



**National Open University of Nigeria**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**Faculty of Sciences**  
**SEPTEMBER, 2020\_1 EXAMINATIONS**

**COURSE CODE:** ESM322

**COURSE TITLE:** Water and Waste Water Management

**CREDIT:** 2 Units

**TIME ALLOWED:** 2 Hours

**Instruction:** Attempt question number ONE (1) and any other THREE (3) questions. Question number one (1) is compulsory and carries 25 marks, while the other questions carry equal marks (15) each

- 1a) Define the following
- i. Freshwater **(1 mark)**
  - ii. On-site disposal and wastewater treatment system **(1 mark)**
  - iii. Portable water **(3 marks)**
  - iv. Waste water **(2 marks)**
- 1b) Mention six (6) sources of freshwater **(3marks)**
- 1c) Discuss the potential risk of human activities on freshwater. **(5 marks)**
- 1d) In a tabular form, outline the different levels and objectives of water treatment. **(10marks)**

**QUESTION 2 (15 marks)**

- 2a) How does temperature affect chemical and physical properties of a water body? **(3 marks)**
- 2b) Discuss the effects of contaminated water on man. **(12marks)**

**QUESTION 3 (15 marks)**

- 3) Highlight the causes and types of freshwater pollution. **(15marks)**

**Question 4 (15 marks)**

- 4a) List any six (6) of the processes that leads to water pollution. **(3 marks)**
- 4b). Discuss the effects caused by any 3 of the processes that leads to water pollution. **(12 marks)**

**Question 5 (15 marks)**

- 5a) Highlight the objectives of water treatment. **(5 marks)**
- 5b) Write short notes on water treatment processes. **(10 marks)**