**GEOL 311: Mineralogy**

**LAB 2: Crystallographic Symmetry – Assignment**

Due: Week of September 17th, 2018

**Student Name …………………………………………………….**

**AIMS AND OBJECTIVES OF LAB 2**

* Learn to examine crystals and become familiar with their respective systems and symmetry

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| **Assignment** | **Grade** |
| **Crystal Systems** | /10 |
| **Crystal Symmetry** | /10 |
| **Total** | **/20** |

**A. Crystal Systems *(10 points)***

 To the best of your ability, draw and label the defining components of each crystal system. Describe the axis (a,b,c) and angle (α,β,γ) relationships. Points are awarded for correct content, not artistry. List one or two minerals in each system.

1) Isometric

2) Orthorhombic

3) Tetragonal

4) Monoclinic

5) Hexagonal

6) Triclinic

**B. Symmetry *(10 points)***

 In this section, we will work on symmetry operations. Complete the table below by visually inspecting the provided crystal models, assessing their symmetry content recording that content in Hermann-Mauguin (H-M) notation, and determining the crystal system and shape name.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Symmetry Content | H-M Symbol | Crystal System | Shape Name |
| 428 |  |  |  |  |
| 367 |  |  |  |  |
| 30 |  |  |  |  |
| 32 |  |  |  |  |
| 478 |  |  |  |  |
| 156 |  |  |  |  |
| 90 |  |  |  |  |
| 276 |  |  |  |  |
| 480 |  |  |  |  |