What is the geologic structure in the following diagram?

A. Anticline
B. Syncline
C. Monocline
D. Tilted beds

Which type of stress generally thins continental crust?

A. Compressional stress
B. Tensional stress
C. Shear stress

Rocks in a high temperature environment are more likely to:

A. Deform in a brittle manner
B. Deform in a ductile manner

What plate-tectonic setting would you most likely find shear stress?

A. Ocean-ocean convergent boundary
B. Ocean-continent convergent boundary
C. Mid-ocean ridge (divergent) boundary
D. Transform fault boundary

What are the coordinates for the following strike and dip symbol?
A. Strike NE-SW
   Dip 30°SE
B. Strike NW-SE
   Dip 60°SW
C. Strike E-W
   Dip 30°N

What is the geologic structure in the following diagram? (If you would like, sketch the cross section in the box below. It will help you identify the structure).

A. Anticline
B. Syncline
C. Monocline
D. Tilted beds

Which unit is the oldest rock unit?
a. A
Which unit was formed before A but after E?


Which unit is composed of granite and is older than F?

a. A  e. E
Unit A and D are igneous rocks. The rest are sedimentary rocks. Which sedimentary rock did not experience contact metamorphism?

a. C  
bd. G  
bc. H  
e. F  
c. E  
f. B

What is the possible age of F if A is 100 million years old and D is 70 million years old?

a. 85 Myrs  
b. 170 Myrs  
c. 55 Myrs  
d. 110 Myrs
A layer of sandstone is in contact with a mass of granite. The granite contains small pieces (inclusions) of the sandstone. Which of the following can be inferred about the relative ages of the two rocks?

A) The sandstone is older than the granite  
B) The granite is older than the sandstone  
C) Both rocks are the same age  
D) Not enough information is given to infer relative ages

If the half-life of a parent element is 1000 years and you found a specimen with equal numbers of parent and daughter atoms, which of the following best approximates the age of the specimen?

A) 500 years  
B) 1000 years  
C) 1500 years  
D) 2000 years

Dinosaurs probably became extinct because:

a. they smoked Camels (cigarettes, not the mammals)  
b. more became lawyers than scientists or engineers (like us)  
c. sea level rose rapidly due the end of the Ice Ages  
d. an asteroid or comet collided with the earth and made it dark

A small amount of water is added to a cone-shaped pile of dry sand. The sand becomes moist following the addition of the water so that it sticks together when squeezed. How did the addition of the water affect the stability of the slopes of the sand pile?

a. Slopes became more stable  
b. Slopes became less stable
c. Stability of the slopes stayed the same

Which of the three labeled locations on the topographic map above has the lowest risk of mass wasting? (Numbers represent elevation in meters above sea level.)
a. A  
b. B  
c. C  
d. All three locations are equal

The photograph above shows a common type of mass wasting caused by earthquakes. What type of mass wasting is shown in the photograph?
a. creep  
b. mudslides  
c. rock fall  
d. landslides  

The road cut in the diagram above is likely to experience mass wasting by which process?

a. Rockfall  
b. Rockslide  
c. Slump  
d. Debris flow  

If the swimming pool on the right side of the diagram leaks, the underlying dirt fill is likely to experience mass wasting by which process?

a. Rockfall  
b. Rockslide  
c. Slump  

d. Debris flow
d. Debris flow
Which soil and topography conditions will have the greatest infiltration rate?

a. Sandy soil and steep slope
b. Clay soil and flat land
c. Sandy soil and gentle slope

A farmer drilled a well into sand and gravel. He installed a septic system (see diagram) that started to leak a few years later. The well providing the drinking water did not become contaminated. Why?

a. The bacteria were drowned in the groundwater.
b. The groundwater flow carried water away from the well.
c. Gravel has a low permeability that makes it difficult for bacteria to travel from the septic system to the well.
d. The septic system is not located in the aquifer’s recharge zone.

Liquid hazardous waste is disposed of by pumping it down injection wells. Which well location would be the most suitable to use for an injection well?

a. A  b. B  c. C