



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
APRIL, 2019 EXAMINATIONS

COURSE CODE: ESM 423

COURSE TITLE: Hydrology and Water Resources.

CREDIT: 2 Units

TIME ALLOWED: 2 Hours

Instruction: Attempt question number ONE (1) and any other THREE (3) questions.

1. Explain the influence of the following on the rate of rain water infiltration into the ground:
 - a. Vegetation covers **(6marks).**
 - b. Soil surface condition **(6marks).**
 - c. Rainfall intensity **(6marks).**
 - d. Soil moisture condition **(7marks).**
2. Discuss flooding as an environmental hazard under the following headings:
 - a. Causes **(5marks).**
 - b. Effects **(5marks).**
 - c. Control measures **(5marks).**
3.
 - a. Define the term Water Pollution **(3marks).**
 - b. List and explain any five (5) sources of water pollution **(7marks).**
 - c. Suggest appropriate solutions to the problems mentioned in “b” above **(5marks).**
4.
 - a. Describe the process of groundwater formation **(5marks).**
 - b. List the typology of aquifer **(10marks).**
5. Write explanatory notes on the following:
 - a. Runoff **(5marks).**
 - b. Overland flow **(5marks).**
 - c. Through flow **(5marks).**