

**UNIVERSITY OF SWAZILAND  
FACULTY OF HEALTH SCIENCES**

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

**SUPPLEMENTARY EXAMINATION PAPER  
JULY 2014**

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**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 INTO  
NOR 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) Define the following terms: [10]
- i. Latrine.
  - ii. Sanitation.
  - iii. Sewage.
  - iv. Sewerage.
  - v. Sullage.
- b) Describe the ECOSAN latrine in terms of its importance, construction, advantages and disadvantages. [15]

### QUESTION TWO

- a) Discuss how Wagner and Lainnox Methodology can be used to evaluate rural sanitation systems. [10]
- b) Is there a link between health, nuisance and excreta disposal? Explain. [9]
- c) Mention the three disadvantages associated with the use of concrete pipes in a drainage system. [6]

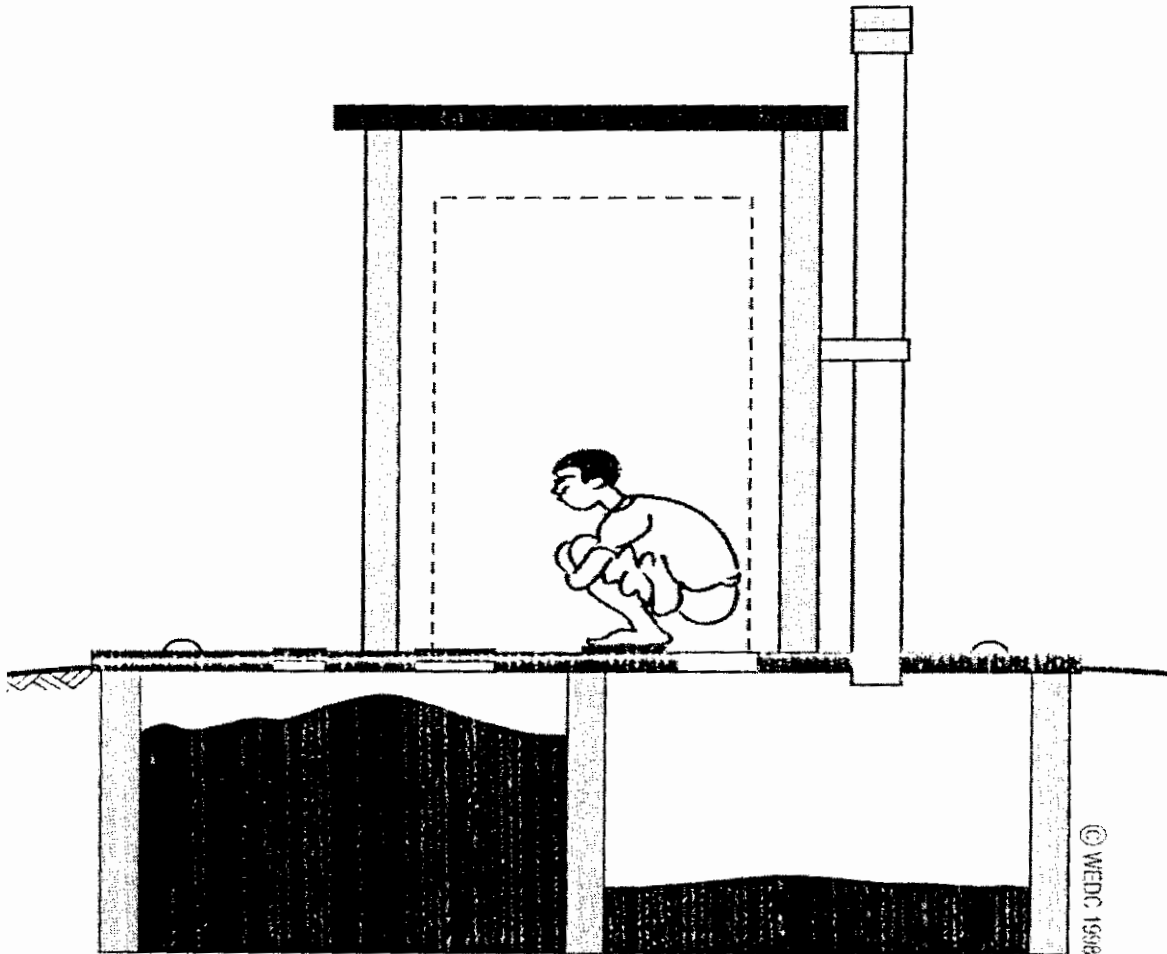
### QUESTION THREE

- a) Why are Septic Tanks classified under the non sewered systems of sanitation? Describe the design and the biological processes involved in septic tanks [25]

### QUESTION FOUR

- a) Contrast the Enviro Loo toilets with the Compost toilet in terms of the following: [20]
- i. Constructional components
  - ii. Operation and maintenance

- iii. Advantages and disadvantages
- iv. Precautions to be taken
- b) With regards to domestic houses, springs, wells and rivers, state the standard location parameters for privy systems of excreta disposal. [4]
- c) Look carefully at the diagram below. With reference to the types of excreta disposal methods what does it represent? [1]



#### QUESTION FIVE

- a) For excreta to transmit diseases four factors are necessary. Describe these factors. [10]
- b) Sketch out, label and write few notes related to the ECOSAN Dry toilet [15]