

NDSU Dept. of Geosciences - Mineralogy Exam 1 2001

Sample Questions

1. The symmetry operation that produces an identical motif after a translation of one-half of a unit cell followed by a mirror operation is called a _____.
2. The space group of rutile (TiO_2) is $P\frac{4_2}{m}nm$. It has a _____ Bravais lattice and the point group _____ in the _____ crystal system.
3. The characteristic symmetry of the orthorhombic crystal system is the presence of what?
4. What are the metrical properties of the tetragonal crystal group?
5. For the following figures, what are the:

Crystal system: _____

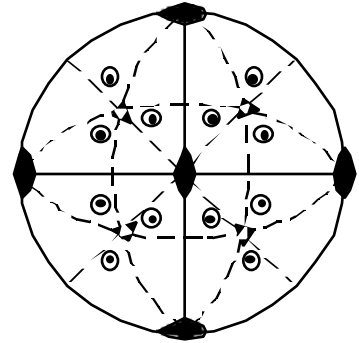
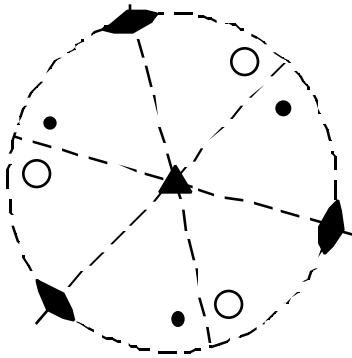
Principal directions: < >> >>> >

Point group: _____

Crystal system: _____

Principal directions: < >> >>> >

Point group: _____



6. Draw a complete stereogram with symmetry elements and generalized equivalent faces for the point group $\bar{4}2m$. Indicate the principal directions.
7. Given drawings of crystal shapes, name the crystal form or combination of forms.
8. What is a "prism," a "pyramid," and a "pinacoid"?
9. Think up some similar questions!