



NATIONAL OPEN UNIVERSITY OF NIGERIA...
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE
2020_2 EXAMINATION

Course Code: EHS419

Course Title: Sanitary Engineering

Course Units: 2 Credit Units

Time Allowed: 2 Hours

Total Score: 70 Marks

Instructions: Answer all the questions

Question 1:

- (a) It is often said that there are two sides to a coin, meaning that anything that has merits has demerits, also. Storm water run-off is a threat by the flooding and erosion it causes. In what ways can sanitary engineers utilize storm water as an asset? **(10 marks)**
- (b) Ventilated improved pit latrine, as the name suggests, should give better service than the ordinary pit latrine.
 - (i) List all the components of a VIP latrine. **(10 marks)**
 - (ii) Mention two (2) sanitary advantages that the VIP latrine confers? **(5 marks)**
- (c) Mention any five (5) challenges that the WC latrine system face in Nigeria **(5 marks)**.

Question 2:

- (a) Owing to rapidly increasing population, many Nigerian towns and communities can be said to be rapidly urbanizing. Identify any five (5) environmental threats arising from urbanization in Nigeria. **(10 marks)**
- (b) An environmental health officer must be wary of the fact that as modern society deploy and consume advanced technology, hazardous wastes must result.
 - (i) Mention the four (4) characteristics distinguishing hazardous wastes. **(8 marks)**
 - (ii) Give one (1) example of a hazardous waste under each characteristic mentioned above. **(2 marks)**

Question 3:

- (a) Potable water is an important every-day need of all. State the major stages or processes in a conventional public water treatment plant. **(10 marks).**
- (b) Assume you are the Environmental Health Officer in charge of an urban district with a large industrial layout. Supposing you receive a report that “toxic waste” was found within the precinct of the industrial layout. State five (5) methods of toxic/hazardous waste disposal that you may consider adopting. **(10 marks).**