

PD-185 CV-19
(581) M.Sc. Geology (Ist Semester)
Examination Dec.-2020
CRYSTALLOGRAPHY & CRYSTAL OPTICS-IV
Paper - IV

Time : Three Hours]

[Maximum Marks : 080
[Minimum Pass Marks :

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिये। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

Note : Answer from both the Section as directed. The figures in the right hand margin indicate marks.

SECTION-'A'

1. Answer the following questions: 1 X 10 = 10
- What do you mean by interfacial angle?
 - Write down the 1st & 2nd laws of Crystallography?
 - Define the term Holohedral form.
 - Write down the symmetry of Berytype of Crystal.
 - Write down Newton's colour of Interference.
 - What do you mean by Pleodroism?
 - Define the uniaxial minerals.
 - Draw a neat diagram of Biaxial Optrix.
 - Define the oblique-extinction.
 - Define the 'X-Nicol' position.

SECTION-'B'

2. Write down short answers for the following questions: 2 X 5 = 10
- Write a note on morphology of Crystals.
 - Write down the symmetry of Beryl type of Crystals.
 - Write a note on pleochroism in crystals.
 - Write a note on Biaxial Indicatrix.
 - Write a note on optic axial angle (2v).

SECTION-'C'

Answer all questions:

12 X 5 = 60

3. Describe the symmetry elements of Crystal & classify it into 32 classes.

Or

Write notes on:

- (a) Space Lattice (b) Crystal Growth

4. Describe the forms & symmetry of holohedral class of orthorhombic system. (Barite Type)

Or

What do you mean by Crystal aggregates? Describe the twins belonging to monoclinic system.

5. Write notes on :

- (a) Interference - colour (b) Refraction and Refractometry

Or

Write notes on:

- (a) Birefringence in Crystals (b) Use of quartz wedge, birec compensator, mica plates.

6. Describe the Uniaxial & Biaxial Minerals.

Or

Write notes on:

- (a) Optical Characters of Biaxial Minerals. (b) Indicatrix of Isotropic & Uniaxial Minerals.

7. Write a note on Systematic determination of optical characters of Minerals.

Or

What do you mean by Dispersion in Minerals & describe Optic Axial Angle.