

**2SGeo-T2 - Geology Paper-II (Crystallography and Optical Mineralogy)**

P. Pages : 1

GUG/S/19/1241

Time : Three Hours



Max. Marks : 50

- Notes : 1. All the questions are compulsory and carry equal marks.  
2. Draw neat sketches wherever necessary.

1. What are parameter? Give an account of various methods of crystal notations.

**OR**

Give a brief account to zircon class of tetragonal crystal system with reference to symmetry elements and form present in it with millerian indices.

2. Give axial and symmetry elements of Gypsum class of Monoclinic system and describe its forms with Millerian indices.

**OR**

Describe the optical proportion of the following.

- |            |            |
|------------|------------|
| a) Biotite | b) Quartz  |
| c) Augite  | d) Calcite |

3. Describe the following:

- |                          |               |
|--------------------------|---------------|
| a) Control goniometer.   | b) Cube       |
| c) Dihexagonal Bipyramid | d) Extinction |

**OR**

Describe the following:

- |                                     |                                      |
|-------------------------------------|--------------------------------------|
| e) Law of "rationality of indices". | f) Octahedron.                       |
| g) Hemibrachydomes.                 | h) Optical proportion of orthoclase. |

4. Write short notes on the following.

- |                               |                                       |
|-------------------------------|---------------------------------------|
| a) Crystallographic symmetry. | b) Symmetry elements of Galena class. |
| c) Dihexagonal prism.         | d) Isotropism                         |

**OR**

Write short notes on the following.

- |                          |                 |
|--------------------------|-----------------|
| e) Crystallographic axes | f) Dodecahedron |
| g) Hexagonal prism       | h) Birefringes  |

5. Write on the following in not more than two sentences solve **any ten**.

- |                                     |   |
|-------------------------------------|---|
| a) Solid angles.                    | b) Faces  |
| c) Unit cell                        | d) Name any two mineral crystallized in galena class other than galena. |
| e) Brachypinacoid                   | f) Basal pinacoid.  |
| g) Front pinacoid                   | h) Side pinacoid  |
| i) Axial symmetry elements of Beryl | j) Twinkling  |
| k) Refractive index                 | l) Twinning in Microcline   |

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