

GLY 4200C  
36 points  
8 students took exam

Name \_\_\_\_\_  
December 7, 2011  
1:15 p.m.

**LAB FINAL EXAMINATION KEY**  
Open Notes

Determine if each of the following grains is isotropic or anisotropic. (2 points)

0 1. Anisotropic

0 2. Isotropic

Estimate the relief (in words and numerically) of each of the following grains. (8 points)

10 3. ≈1.9 Very High

6 4. 1.58 Low

Indicate what technique was used to determine the relief, explain how you used the technique, and show calculations.

3 Becke line In

4 Becke line in  
Oblique illumination - white line away

Name the type of twinning seen in each crystal. (3 points)

1 5. Tartan (gridiron, crosshatch)

1 6. Deformational albite

1 7. Carlsbad

Name the feature seen in this crystal (zoning, ex-solution) (2 points)

2 8. Ex-solution (perthite)

Describe the cleavage or fracture (2 points)

9. 2D $\approx$ 60°

Determine the interference color (color and order) of the grain under the cross-hair.  
(6 points)

6. 3° green

3. 1° white

Indicate what technique was used to determine the interference color, explain how you used the technique, and show calculations (if any were used).

10. Goes to pastel colors upon addition,  
2° blue-green on subtraction

11. Turns reddish in PN

Describe the pleochroism or absorption, if any, seen in the following grains. Indicate whether you are reporting pleochroism or absorption. List the color range associated with each grain (3 points)

3.5. Pleochroism medium green to brownish light green

0.5. Absorption - slight change in brown color

3. Pleochroism - light brown to medium green



### Final Lab Exam Results (50 possible)

|                 |    |                            |
|-----------------|----|----------------------------|
| 49.0            |    |                            |
| <u>47.0</u>     | A  |                            |
| <u>42.0 - 2</u> | B  |                            |
| 41.0            |    |                            |
| <u>40.5 - 2</u> | B- |                            |
| 39.5            |    | <b>MEDIAN = 39.3</b>       |
| 39.0            |    |                            |
| <u>38.5</u>     | C+ | <b>MEAN = 37.3 (74.1%)</b> |
| <u>34.5 - 2</u> | D+ |                            |
| 31.0            |    |                            |
| <u>30.5</u>     | D- |                            |
| <u>23.5 - 2</u> | F  |                            |

### Previous Years Results -Lab Final Examination

| Term, Year   | Mean, % |
|--------------|---------|
| Fall, 2011   | 74.1    |
| Fall, 2010   | 54.1    |
| Fall, 2009   | 72.2    |
| Spring, 2009 | 58.5    |
| Fall, 2007   | 64.4    |
| Fall, 2006   | 91.5    |
| Fall, 2005   | 76.8    |
| Spring, 2004 | 64.5    |
| Fall, 2002   | 78.5    |

Prior to 2002, lab exams were given in a different format, and are not as comparable. All of these exams covered the same material, and were, as nearly as possible, of the same level of difficulty.

## TOTAL LABORATORY SCORES (OUT OF 450)

|              |    |                             |
|--------------|----|-----------------------------|
| <u>423.3</u> | A  |                             |
| 417.5        |    |                             |
| <u>413.3</u> | A- |                             |
| 401.7        |    |                             |
| 399.5        |    |                             |
| <u>395.2</u> | B+ |                             |
| 389.1        |    |                             |
| 386.8        |    | <b>MEAN = 383.6 (85.2%)</b> |
| 384.5        |    | <b>MEDIAN = 385.7</b>       |
| 384.4        |    |                             |
| 378.4        |    |                             |
| <u>377.6</u> | B  |                             |
| 368.8        |    |                             |
| <u>363.1</u> | B- |                             |
| <u>333.3</u> | C  |                             |
| <u>321.7</u> | C- |                             |

### Previous Years Results - Laboratory Scores

| Term, Year   | Mean, % |
|--------------|---------|
| Fall, 2011   | 85.2    |
| Fall, 2010   | 83.2    |
| Fall, 2009   | 86.3    |
| Spring, 2009 | 84.5    |
| Fall, 2007   | 84.6    |
| Fall, 2006   | 87.9    |
| Fall, 2005   | 80.9    |
| Spring, 2004 | 86.8    |
| Fall, 2002   | 88.3    |

Prior to 2002, lab exams were given in a different format, and are not as comparable. All of these exams covered the same material, and were, as nearly as possible, of the same level of difficulty.