

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA  
SCHOOL OF PHYSICAL SCIENCES  
DEPARTMENT OF GEOLOGY

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BTECH GEOLOGY, 2016/2017  
SESSION

COURSE: GEL 525 (APPLIED HYDROGEOLOGY)

UNIT: 3

DATE: 28<sup>TH</sup> OCTOBER, 2017

TIME ALLOWED: 2 Hours

INSTRUCTIONS: Answer two questions from each section

**SECTION A**

1. What are aquifers and how are they classified?
2. List and discuss the techniques used in studying hydraulic conductivity.
3. State and discuss six sources of groundwater pollution in a sedimentary environment.

**SECTION B**

1. (a) Using suitable diagrams, explain the occurrence of subsurface water.  
(b) Explain the various processes involved in groundwater development.
2. Write brief notes on the following:
  - i. Flow system mapping
  - ii. Hydrogeological maps
  - iii. Flownets
3. Using Flownets, find the seepage through a dam 13m long, 7.5m high, with impounded water 6.2m deep, tail water 2.2m high and entire length of dam being 72m.  
Take hydraulic conductivity to be  $6.1 \times 10^{-4}$  cm/sec.