

Earth Science 110: Introduction to Geology. Exam 1 Review.

Topics:

- The science of geology
- Plate tectonics
- Earthquakes
- Topographic maps

Reading:

Chapters 1, 2, 9

Note: This is NOT intended to provide a comprehensive review.

The questions below are examples of the type of questions that you should expect on the exam.

True or false?

- T (1) A plate is a segment of the lithosphere; thus, it includes the uppermost mantle and all of the overlying crust.
- T (2) Ocean crust is much thinner than continental crust.
- F (3) Most earthquakes in southern California are caused by a subduction zone boundary.
- T (4) The deepest parts of the oceans are the trenches located near subduction zones.
- F (5) The contour interval on all 1:24,000 topographic maps is 10 feet.

Multiple choice.

- A (6) The asthenosphere is
(a) hot and plastic (c) brittle
(b) mostly liquid magma (d) all of the above
- C (7) When a continental plate collides with an oceanic plate,
(a) the ocean plate floats above the continental plate
(b) the continental plate sinks into the mantle
(c) the oceanic plate sinks beneath the continental plate and into the mantle
(d) a divergent boundary forms
- A (8) A convergent boundary in oceanic crust forms
(a) a subduction zone (c) Iceland
(b) the mid-ocean ridge (d) Hawaii

- A (9) A qualitative earthquake scale based on human experience rather than quantitative seismograph measurements is called
- (a) the Mercalli scale (c) the Andreas scale
(b) the Richter scale (d) the decibel scale
- A (10) If an earthquake occurs, the first waves to arrive at a seismograph are the:
- (a) P waves (c) side-to-side surface waves
(b) S waves (d) rolling surface waves
- D (11) On a topographic map, stream valleys can be seen as:
- (a) green areas to show healthy vegetation in wet zones
(b) blue areas indicating the extent of the active floodplain
(c) depression contour lines indicated by hachures (small tick marks)
(d) "Vs" in the contour lines that illustrate the topography of the valley

Calculation (Show all of your work!)

(#12) If a stream measures 4 inches long on a 1:24,000 topographic map, how many miles long is it in reality (on the ground)? [Note: 5,280 feet = 1 mile]

(4 in map) (24,000 in ground / 1 in map) (1 ft / 12 in) (1 mi / 5,280 ft) = **1.52 miles**