

# Construction and Industry Asbog

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## Question: 1

A rock described as arkosic

- A. is frequently a basalt.
- B. contains >90% olivine.
- C. is sandstone containing  $\geq 25\%$  feldspar.
- D. is a type of carbonate.

**Answer: C**

Explanation:

Arkose is a type of detrital sedimentary rock that contains at least 25% feldspar. The answer cannot be A or D because neither basalt nor carbonate are detrital sedimentary rocks. The answer cannot be B because a detrital sedimentary rock containing >90% olivine could not also contain  $\geq 25\%$  feldspar.

## Question: 2

If the scale of a map is 1:24,000, what does 1 inch on the map represent?

- A. 240 feet
- B. 2,000 feet
- C. 24,000 feet
- D. 1,000 feet

**Answer: B**

Explanation:

The map scale is a ratio of distance on a map to the actual distance on the ground. A scale of 1:24,000 means that 1 inch on the map represents a distance of 24,000 inches (2,000 feet).

## Question: 3

In a region eroded by glaciers, what are bowl-shaped depressions at the head of a glacial valley?

- A. Cirques
- B. Kames
- C. Arêtes
- D. Drumlins

**Answer: A**

Explanation:

Bowl-shaped portions of valleys carved by glacial erosion are called cirques. The other choices are glacial features, but they are all hills or ridges, as opposed to depressions.

### Question: 4

Which two-letter symbol is commonly used for a fat clay?

- A. CH
- B. OH
- C. CL
- D. ML

**Answer: A**

Explanation:

A fat clay is one with a high liquid limit. Under the United Soil Classification System, the letter C denotes clay, and H denotes a high liquid limit. The other choices are other types of fine-grained soils: OH is an organic-rich soil with a high liquid limit, CL is a clay with a low liquid limit ("lean clay"), and ML is silt with a low liquid limit.

### Question: 5

For a dip-slip fault, what is the area above the fault plane known as?

- A. Footwall
- B. Core
- C. Flank
- D. Hanging wall

**Answer: D**

Explanation:

For a dip-slip fault, the hanging wall lies above the fault plane. The footwall is below the fault plane. For reverse and thrust faults, the hanging wall moves up relative to the footwall, and for normal faults the hanging wall moves down relative to the footwall.

### Question: 6

Which isotope dating method is commonly used to determine the ages of detrital zircon grains in sandstone?

- A. K-Ar
- B. U-Pb

- C. Rb-Sr
- D. Sm-Nd

**Answer: B**

Explanation:

U-Pb geochronology is the most commonly used method for dating zircon grains. The other methods are not appropriate for dating zircon because of the low abundances of the parent isotopes (i.e., K) in zircon.

### Question: 7

In general, which tectonic environment is most likely to include normal faults?

- A. Mid-ocean ridge
- B. Subduction zone
- C. Transform plate boundary
- D. Mantle hot spot

**Answer: A**

Explanation:

Mid-ocean ridges are plate boundaries where oceanic plates diverge from each other, so they are regions of normal faulting. Subduction zones are dominantly regions of thrust faulting, and transform plate boundaries are characterized by strike-slip faults. Mantle hot spots are not necessarily regions of regional-scale faulting.

### Question: 8

Which of the following up-section stratigraphic sequences is the clearest example of a marine transgression?

- A. Beach sand, open-shelf carbonate, shoreface deposits, fluvial sand
- B. Fluvial sand, beach sand, shoreface deposits, open-shelf carbonate Correct
- C. Shoreface deposits, fluvial sand, open-shelf carbonate, beach sand
- D. Open-shelf carbonate, beach sand, fluvial sand, shoreface deposits

**Answer: B**

Explanation:

Marine transgressions are represented by stratigraphic sequences that reflect an up-section change to deeper water conditions. Fluvial sands may be deposited above sea level, beach sands are deposited at sea level, shoreface deposits occur immediately off shore, and open-shelf carbonate is deposited in the shallow sea. Thus, answer B represents a continuous up-section change to a deeper water environment.

### Question: 9

Which of the following minerals is NOT normally associated with hydrothermal alteration?

- A. Epidote
- B. Pyrite
- C. Hematite
- D. Olivine

**Answer: D**

Explanation:

Olivine is not typically formed through hydrothermal alteration but rather through magmatic processes.

### Question: 10

What is a sandstone with >90% detrital quartz called?

- A. Feldspathic arenite
- B. Lithic arenite
- C. Quartz arenite
- D. Volcaniclastic

**Answer: C**

Explanation:

Quartz arenite is a sandstone with >90% detrital quartz. Feldspathic arenite contains <<90% quartz, and lithic arenite contains a significant proportion of lithic fragments. A volcaniclastic rock is simply a clastic rock that contains volcanic fragments.

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