



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SCIENCES
DEPARTMENT OF ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT
Plot 91, Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
2025_2 EXAMINATIONS

COURSE CODE: ESM 423

COURSE TITLE: Hydrology and Water Resources

CREDIT: 2 Units

TIME ALLOWED: 2½ Hours

Instruction: Attempt question number ONE (1) and any other TWO (2) questions. Question number one (1) carries 30 marks, while the other questions carry 20 marks each.

- QUESTION 1** a. Mention four (4) features that characterized civilization during the early stage of the development of hydrology.
b. State the contributions of Bernard Palissy to the development of hydrology.
c. State the reasons why water is regarded as a universal solvent.
d. Explain the structure of a water molecule.
e. Account for the factors that affect the input, output, and transport of water in a drainage basin.

- QUESTION 2** a. State the challenges of water resources development in Nigeria.
b. Explain the occurrence of surface water pollution.
c. Using adequate examples, explain point and nonpoint sources of water pollution.

- QUESTION 3** a. Explain infiltration in relation to precipitation.
b. List the factors that affect the rate of water infiltration into the ground.
c. List the factors that contribute to shortage of runoff in the dryland.

- QUESTION 4** a. Discuss the contribution of running water to surface erosion.
b. Discuss the contribution of wind to dryland erosion.
c. List four (4) measures of soil erosion control.

- QUESTION 5** a. Explain the term sediment yield,
b. Explain the occurrence of sediment deposition.
c. State the impacts of eroded sediment on the environment.