

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF PHYSICAL SCIENCES
DEPARTMENT OF GEOLOGY
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BTech GEOLOGY, 2015/2016
SESSION

COURSE: GEL 312 (GEOLOGICAL RESEARCH TECHNIQUES) UNITS: 2

DATE: 9th April, 2016.

TIME ALLOWED: 2 Hours.

Instructions: Answer any three questions. Show all necessary steps in problems that require calculations.

SECTION A

- 1a. Briefly discuss the application of geostatistical concepts in the study of geology.
- 1b. What is an experimental semi-variogram and what does it show?
- 1c. Give brief description of the components of a semi-variogram.
- 1d. Use the data below to plot an experimental semi-variogram.
- 1e. Fit an appropriate model on the plotted points of the semi-variogram.

X	Y	z
1	1	2
6	1	3
10	1	4
11	1	5
12	1	6
10	1	5
9	1	4
8	1	3

- 2. a. Discuss appropriate field behaviour that should be exhibited in a geological field mapping exercise.
- b. How can one ensure the safety and well-being of other group members in a geological field mapping exercise?
- c. List and explain the functions of five major field equipment that may be used for a successful geological mapping exercise.
- 3.a. What is a grid?
- b. Briefly explain FIVE (5) different gridding methods.
- c. Write briefly on the application of Geographic Information System (GIS) in geosciences.
- 4. a. What is plagiarism?
- b. Why is it necessary to cite sources in technical report writing?
- c. Discuss the features of citation
- 5. Discuss extensively the key steps to effective presentation.