

**UNIVERSITY OF SWAZILAND
FACULTY OF HEALTH SCIENCES**

**BACHELOR'S DEGREE IN ENVIRONMENTAL
HEALTH SCIENCES**

MAIN EXAMINATION PAPER DEC 2013

TITLE OF PAPER : ON SITE SANITATION

COURSE CODE : EHM 202

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS :

- : ANSWER ANY FOUR QUESTIONS
- : EACH QUESTION CARRIES 25 MARKS
- : NO PAPER SHOULD BE BROUGHT IN OR OUT OF THE EXAMINATION ROOM
- : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

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

QUESTION ONE

- a) You have been employed by the Ministry of Health, Environmental Health Department, and assigned to work in a remote rural area looking after sanitation issues. Your supervisor requires regular reports giving account on the state of affairs per homestead in order to know whether sanitation systems are functioning well or not. What would be the contents of your report? [14]
- b) In two to three paragraphs discuss why there is need for non sewerred sanitation technology for housing and small institutional buildings. [6]
- c) Distinguish between culinary, soil and ablution facilities. [5]

QUESTION TWO

- a) Define the following terms: [5]
 - i. Sanitation,
 - ii. Excreta,
 - iii. Sewage,
 - iv. Health,
 - v. Debilitation.
- b) Discuss six critical factors that come to play in the transmission of diseases from excreta. For each factor give at least one example and use graphics to clarify certain points in your answer [15]
- c) Using the concept breaking the 4F cycle explain how to go about intercepting the transmission of faecal-borne diseases [5]

QUESTION THREE

- a) Explain the link between human excreta and the nitrogen cycle. [10]
- b) There is both direct and indirect relationship between excreta disposal and the health of a population. As an Environmental Health Officer you are asked to share your thoughts on the indirect effects associated with excreta disposal during the International Trade Fare. What would be the contents of your presentation? [10]
- c) Summarize hazards associated with the use of bucket latrines [5]

QUESTION FOUR

- a) Consider the following factors that a country may use in order to choose a particular sanitation method. Write few notes explaining how each can influence choice of sanitation systems: [12]
- i. Capital and operation cost.
 - ii. Custom and culture pattern.
 - iii. Local material available.
 - iv. Availability of water.
 - v. Type of soil and water table.
 - vi. Existing local authority regulations.
- b) Explain the process of community involvement in the construction of excreta disposal facilities in Swaziland [6]
- c) Which is better between a VIP latrine and an ordinary Pit latrine? Discuss in terms of the following: [7]
- i. constructional components
 - ii. operation
 - iii. advantages and disadvantages
 - iv. Precautions to be taken

QUESTION FIVE

- a) When does the need for constructing foundation arise in an ordinary drainage construction project? [5]
- b) Several principles of drain construction exist. Choose five and discuss fully. [10]
- c) Explain why drain ventilation is important. [6]
- d) Describe the two types of drain testing methods [4]