



ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE
FACULTY: BASIC AND APPLIED SCIENCES
DEPARTMENT: PHYSICAL AND CHEMICAL SCIENCES
FIRST SEMESTER EXAMINATIONS
2019/2020 ACADEMIC SESSION

COURSE CODE: AGY 203

COURSE TITLE: CRYSTALLOGRAPHY AND MINERALOGY

DURATION: 2 ½ Hours

HOD's SIGNATURE

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TOTAL MARKS: 60

INSTRUCTIONS: ANSWER FOUR (4) QUESTIONS IN ALL.

1. (a) Define the following terms as used in crystallography with examples:
(i) a crystal (iv) motif (ii) Lattice (v) unit cell (iii) crystal structure
(b) Outline the crystallographic systems.
2. (a) What are minerals and how are they different from other substances?
(b) List five (5) examples of silicate and non-silicate rock-forming minerals each.
(c) Explain six (6) physical properties of minerals which can be used for their identification in hand specimen.
3. Explain the following using illustrative diagrams as appropriate:
(a) Center of symmetry with illustrative diagram of a tetrahedron as an example
(b) Plane of symmetry, with illustrative diagram of a cube as an example
(c) Axis of symmetry with illustrative diagram of a cube as an example
4. (a) Explain the mohs' scale of hardness
(b) Explain the differences between the following pairs:
(i) Feldspars and feldsparoids (iii) Colour and streak of a mineral
(ii) Inosilicates and phyllosilicates
5. (a) What are twinned crystals?
(b) Describe the following twinned crystals with illustrative diagrams:
(i) Repeated twin (ii) Penetration twin (iii) Simple twin (iv) Polysynthetic twinning
6. (a) State the law of constancy of angles.
(b) Discuss the measurement of the interfacial angles using contact goniometer
(c) What are polymorphs? Give two examples.