

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR BACHELOR OF SCIENCE IN
PUBLIC HEALTH**

PUHE 271 CONSERVANCY AND DRAINAGE

STREAMS: Y2S2

TIME: 2 HOURS

DAY/DATE :

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INSTRUCTIONS:

1. Do not write anything on the question paper.
2. Mobile phones and any other reference materials are NOT allowed in the examination room.
3. The paper has three sections. Answer ALL questions in Sections I and II and ONE question in section III.
4. All your answers for Section I (MCQs) should be on one page.
5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.
6. Write your answers legibly and use your time wisely

SECTION ONE (Answer ALL QUESTIONS)

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1. An aquaprivy is similar to a _____
 - A. Sanplat
 - B. VIP latrine
 - C. Soak pit
 - D. Septic tank
2. The sewers should be laid _____
 - A. Below the building
 - B. Side of the building
 - C. Within the building
 - D. Across the building
3. What is the other name for the plug valve?
 - A. Needle valve
 - B. Slim valve
 - C. Poppet valve
 - D. Spool valve
4. What are the masonry chambers constructed at suitable intervals along sewer lines called?

- A. Traps
 - B. Ventilators
 - C. Manhole
 - D. Sewer
5. Which of the following is not correct regarding conservancy system?
- A. High maintenance cost
 - B. Highly unhygienic system
 - C. Independent of labour
 - D. Chances of epidemic
6. The heavy particles in the septic tank _____
- A. Float
 - B. Sink into the bottom
 - C. Separated using magnetic methods
 - D. Flow along liquid
7. What are the product gases of anaerobic digestion?
- A. Carbon-dioxide and methane
 - B. Methane and oxygen
 - C. Oxygen and carbon-dioxide
 - D. Nitrogen and methane
8. Which of the following related to the aerobic organic matter is true?
- A. Essential nutrients for growth
 - B. Development of sludge deposits
 - C. Growth of undesirable aquatic life
 - D. Development of septic conditions
9. What is night soil?
- A. Soil containing urea
 - B. Human excreta
 - C. Animal excreta
 - D. Human excreta, animal excreta and urea
10. _____ is a method where water is used as a medium for the flow of sewage from its production of the treatment unit.
- A. Conservancy system
 - B. Biological digestion
 - C. Incineration
 - D. Water carriage system
11. The optimum temperature for bacterial activity is in what range?
- A. 25-35 degree Celsius
 - B. 50 degree Celsius
 - C. 20 degree Celsius
 - D. 40 degree Celsius
12. Which is the correct statement regarding per capita demand?
- A. Daily water required by an individual
 - B. Water required for various purposes by a person
 - C. Water required by an individual in a year
 - D. Annual average amount of daily water required by one person
13. Energy may be recovered from sludge as _____
- A. Hydrogen gas
 - B. Methane gas

- C Air
D Liquid petroleum gas
14. Which sewer carries both sewage and storm water?
A. Outfall sewer
B. Separate sewer
C. Main sewer
D. Combined sewer
15. Which of these is not true regarding reuse of treated sewage and sludge?
A. Reduces costs of abstracting irrigation water
B. Reduces demand on valuable water resources
C. Increases pollution
D. Promotes better use of water resources
16. The multiplication of _____ is encouraged by the addition of oxygen.
A Bacteria
B Aerobic bacteria
C Anaerobic bacteria
D Fungi
17. The relatively clean wastewater from baths, sinks, washing machines and other kitchen appliances is called _____
A. Grey water
B. Black water
C. Yellow water
D. Wastewater
18. A structure that allows water to flow under a road, railroad, trail, or similar obstruction from one side to the other side is called as _____
A Drainage
B Bridges
C Tunnel
D Culverts
19. Which system of collection of sewage is a dry system?
A. Conservancy system
B. Biological digestion
C. Incineration
D. Water carriage system
20. _____ is an aerobic process of mixing sewage sludge with agricultural by-product sources.
A Aerobic digestion
B Anaerobic digestion
C Composting
D Incineration

(20 Marks)

SECTION TWO (Answer ALL QUESTIONS)

- List five types of conservancy systems in rural areas in Africa.
(5 marks)
- Discuss five factors one should consider when selecting a method for disposing excreta.

(5 marks)

3. List five Kenyan laws related to conservancy and sanitation.

(5 marks)

4. Explain the rungs of the sanitation ladder.

(4 marks)

5. Elucidate five disadvantages of a septic tank.

(5 marks)

6. Differentiate between the Arboloo and Forssa Alterna

(6 marks)

(30 marks)

SECTION THREE (Answer ONLY ONE QUESTION)

1. Ecological sanitation plays a very important role in human waste management. Discuss ten benefits of ecological sanitation.

(20 marks)

2. As the newly appointed Public Health Officer of Uhai County, you have been tasked to talk to the community about ventilated improved (VIP) latrines. Include in your talk

a) Importance of VIP latrines

(5 marks)

(5 marks)

b) Using a well labeled diagram explain the five important components of VIP latrines.

(15 marks)