March 13, 2009

UNIVERSITY OF PRETORIA

GLY 251 – CRYSTAL CHEMISTRY AND OPTICS

2. Semester test **THEORY**

Answer all the questions in 45 minutes and use sketches where applicable.

Theory questions **[10 each]**

1. Some people say that Ray is fast, while others say that Ray is slow. How are the fast and slow Ray related and how can you see that under the microscope ?
2. Explain the difference between being (optically) positive and negative and relate that to one mineral each from the tetrahedral and cubic systems.
3. How is the speed of light affected by the optical density of a material and what does that have to do with Snell's law?
4. Discuss the extinction of anisotropic minerals every 90 degrees under the microscope. What will you see if you remove the section - explain why.
5. I know it is not called a "border line", but you can see it under the microscope at the border between minerals sometimes. Please explain what the correct term for this optical effect is, how that effect is created, and why you should bother.