



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
2023_1 POP EXAMINATION.

COURSE CODE: ESM423

COURSE TITLE: Hydrology and Water Resources

CREDIT: 3 Units

TIME ALLOWED: 3Hours

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 flooding (**5marks**).

1b). Succinctly discuss the evaporation processes as it relates to the following surfaces; (i)water, (ii)soil and (iii)snow (**15marks**)

1c). Explain how the measurement of soil moisture is obtained using the gravimetric method (**5marks**)

2a). Name the major methods of analysis employed in the study of hydrology (**1mark**)

2b). Highlight the typology of aquifer (**4marks**).

2c). Elucidate on the essence of water resources development and management (**10marks**)

3a). Enumerate on the scope of water resources development (**6marks**)

3b). Describe the processes involved in the formation of groundwater(**4marks**)

3c). Outline the significance of hydrology(**5marks**)

4a). Show a well labelled diagrammatic representation of a rain gauge. (**5marks**)

4b). Succinctly discuss the concept of interception(**10marks**)

5). Expatriate on the features of drainage basin(**15marks**)

6a). Explain the role of Water Allocation in the development and management of water resources (**3marks**)

6b). Briefly describe the process of change of state in water (**3marks**)

6c). Explain the influence of water on climate (**9marks**)