

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

**FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BTech GEOLOGY
2017/2018 SESSION**

COURSE CODE: GEL 517

UNIT: 3

COURSE TITLE: APPLIED ENGINEERING GEOLOGY

INSTRUCTIONS: ANSWER FOUR QUESTIONS IN ALL. AT LEAST ONE QUESTION
FROM EACH SECTION

TIME ALLOWED: 2 HOURS 30MIN.

DATE:

SECTION A

- 1a. Define the following terms:
 - (i). Engineering geology
 - (ii). Geotechnical Engineering.
- 1b. Describe geological factors that are important for urban development.
- 1c. Describe the problems associated with engineering works in karsts topography.

- 2a. Compare and contrast the terms core recovery value and rock quality designation.
- 2b. Describe the various conditions that result to ground subsidence.
- 2c. Explain the reason why dams are not normally built over faults

- 3. Briefly explain the term seepage.
- 3b. Mention the various effects of seepage.
- 3c. What are the control measures for seepage.

SECTION B

- 4a. Enumerate the uses of dam
- 4b. What type of dam will you recommend for an area associated with earthquakes? Give explanation for your choice
- 4c. Discuss the type of failure that is commonly associated with the type of dam mentioned in 4b above

- 5. Write explanatory notes on any three of the following:
 - 5a. Materials for dam construction
 - 5b. Requirements for engineering geological map
 - 5c. The type of engineering geology map you will employ to reveal information from the subsurface
 - 5d. Geophysical techniques for acquiring engineering geological map

- 6a. Enumerate all the strategies involved I site investigation
- 6b. Describe any three listed in 6a above.