

72384

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Name.....

42

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(UG-CCSS)

Core Course

Geology

GL 3B 05—CRYSTALLOGRAPHY

(2009–2012 Admissions)

Time : Three Hours

Maximum : 30 Weightage

Draw neat sketches wherever necessary.

I. Objective type questions. Answer all questions :

Name the following :—

- 1 Total number of crystal classes in systematic crystallography.
- 2 Total number of faces in Trapezohedron.
- 3 All faces whose lines of intersection are parallel.
- 4 An instrument used in measure interfacial angle.

Choose the most appropriate answer :

5 Total number of faces in Hexoctahedron :

- | | |
|---------|---------|
| (a) 24. | (b) 16. |
| (c) 48. | (d) 12. |

6 Type mineral of Normal class of Monoclinic system.

- | | |
|-----------------|--------------|
| (a) Gypsum. | (b) Calcite. |
| (c) Orthoclase. | (d) Topaz. |

7 Type of twinning in Rutile.

- | | |
|----------------|--------------------|
| (a) Albite. | (b) Baveno. |
| (c) Genculate. | (d) Polysynthetic. |

8 Motifs relative to each other by mirror plane are known as :

- | | |
|-------------------|----------------------|
| (a) Polymorphism. | (b) Enantiomorphism. |
| (c) Isomorphism. | (d) Pseudomorphism. |

Turn over

Fill in the blanks :

- 9 Type mineral of Normal class of Tetragonal system is _____.
- 10 Twinning in which twin axis lying normal to the compositional plane is _____.
- 11 The internal angle bounded by three faces make a corner is crystal is _____.
- 12 Miller indices of Tetragonal prism of first order is _____.

(12 × ¼ = 3 w)

II. Short Answer questions. Answer *all* questions :

- 13 Miller indices.
- 14 Penetration twins.
- 15 Axial ratio.
- 16 Solid angles.
- 17 Twinning plane.
- 18 Holohedral forms in crystals.
- 19 Rhomohedral class.
- 20 Space lattice.
- 21 Trapezohedral class.

(9 × 1 = 9 w)

III. Short Essays. Answer any *five* :

- 22 Goniometer.
- 23 Parameter system in crystals.
- 24 Enatiomorphic forms.
- 25 Law of rational indices.
- 26 Twin laws in plagioclase.
- 27 Stereographic projection.
- 28 Brazil law of twinning.

(5 × 2 = 10 w)

IV. Essay questions. Answer any *two* :

- 29 Describe symmetry elements and forms of Normal class of Isometric system.
- 30 Describe symmetry elements and forms of Normal class of Monoclinic system.
- 31 What is twinning ? Describe various types of twinning in crystals.

(2 × 4 = 8 w)