

- \_\_\_\_\_ 1. Horsts and grabens reflect responses to tensional stress fields. **True (T)** False (F)
- \_\_\_\_\_ 2. \_\_\_\_\_ forms when a limestone recrystallizes during metamorphism.  
a. **marble**      b. gneiss      c. phyllite      d. quartzite      e. coal
- \_\_\_\_\_ 3. Which term denotes a strong, parallel alignment of coarse mica flakes and/or different mineral bands in a metamorphic rock?  
a. rock cleavage      **b. foliation**      c. stress streaking      d. marbleizing      e. quartzite
- \_\_\_\_\_ 4. Which of the following is a period of the Paleozoic?  
a. Quaternary      b. Triassic  
c. Eocene      d. Cretaceous  
e. **Permian**
- \_\_\_\_\_ 5. Seismic waves travel faster in oceanic crust than in continental crust. **True (T)** False (F)
- \_\_\_\_\_ 6. On a surface leveled by erosion the pattern of exposed beds of a plunging fold resembles that of the letter \_\_\_\_.  
a. X      b. H      **c. V**      d. I      e. T
- \_\_\_\_\_ 7. As seismic waves pass from solid granitic bedrock into soft unconsolidated sediments the wave velocity \_\_\_\_\_ and the wave amplitude \_\_\_\_\_.  
a. increases, increases      b. decreases, decreases  
**c. decreases, increases**      d. increases, decreases
- \_\_\_\_\_ 8. Which of the following is caused by crustal tension?  
a. thrust fault      b. reverse fault  
c. monocline      d. anticline  
e. **normal fault**
- \_\_\_\_\_ 9. A cavity or body of low-density material causes a \_\_\_\_\_ pull on a gravity meter relative to average crust.  
a. stronger      b. greater than the surrounding rock  
**c. weaker**      d. rapidly increasing  
e. Gravity can't be measured.
- \_\_\_\_\_ 10. The rise of the crust after removal of ice is called \_\_\_\_\_.  
a. **crustal rebound**      b. tectonic uplift      c. upheaval      d. subduction      e. dynamic adjustment
- \_\_\_\_\_ 11. Most folds or bends in rocks are produced by  
a. **compressive stress**      b. tensional stress  
c. elastic stress      d. fracturing  
e. none of these is correct
- \_\_\_\_\_ 12. As lava cools below the \_\_\_\_\_ point, a record of the earth's magnetic field is permanently trapped in the rock.  
a. freezing      b. burning      c. boiling      d. melting      **e. Curie**
- \_\_\_\_\_ 13. Deep focus earthquakes occur along mid-oceanic ridges where the plate boundary fractures extend deep into the mantle. True (T) False (F)
- \_\_\_\_\_ 14. What is the current geologic Era?  
a. Cretaceous      b. Paleozoic      **c. Cenozoic**      d. Precambrian      e. Mesozoic

- \_\_\_\_\_ 15. The crust and upper mantle form the \_\_\_\_\_.  
a. **lithosphere**                      b. asthenosphere  
c. core                                  d. outer core  
e. moho discontinuity.
- \_\_\_\_\_ 16. The contact between formations C and E is a(n) \_\_\_\_\_.  
a. angular unconformity              b. **disconformity**  
c. nonconformity                      d. anticline  
e. syncline
- \_\_\_\_\_ 17. Fault D is what type of fault?  
a. **normal**                      b. reverse              c. right lateral strike slip              d. left lateral strike slip
- \_\_\_\_\_ 18. The foot wall block is \_\_\_\_\_ of the fault plane  
a. left                      b. **right**
- \_\_\_\_\_ 19. The fault is \_\_\_\_\_ than formation C. We know this because of the principle of \_\_\_\_\_.  
a. younger, superposition              b. **younger, cross-cutting relationships**  
c. older, superposition                      d. older, cross-cutting relationships
- \_\_\_\_\_ 20. On the diagram the first thing to occur was \_\_\_\_\_.  
a. deposition of formation E              b. deposition of formation B  
c. fault D                                  d. **deposition of formation A**
- \_\_\_\_\_ 21. When a marine geologist collects a core of undeformed ocean-floor sediment, she knows that the youngest layer is on the top of the core and the oldest is at the bottom because of the principle of \_\_\_\_\_.  
a. supposition                      b. suspension              c. **superposition**                      d. inclusion              e. cross-cutting relationships
- \_\_\_\_\_ 22. In a disconformity the contact representing missing rock strata separates beds that are at an angle to one another. True (T) **False (F)**
- \_\_\_\_\_ 23. \_\_\_\_\_ can occur when water-saturated soil turns from a solid to a liquid as a result of an earthquake.  
a. creep                      b. **liquefaction**                      c. solifluction                      d. soil collapse                      e. gelatinization
- \_\_\_\_\_ 24. The geologic structure represented on the map is a(n) \_\_\_\_\_.  
a. unconformity                                  b. right lateral strike-slip fault  
c. **left lateral strike-slip fault**                      d. thrust fault  
e. a horse of a different color
- \_\_\_\_\_ 25. S-waves are compressional waves in which the rock vibrates back and forth in the direction of wave propagation. True (T) **False (F)**
- \_\_\_\_\_ 26. What is the term used for the decay product of a parent isotope?  
a. son                      b. **daughter**                      c. offspring                      d. relatives                      e. split

- \_\_\_\_\_ 27. Correlating rock units that are on separate continents usually involves  
 a. fossils b. glacial deposits  
 c. similarity of rock types d. cross-cutting relationships
- \_\_\_\_\_ 28. Which response lists rock in the order of increasing grain size and increasing metamorphism?  
 a. slate, phyllite, schist b. schist, slate, phyllite  
 c. phyllite, slate, schist d. slate, schist phyllite  
 e. quartzite, marble, hornfels
- \_\_\_\_\_ 29. Which type of foliation is produced by uniform confining pressure?  
 a. slaty cleavage b. schistose texture  
 c. gneissic texture c. shearing  
 e. none of these is correct
- \_\_\_\_\_ 30. A basin is a variety of a  
 a. dome b. anticline c. monocline d. fault e. none of these is correct
- \_\_\_\_\_ 31. Quartzite is the metamorphic product of  
 a. quartz sandstone b. granite  
 c. rhyolite d. olivine  
 e. limestone
- \_\_\_\_\_ 32. A Benioff earthquake zone is significant in plate tectonic theory because it  
 a. locates rift valleys on continents  
 b. coincides with mid-oceanic ridges  
 c. traces the descent of a sea-floor slab subducting into an oceanic trench or under a continent  
 d. may predict quake locations under transform faults  
 e. usually indicates where mantle plumes generate andesitic magma
- \_\_\_\_\_ 33. Which foundation material would most readily fail and undergo liquefaction during groundshaking?  
 a. weakly cemented, unsaturated, sandstone strata  
 b. unconsolidated, water-saturated mud and clay  
 c. dry, mechanically compacted, clay rich, fill material  
 d. well cemented, water-saturated, sandstone strata  
 e. granitic bedrock
- \_\_\_\_\_ 34. The oldest rocks are found in the center of an eroded syncline. True (T) False (F)
- \_\_\_\_\_ 35. A migmatite is a mixed \_\_\_ rock.  
 a. metamorphic and igneous  
 b. metamorphic and pyroclastic  
 c. metamorphic and sedimentary  
 d. contact and regional metamorphic  
 e. contact and hydrothermal metamorphic
- \_\_\_\_\_ 36. Normal and reverse faults are the most common types of \_\_\_\_\_.  
 a. dip-slip faults b. strike-slip faults  
 c. tensional faults d. compressional faults  
 e. grabens
- \_\_\_\_\_ 37. If a bed strikes north it must \_\_\_\_\_.  
 a. dip south b. dip either east or west  
 c. be horizontal d. have a strike of 90 degrees  
 e. have a strike of 270 degrees

- \_\_\_\_\_ 38. \_\_\_\_\_ metamorphism occurs adjacent to a pluton when a body of magma intrudes a relatively cool country rock.
- a. sedimentary      b. igneous      c. regional      d. burial      e. **contact**
- \_\_\_\_\_ 39. A \_\_\_\_\_ is the first wave to arrive at a recording station following an earthquake.
- a. Love wave      b. Rayleigh wave      c. S-wave      d. **P-wave**      e. surface wave
- \_\_\_\_\_ 40. A single seismometer can determine both distance and direction to the focus of an earthquake. True (T) **False (F)**
- \_\_\_\_\_ 41. A seismograph located 110 degrees from an earthquake epicenter would receive
- a. P, S and surface waves  
b. P and surface waves  
c. S and surface waves  
d. Only P and S waves  
e. **Only surface waves**
- \_\_\_\_\_ 42. The interpretation that the Earth's outer core is liquid comes from
- a. density calculations      b. studies of meteorites  
c. P-wave shadow zone      d. **S-wave shadow zone**  
e. the outer core isn't liquid
- \_\_\_\_\_ 43. The low velocity zone in the mantle corresponds to the asthenosphere of plate tectonic theory. **True (T)** False (F)
- \_\_\_\_\_ 44. Geologists study the composition of the earth's core using deep drill holes. True (T) **False (F)**
- \_\_\_\_\_ 45. If a bed strikes east it must \_\_\_\_\_.
- a. dip west      b. be horizontal  
c. **dip either north or south**      d. have a strike of 0 degrees  
e. have a strike of 180 degrees
- \_\_\_\_\_ 46. The bending of seismic waves as they pass from one material to another is called seismic \_\_\_\_\_.
- a. **refraction**      b. reflection  
c. deflection      d. attenuation  
e. waves don't bend when they pass through different materials.
- \_\_\_\_\_ 47. Metamorphic rock forms from pre-existing rock when heat and pressure cause solid-state transformations. **True (T)** False (F)
- \_\_\_\_\_ 48. When does the magnetic field in rocks form?
- a. **when the rocks formed**      b. unknown  
c. when the Earth formed      d. during sunspot maxima  
e. during times of unusually high sea levels
- \_\_\_\_\_ 49. Geologically, which are just submerged parts of continents?
- a. guyots      b. **continental shelves**      c. continental trenches      d. continental rise      e. abyssal plain
- \_\_\_\_\_ 50. Pelagic sediment is mainly derived from the land and is deposited on the abyssal plains by bottom currents. (T or **F**)
- \_\_\_\_\_ 51. Oceanic trenches:
- a. are found along all continental margins.  
b. **are typically 8-10 km deep.**

- c. were eroded by rivers during the Ice Ages when sea-level was lower.
- d. all of these

\_\_\_\_\_ 52. Geologically quiet coasts are termed:

- a. Subduction zones.
- b. **Passive continental margins.**
- c. Atolls.
- d. Active continental margins.

\_\_\_\_\_ 53. Stress and strain are the same thing. (T or **F**)

\_\_\_\_\_ 54. Deep focus earthquakes commonly occur in the zone where two continental lithospheric plates converge. True (T) False (F)

\_\_\_\_\_ 55. Which response best describes seismic gaps?

- a. slices of land bounded by active, dip-slip faults
- b. **unusually quiet zones along otherwise active faults**
- c. Slices of land bounded by active, strike-slip faults
- d. Segments of active faults with very high rates of creep
- e. Inactive faults cutting a high ridge