

**UNIVERSITY OF SWAZILAND
FACULTY OF HEALTH SCIENCES**

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

MAIN EXAMINATION PAPER DEC 2014

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**

EHM 202 MAIN PAPER DECEMBER 2014

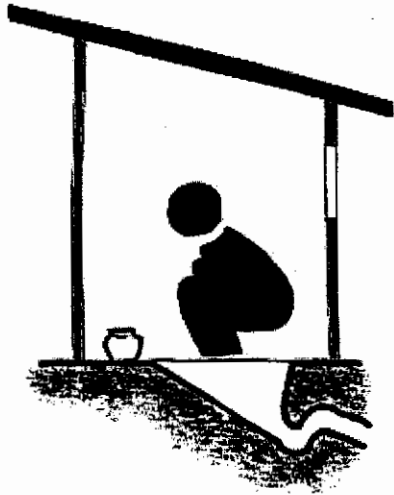
QUESTION ONE

- 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 asks you to do all in your power to break “the 4F cycle in excreta”. How will you convince that the ‘4F cycle is indeed broken? [10]
- b) Give five reasons why excreta disposal is considered a public health issue? [5]
- c) Outline the process in the decomposition of excreta and discuss briefly explaining how knowledge of this process helps in the design of sanitary systems in general [5]
- d) Why is a ‘flying toilet’ considered an unsafe method of excreta disposal [5]

QUESTION TWO

- a) Sketch out the VIP as a type of sanitation system and discuss the system in terms of structural requirements, location, nuisance, shortcomings and advantages. [15]
- b) Define the following terms: [5]
 - i. sanitation,
 - ii. excreta,
 - iii. sewage,
 - iv. nuisance,
 - v. debility.
- c) Excreta Disposal Methods can basically be classified into two. Explain? [2]

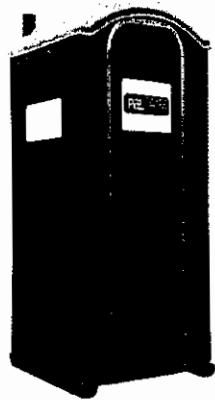
d) The following represents a type of sanitation method.



What is the name of this method and how does the system prevent odours and flies from being a nuisance? [3]

QUESTION THREE

- a) 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 [12]
- b) The following is a chemical toilet.



Discuss

- i. its utility and main features, [3]
 - ii. Why it is considered an “in between type” of system? [3]
 - iii. what goes into its operation and maintenance. [3]
- c) Summarize hazards associated with the use of bucket latrines [4]

QUESTION FOUR

- a) 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 Fair. What would be the contents of your presentation? [10]
- b) Describe the features of the ECOSAN Waterless Dry Sanitation Toilet. Is it a safe excreta disposal method? If so why? [15]

QUESTION FIVE

- a) Health awareness and understanding which, in turn, lead to environmental and behavioural improvements is very critical in sanitation. Discuss the relevance of PHAST in this endeavour. [13]
- b) In the next page you will find a graphic design of a septic tank showing its component parts. You must then answer the following questions:
- i. What are the functions of each component part? [6]
 - ii. Describe primary and secondary treatment in a septic tank. [6]

Treatment processes in a septic tank

