

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

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BTech GEOLOGY, 2014/2015 SESSION

COURSE: GEL517 (APPLIED ENGINEERING GEOLOGY)

UNIT: 3

DATE: 13th April, 2016.

TIME ALLOWED: 2HR. 30 MIN.

INSTRUCTIONS: ANSWER TWO QUESTIONS FROM SECTION A AND B

SECTION A

- 1a Discuss comprehensively the classification of engineering geological maps.
- 1b. List any five procedures for site investigation.
- 2a. What are the techniques for acquiring engineering geological maps.
- 2b. Give a detailed explanation of any three of the techniques listed above.
- 3a. Briefly give an outline of the classification of dams.
- 3b. List all the types of failures associated with dams.
- 3c. Explain in detail any of the three failures of dams listed in 3b above.

SECTION B

- 1 Briefly explain the terms Core Recovery Value and Rock Quality Designation. Figure 1 below shows the total core run and the total core recovered from a coring operation
 - i. Calculate the core recovery value in meters.
 - ii. Calculate the rock quality designation in meters.
 - iii. Comment on the results

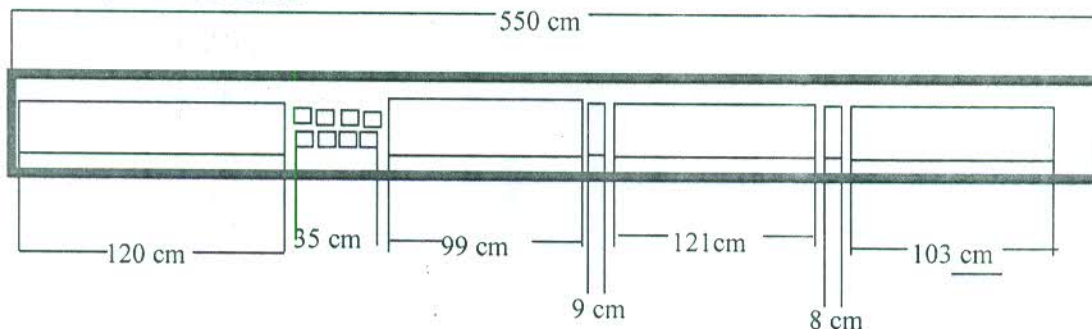


Figure 1: Total core run and total core recovered

- 2a. Explain the procedures for the identification of inorganic fine-grained soils.
- 2b. Explain the various factors to be considered in the planning of an urban environment.
- 3a. list any five soil classification descriptive sequence for coarse grained soil.
- 3b. Explain all the five soil classification descriptive sequence for coarse grained soil listed in 5a above.