

**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:
2. Vegetation covers (**6marks**).
3. Soil surface condition (**6marks**).
4. Rainfall intensity (**6marks**).
5. Soil moisture condition (**7marks**).
6. Discuss flooding as an environmental hazard under the following headings:
7. Causes (**5marks**).
8. Effects (**5marks**).
9. Control measures (**5marks**).
10. 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**).

1. a. Describe the process of groundwater formation (**5marks**).

b. List the typology of aquifer (**10marks**).

1. Write explanatory notes on the following:
2. Runoff (**5marks**).
3. Overland flow (**5marks**).
4. Through flow (**5marks**).