**SHORT ANSWER QUESTIONS** – (10 points each)
Remember that brevity is a virtue and verbosity is a vice.

1. Measuring and quantifying strain is an important aspect of structural geology.
   a. **Describe** the three major variables that are quantified in strain measurements.
   b. **Pick two** of these and give a geologic example in which you could make a measurement.
   c. There is always cause for caution with strain data. **Why?**

2. **Describe** the general evolution of a classic fold-thrust belt in light of the critical wedge theory. **Include in your answer:** How does the critical-taper theory describe the evolution of foreland propagating thrusts? **What** properties are responsible for the critical wedge angle?

3. **Describe three** mechanisms which produce tectonic foliation. **What** is the relationship between tectonic cleavage orientation and stress - **Why?** **What** ultimately controls differences in cleavage development in a given sequence of rocks that experience similar pressure and temperature conditions? **Why?**

4. **Describe two** different fold kinematic models. In each case describe how they are different and pay special attention to how strain differs in each fold.

5. **Describe the affects that** a) bedding thickness, b) differences in relative strength and c) mechanical stratigraphy have on fold geometry.

**Structural Analysis QUESTIONS** – (10 points each)

Open the powerpoint presentation that is on the class website (Exam 2 images.ppt). For each image discuss the following:

A. Describe the visible structural feature (s) – this should include a description of geometry and include the proper descriptive names for the features.
B. Describe the observable strain.
C. Describe the possible mechanism(s) that produced the features.
D. Describe some possible inferences you make about the deformation history of these rocks.