

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

P. Pages : 1

**GUG/W/16/5578**

Time : Three Hours



Max. Marks : 50

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

1. Describe in detailed the Law's of crystallography.

**OR**

Give axial and symmetry elements of Zircon class of tetragonal crystal system and describe its forms with Millerian Indices.

2. Give axial and symmetry elements of beryl class of hexagonal crystal system and describe its forms with Millerian Indices.

**OR**

What is extinction? Describe in detail different types of extinction.

3. Write short notes on:-

- |                    |                                 |
|--------------------|---------------------------------|
| a) Miller indices  | b) Cube                         |
| c) Quarter pyramid | d) Optical properties of Garnet |

**OR**

Write short notes on:-

- |                          |                                  |
|--------------------------|----------------------------------|
| e) Crystallographic axes | f) Octahedron                    |
| g) Crystal of Axinite    | h) Optical properties of calcite |

4. Write short notes on:-

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| a) Weiss parameters.                  | b) Symmetry elements of galena class. |
| c) Symmetry elements of gypsum class. | d) Anisotrophism                      |

**OR**

Write short notes on:-

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| e) Geometric symmetry.                | f) Crystal axes in cubic system. |
| g) Hemipyramids of monoclinic system. | h) Optical properties of Augite. |

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

- Unit cell
- Space lattice
- Crystal
- Name any two minerals crystallizing in galena class other than galena.
- Basal Pinacoid in Baryte class.
- Axial symmetry elements of baryte type.
- Basal Pinacoid
- Side pinacoid
- Front pinacoid
- Plane polarized light
- Relief
- Twinkling

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