Ch. 10, Earthquakes

1. What is an earthquake?

2. List the major differences between P and S waves.

3. What type of seismic wave causes the most destruction and why?

4. List and explain 4 factors that affect the amount of destruction caused by seismic vibrations.

5. What is the difference between the *intensity* and *magnitude* of an earthquake? How are each measured?

6. Describe the mechanism that leads to the generation of a tsunami.

7. What is seismic tomography and what can it be used for?

Chapter 12, The Seafloor

1. During the peak of last ice age, global sea levels were 130 m lower.
a) How did this affect the position of the coast along the east coast of North America?
b)What evidence supports this figure for lower sea levels?

2. The distance from the west coast of Europe to the east coast of the United States is about 3500 miles. Assume that the Eurasian plate and North American plate have been continuously diverging from the mid-ocean ridge at the present rate of 2.3 cm/year. How many years ago did the mid-Atlantic rift begin forming the Atlantic Ocean?

3. Describe the composition of sediments on the deep ocean seafloor and explain what factors contribute to the type of sediment and the thickness of sediment accumulation.

4. Explain the formation and potential economic significance of Manganese nodules.

5. Describe the character of the following sea-floor topographic features and give an example location for each:

a) oceanic trenches

b) abyssal plains

c) guyots

d) seamounts

e) aseismic ridges

6. Explain the prevalence of extensive offset fracturing along mid-ocean ridges – what forces cause the fracturing to occur?

Chapter 13: Deformation and geologic structures

1.) What is the approximate strike of the NJ coastline at Atlantic City?

2.) What is the difference between stress and strain?

3). Describe the effects of rock type, time, pressure, and temperature on rock deformation. Which states of these conditions promote extensive deformation and which prevent deformation?

4.) Give two examples of geologic environments influenced by isostasy.

5). Draw the following faults and note what type of stress might cause such a fault and an example of a well-known fault of this variety:

a) normal fault

b) reverse fault

c) thrust fault

d) strike-slip fault

e) oblique slip fault

6). What is the distinction between a transform fault and a strike-slip fault?

7) Describe two measurement techniques that could be used to allow an eroded syncline to be differentiated from an eroded anticline?

8.) Describe a typical sequence of events in an orogeny at a continental-continental convergent tectonic margin.