Geology 1

Answer the below questions for homework and to study for the final exam.

Make sure to be able to write out short answers for the following questions:

Chap 9- Crustal Deformation & Mountain Building

1. Know the types of faults that form in brittle regime (or rocks)

2. Know the types of folds (3 types) that form in ductile regime (or rocks)

3. Be able to sketch and/or normal faults, reverse faults, strike slip faults, anticlines and synclines; also be able to visually identify those structures

4. Know the type of stress that creates normal faults, reverse faults, strike slip faults, anticlines and synclines

5. How do rocks respond to differential stress at different depths inside the Earth? Be specific about each type of stress (shear, tensional, and compression) naming the structures that occur. Remember that rocks become ductile at depth due to increase temperature and depth. So, make sure to name both the brittle structures and ductile structures that form under different stresses.

Chap 9- Earthquakes

6. Explain the mechanisms of how earthquakes occur

7. What are the four types of seismic waves? Explain each one in terms of its characteristics (arrival time to a seismogram, type of movement, velocity, material it travels through)

8. Describe the steps you would go through to determine the source of an earthquake, provided you had access to three seismographs that recorded the event.

9. Explain what the Modified Mercalli scale measures and how it is used to assess what occurred to a region after a great earthquake. You just need to understand how it works, so don't memorize the details of the scale itself.

10. Describe the phenomenon of liquefaction in earthquakes and why it occurs. What happens? How can it affect buildings? What can be done to prevent damage to buildings in areas prone to liquefaction?

11. Be able to read the graph used in class that shows p-and s- wave travel time curves. You should be able to tell how far a wave travels in a given time or how much time it takes for a wave to travel a given distance.

12. You should be able to use a seismogram (with arrival times of p and s waves) along with the graph to determine the distance between the seismic stations and the epicenter of the earthquake.

Chap 7- Geologic time

13. What sequence of events would have to occur in order to produce the three types of unconformities (in other words, how does an unconformity develop? Make sure you know how to sketch each type, and how to recognize visually.

14. Describe the differences between the three kinds of unconformities.

15. How do geologists obtain a radiometric date?