

D 72385

(Pages : 2)

Name.....43.....

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(U.G.—CCSS)

Core Course—Geology

GL 3B 05—CRYSTALLOGRAPHY

(2013 Admissions)

Time : Three Hours

Maximum : 30 Weightage

Draw neat sketches wherever necessary.

I. Objective type questions. (Answer all *twelve* questions). Choose the correct answer.

- 1 The total number of crystal classes in the crystal kingdom :
(a) 23. (b) 32.
(c) 30. (d) 36.
- 2 The type of crystal forms that do not have either plane *or* centre of symmetry and occur in *two* positions which are mirror images of each other :
(a) Holohedral forms. (b) Hemihedral forms.
(c) Hemimorphic forms. (d) Enantiomorphic forms.
- 3 A closed crystal form of the galena type of the Isometric system consisting of maximum number of faces :
(a) Hexaoctahedron. (b) Hexatetrahedron.
(c) Trisoctahedron. (d) Tetrahexahedron.
- 4 The type mineral of Normal class of Orthorhombic system :
(a) Beryl. (b) Gypsum.
(c) Barite. (d) Zircon.

Fill in the blanks :

- 5 The law of constancy of interfacial angle was formulated by _____.
- 6 _____ is an form consisting of *two* faces which cuts one crystallographic axis and remains parallel to the remaining axes.
- 7 Tetrahedron is the hemihedral form of _____.
- 8 The plane by which the component crystals of a twin are joined is called the _____ plane.

Name the following :

- 9 The instrument used for the measurement of interfacial angles.
- 10 The axis which shows *two* fold symmetry in the normal class of monoclinic system.

Turn over

- 11 The crystal system in which calcite crystallizes.
 - 12 The maximum number of axis of symmetry possible in the crystal world.
($12 \times \frac{1}{4} = 3$ weights)
- II. Short answer type questions. (Answer *all* nine questions).
- 13 Crystal.
 - 14 Closed form.
 - 15 Law of axial ratio.
 - 16 Stereogram.
 - 17 Sphenoid.
 - 18 Pedion.
 - 19 Dihexagonal pyramid.
 - 20 Iron-cross twin.
 - 21 Pedial class.
($9 \times 1 = 9$ weights)
- III. Short essay type questions. (Answer any *five* questions).
- 22 Stereographic projection.
 - 23 Law of Rational indices,
 - 24 Symmetry elements of Normal class of Isometric system.
 - 25 Crystal forms of Normal class of Orthorhombic system.
 - 26 Typical forms and symmetry of Rhombohedral class of Hexagonal system.
 - 27 Types of crystal forms in Triclinic system-Normal class.
 - 28 Laws of Twinning.
($5 \times 2 = 10$ weights)
- IV. Essay type questions. Answer any *two* questions.
- 29 Describe the important parameter systems of crystal notation.
 - 30 Write an essay on the elements of symmetry with neat sketches and examples.
 - 31 Give an account of the symmetry elements, forms and type mineral of the Normal class of Monoclinic system.
($2 \times 4 = 8$ weights)