



**QUESTION ONE**

- a) Describe the ECOSAN Waterless Dry Sanitation Toilet in terms of its importance, construction, advantages and disadvantages. **[15]**
- b) Which do you prefer between the Enviro Loo and the ECOSAN Waterless Dry Sanitation Toilets? Give five valid reasons. **[10]**

**QUESTION TWO**

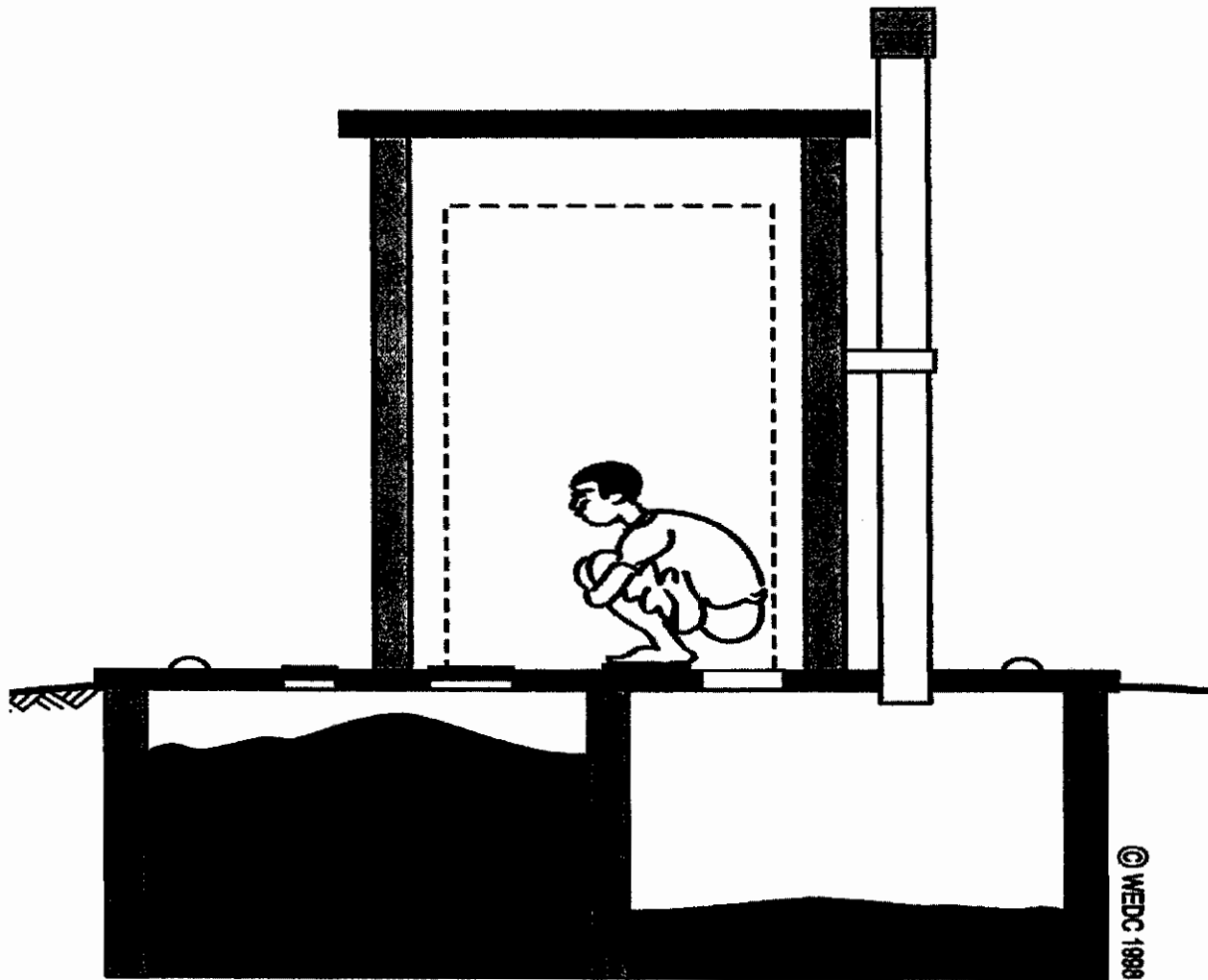
- a) What are the seven requirements for a properly functioning excreta disposal system as proposed by Wagner and Lainox? **[7]**
- b) Explain the linkage between health, nuisance and excreta disposal. **[9]**
- c) Outline the processes in the decomposition of excreta and briefly discuss how this helps in the design of sanitation systems **[6]**
- d) Drain inspection is an important principle in drainage pipes. Differentiate between rodding eye, inspection chambers and a manhole **[3]**

**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 **[13]**
- b) Consider the following factors that a country may use in order to choose a particular sanitation method. Write short 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.

**QUESTION FOUR**

- a) With regards to domestic houses, springs, wells and rivers, state the standard location parameters for privy systems of excreta disposal. [4]
- b) Examine the diagram below and identify the system with reference to the type of excreta disposal method. [1]



- c) What would be the main points of discussion when giving a talk on the septic tank care and maintenance? [11]
- d) Define Sanitation [2]
- e) Describe the seven steps to community planning for the prevention of diarrhoeal disease as given in the PHAST methodology [7]

**QUESTION FIVE**

- a) What are the four factors that influence the transmission of diseases by the excreta? [4]
  - b) Explain at least eight principles of drain construction that must be fulfilled at all cost [16]
  - c) Give the three weaknesses of concrete as a drain pipe material [3]
  - d) Give three types of drainage pipe joints and their relative materials [2]
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