

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 212

UNIT: 3

COURSE TITLE: CRYSTALLOGRAPHY AND DESCRIPTIVE MINEROLOGY

INSTRUCTIONS: ANSWER TWO QUESTIONS FROM EACH SECTION

TIME ALLOWED: 2 HOURS 30 MIN.

DATE: 30 APRIL 2018

SECTION A

- 1 a) Write short notes on Vander Waals Bonding
- b) Outline the factors responsible for differences in crystal habit
- 2 a) Use appropriate diagram only to describe the reference axes used in the classification of crystal system
- b) Briefly write on the building block element
- 3 a) With the aid of diagram differentiate between crystal habit and crystal form
- b) Define the following:
i) interfacial angle ii) amorphous iii) plane of symmetry iv) crystal class
v) brattice lattice

SECTION B

- 1a. Simply define the following: (i) An Atom (ii) Element (iii) Compound (iv) Mixture (v) Atomic radii (vi) Ionic radii
- 1b. List and briefly write on the different types of chemical bonding in minerals
- 2a. Write briefly on the following properties of mineral with clear examples:
(i) Streak (ii) Cleavage (iii) Specific Gravity (iv) Luminescence (v) Magnetism
- 2b. What is polymorphism? Write on the various form of polymorphism and give example on each
- 2c. Write short note on the ways in which Pseudomorphism can occur
- 3a. Briefly write on the rock forming minerals.
- 3b. I) List the different classes of minerals.
II) Describe the following minerals systematically
(i) Diamond (ii) Gold (iii) Magnetite