

18U321

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Name:

Reg. No.

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(Regular/Supplementary/improvement)

(CUCBCSS-UG)

CC15U GL3 B05 - CRYSTALLOGRAPHY

Geology - Core Course

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

Draw neat sketches wherever necessary

Part A

Answer *all* questions. Each question carries 1mark.

1. System with all three perpendicular crystallographic axes of unequal length.
2. Typical form in which garnet crystallize.
3. Type mineral of normal class of monoclinic system.
4. System in which plagioclase crystallize.
5. Mineral which shows Swallow tail twin.
6. (h0l) is the miller index of _____
7. Crystal form with minimum number of faces.
8. Cross hatched appearance of microcline is due to _____ twinning.
9. Miller index of trapezohedron of normal class of isometric system.
10. Crystal class of tourmaline.

(10 x 1 = 10 Marks)

Part B

Answer any *ten* questions. Each question carries 2 marks.

11. Faces and edges of crystal.
12. Contact goniometer.
13. Axial ratio.
14. Enantiomorphic forms.
15. Symmetry of plagiohedral class.
16. Hexoctahedron and Trisoctahedron.
17. Relation between cube and octahedron.
18. Difference between Prism of first order and second order.
19. Asymmetric class.

20. Crystallographic axis in hexagonal system.
21. Holohedral form.
22. Penetration twin.

(10 x 2 = 20 Marks)

Part C

Answer any *five* questions. Each question carries 6 marks.

23. Symmetry elements.
24. Symmetry of normal class of isometric system.
25. Twinning in feldspar.
26. Crystal notation.
27. Forms in normal class of orthorhombic system.
28. Compare and contrast tetrahedron and sphenoid.
29. Tripyramidal class of hexagonal system.
30. Laws of crystallography.

(5 x 6 = 30 Marks)

Part D

Answer any *two* questions. Each question carries 10 marks.

31. Describe the symmetry element, forms present and minerals that crystallize in the normal class of tetragonal system.
32. Describe the symmetry element and forms present in the rhombohedral class of hexagonal system.
33. Compare the symmetry element and forms present in the pyritohedral class and tetrahedral class of isometric systems.
34. What is a hemimorphic class? Compare the symmetry and forms of normal class and hemimorphic class in any one of the crystal systems.

(2 x 10 = 20 Marks)
