Question types of Crystallography- Theory and practical

Q/In this crystal find the number of:

Solid angles:

Faces:

Q/ Determine the symmetry of this crystal:

Symmetry:

Q/ In this crystal write:

Name of system:

Q/ Write the number of edges in this crystal:

Edge number:

Q/ For this crystal write the relation between:

a-Crystallographic axes:

b- Axial angles:

Q/ Classify this crystal depending on the space?

Q/ In this crystal find:

a- Plane of symmetry
b- Center of symmetry:

Q/ For this crystal write the:

Form name:

Q/ In this crystal determine the Herman Mauguin (crystal class):

Herman Mauguin:

Q/ Mention the name of **two** minerals that are crystallized in Hexagonal system?

Q/ If you know the symmetry of the crystal is (**1$\bar{A}$3, 3A2, 3m,i**), write the crystal class for it?

Crystal class:

Q/ Write type of the crystal depending on number of the form?

Type:

Q/ For this crystal write the axis of symmetry:

Axis of symmetry:

Q/What do these symbols mean:

Q/ Answer the requirements:

a- Symmetry:
b- Herman Mauguin:

Q/ In this crystal find out:

Crystal system:

Q/ Classify this crystal depending on crystallographic axis and form?

Q/ Mention 3 examples for the following:

1- Types of Crystal projection.

2- Content of Wulff net.

3- Types of Bravais Lattice.

4- Great circle content.

5- Graphical symbols used in stereographic illustration.

Q/ Draw the symmetry on the stereographic projection for the following crystal classes (Herman- Mauguin):

1. $\bar{3}$2/m

2. 6/m2/m2/m

3. 222

4. 6mm

Q/ in these sketches write which type of lattice present in these systems:

Q/ If you know the unit cell dimensions for mineral Quartz (Trigonal system) are $a_1=a_2=a_3= 4.913Å$; $c= 5.405$ Å; Find the axial ratio for it.

Q/ Determine Miller indices for the following faces:

1. 1a: 1b: $\bar{1}$/2c

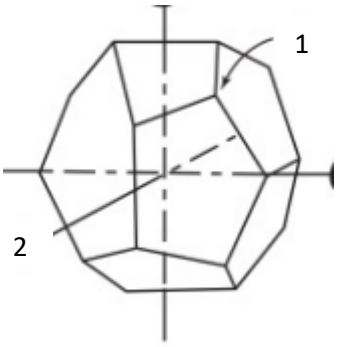
2. ∞a: ∞b: 1c

Q/ Determine the zone axis for faces $(1\bar{1}\bar{1})$, $(1\bar{1}\ 0)$

Q/ From the following data plot stereographic projection of a mineral Anglesite crystal ($PbSO_4$), Orthorhombic system.

Miller indices	Φ	ρ
011	0˚	40˚
$\bar{1}11$	-45˚	57˚
111	62˚	30˚
$\bar{1}10$	120˚	90˚

Q/ Write Weiss Parameters for numbered faces in the sketch:



Q) Explain the types of Bravais Lattice with sketch.

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