12 Marks]
- b) Explain the 3 groups of devices that are used in cleaning air
[9 Marks]
- c) State the difference between absorption and adsorption
[4 Marks]

Question 2

In company X, as a safety officer you are to conduct air sampling for the factory. Discuss in details the six (6) components you will include in your strategy for sampling.

[25 Marks]

Question 3

- a) What is a respirator?
[2 Marks]
- b) Explain the three types of respirators
[15 Marks]
- c) Explain four (4) testing methods that can be used to test the functioning of a respirator
[8 Marks]

Question 4

- a) Airborne contaminants can enter the body in three main routes; explain these three (3) routes. Give an example in each route.
[9 Marks]
- b) Explain how the body naturally defends itself from toxic substances that are ingested
[4 Marks]
- c) Explain how the different particles sizes are deposited in the respiratory tract of a human being.
[12 Marks]

Question 5

a) Explain in details 10 components of a material safety data sheet (MSDS) [10 Marks]

b) Define the nature and five (5) types of airborne contaminants [15 Marks]