GLY 4200C   Name _____

36 points   December 7, 2011

8 students took exam   10:30 a.m.

LAB FINAL EXAMINATION KEY

Open Notes

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

0   1. Isotropic_____

0   2. Anisotropic_____

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

8   3. Medium 1.63-1.64_____

11   4. Low 1.53_____

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

3   Becke line in | 4 Oblique illumination - bright blue line toward
                                       | shadow
                                       |
                                       |
                                       |
                                       |
                                       |
                                       |
                                       |
                                       |

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

0   5.   Tartan (gridiron, crosshatch)_____

0   6.   Carlsbad_____

2   7.   Albite_____

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

4   8.   Ex-solution (perthite)_____

Describe the cleavage or fracture (2 points)

3   9.   2D@60°

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

1   10. 2° blue

3   11. 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 Turns to 3° blue in addition poisition, | 11 Turns reddish in PN
     1° gray in subtraction |

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)

5   12.   Pleochroism - Dark blue to brown

1   13.   Absorption - Shades of brown

0   14.   Pleochroism - Purple to colorless

Determine if each of the following grains shows parallel, inclined, symmetric, undulatory, or continuous extinction. Report the extinction angle, τ, if applicable (4 points)

		Type of Extinction	Extinction Angle, τ
1,0	15.	Continuous	$\tau \approx$ °
4,4	16.	Parallel	$\tau = 0$ °

Determine the optical class, and sign if appropriate, of each of the following crystals. In the space below, sketch the inference figure you obtained, and describe how the sign was determined. If appropriate, estimate 2V in your description. (10 points)

		Optical Class	Sign	2V?
8,	17.	Biaxial	2 Negative	8 $\approx 6°$
7	18.	Uniaxial	4 Negative	
	17		| 18	

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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   **MEDIAN = 39.3**
39.0
<u>38.5</u>   C+   **MEAN = 37.3 (74.1%)**
<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   **MEAN = 383.6 (85.2%)**
384.5   **MEDIAN = 385.7**
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

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