## Earthquake Study Guide

- 1. Explain what the elastic-rebound theory is and how it relates to earthquakes and rocks.
- 2. Explain the different types of earthquake waves. For each one, describe the relative speed compared with the other, and which states of matter they can travel through.

3. Define in your own words what an earthquake is, and then compare it to the definition given in class.

- 4. Compare and contrast a tension crack with a fault.
- 5. Describe the 3 main types of faults. Show the relative movement for each.

- 6. In describing which is the lower wall and which is the upper wall in a fault zone, what words are given to describe these features.
- 7. Draw and describe three types of plate boundaries. In each one, show and describe where the earthquakes would occur.

- 8. What is a compression and dilations?
- 9. What factors determine the speed of an earthquake wave?
- 10. What is liquefaction and what causes it?
- 11. What can be done to minimize liquefaction?
- 12. What is the Richter Scale and how was it created?
- 13. What is the difference in energy release between a magnitude 5 vs a magnitude 6 earthquake?

- 14. What is the Modified Mercalli Intensity scale and how is it used? What sort of destruction is caused by a VII?
- 15. Compare and contrast epicenter with focus?
- 16. Where did the word tsunami originate from and describe what a tsunami is and its characteristics (speed, height, etc)?

17. List all the possible sources for a tsunami besides an earthquake and how would each generate one?

- 18. What is a tidal bore and how is it created?
- 19. What is a seiche and how is it created?

20. When a tsunami comes ashore why does the sea sometimes withdraw and then other times seem to just surge in?

- 21. Compare and contrast a horst and a graben?
- 22. What is an aftershock and what are their characteristics?
- 23. What is a foreshock?
- 24. Can we predict earthquakes?
- 25. Will California eventually fall off into the ocean?

26. Can you prevent large earthquake by having several small earthquakes occur on the fault or "lubricate" the fault?

27. How many earthquakes occur a day and what are our chances of having an earthquake?

28. What is Oregon's future of having a devastating earthquake? Where would it occur, what sort of effects could happen to our state, and what timeline would we expect this to happen?

29. How do you tell if an earthquake is a right-lateral or left-lateral strike slip fault?

30. Describe the steps to locate an earthquake? What is this called? Once an earthquake is located, how do you determine it's magnitude? If you need practice I suggest going to the website <u>http://www.sciencecourseware.org/VirtualEarthquake/VQuakeExecute.html</u> and practicing on one of the online labs.

31. What is an extension, compression and transform fault? Draw examples of each.