



NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi- Abuja.
Faculty of Health Sciences
Department of Environmental Health Science
2021_1 EXAMINATION

Course Code: EHS 419

Course Title: SANITARY ENGINEERING

Course Unit: 2 Credit Units.

Time Allowed: 1 ½ Hours.

Total Score: 70 Marks.

Instruction: Answer All Questions.

Question 1.

In summary, Sanitary Engineering promotes the application of engineering principles and methods to solve sanitation problems of communities. Resourcefulness and innovation are characteristics inculcated in both Engineers and Environmental Health Officers. At present, Nigeria is pursuing a program to attain open defecation free status by 2025.

- a. Is it possible for Nigeria to attain open defecation free status by 2025? Give reasons to support the proposition that Nigeria will attain open defecation free status by year 2025. (10 marks).
- b. Assuming a cheap prototype pit latrine is being designed for a rural poor community which will require that all materials be sourced from the neighbourhood without purchasing anything, such that an indigent widow can afford to own such latrine. What possible local materials can you suggest to achieve the following requirement of a sanitary latrine? (20 marks).

- i. Privacy.
- ii. Floor.
- iii. Orifice with cover.
- iv. Odour nuisance control.
- v. Fly nuisance control.

Question 2.

Any mention of the term “hazardous waste” invokes fear and apprehension in the minds of Nigerians.

- a. What distinguishes “hazardous waste” from other wastes? Give at least one example in each case (10 marks).
- b. What advantages does Deep Well Injection offer in the disposal of hazardous wastes? (10 marks).

Question 3.

The study and understanding of water is so important in Sanitary Engineering.

- a. Give the chemical and physical properties of water that are of special interest to Sanitary Engineering (10 marks).
- b. The earth’s water resources recycle and maintain itself in a hydrological cycle. List the water reservoirs; the processes; and the life entities involved in the hydrological cycle. (10 marks).