



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**14/16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS**  
**SCHOOL OF SCIENCE AND TECHNOLOGY**  
**JUNE/JULY EXAMINATION**

**COURSE CODE: ESM423**

**COURSE TITLE: HYDROLOGY AND WATER RESOURCES**

**TIME ALLOWED: 2 HOURS**

**INSTRUCTION: ATTEMPT ANY FOUR QUESTIONS**

1. (a) Highlight the major contributions of Leonardo da Vinci to the development of hydrology  
(b) Discuss the branches of Hydrology.  
(c) List three pioneers of modern science of hydrology.
2. (a) Water is generally referred to as a Universal Solvent. Discuss.  
(b) The uses of hydrology are as varied as the uses of water. Discuss
3. (a) List the factors that influence the nature of the pattern of stream channels.  
(b) Discuss a typical Drainage basin.  
(c) Explain any three (3) of the following terms.  
(i) Trellised drainage pattern (ii) Rectangular drainage pattern  
(iii) Dendritic drainage pattern (iv) Deranged drainage pattern.
4. (a) List the types of Precipitation  
(b) Explain one of the types of precipitation listed in (4a) above.  
(c) Discuss the principle and uses of Sling Psychrometer.
5. (a) Define Infiltration.  
(b) Water is held in the soil by some forces. Discuss.
6. (a) What is Flooding?  
(b) Discuss the impacts of Flooding.  
(c) Explain the factors affecting water resources management in Nigeria.