

Earth Science 110: Introduction to Geology. Exam 3 Review.

Topics:

- Weathering and sediments
- Sedimentary rocks
- Cumberland Valley geology
- Marcellus shale
- Metamorphic rocks
- Rocks lab

Reading:

Chapters 6, 7, 8

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) The mineral calcite, which is the major mineral in limestone, is a combination of the carbonate anion with calcium.
- T (2) Slate and schist can both be formed by metamorphic changes to shale.
- F (3) The natural gas stored in the Marcellus shale could support all U.S. demand for 200 years.
- F (4) At high metamorphic grades, light- and dark-colored minerals may separate into wide bands, to form a rock called slate.

Multiple choice.

- B (5) Most sediments are:
- (a) clastic, resulting from solid particles precipitating from solution in water
 - (b) clastic, composed of broken-down fragments of rocks
 - (c) chemical, resulting from precipitation from solution in water
 - (d) chemical, resulting from organisms that have extracted materials from water
- A (6) Which transport mechanism generally results in the best-sorted sediments?
- (a) wind
 - (b) glaciers
 - (c) rivers
 - (d) ocean waves
- D (7) Which sedimentary structure would indicate deposition by wind blowing from different directions?
- (a) graded bedding
 - (b) ripple marks
 - (c) mud cracks
 - (d) cross bedding

- C (8) In what type of bedrock geology are most of the Cumberland Valley sinkholes located?
- (a) granite
 - (b) shale
 - (c) limestone
 - (d) gneiss
- C (9) The Marcellus shale is located:
- (a) throughout all of Pennsylvania and most of New York - New England
 - (b) southeastern Pennsylvania, Maryland, and Delaware
 - (c) northern and western Pennsylvania and into New York, West Virginia, Ohio, and Maryland
 - (d) only in the vicinity of Marcellus, NY
- D (10) Which of the following types of rocks can undergo metamorphism?
- (a) sedimentary rocks only
 - (b) sedimentary or igneous rocks only
 - (c) sedimentary or metamorphic rocks only
 - (d) sedimentary, igneous, or metamorphic rocks
- B (11) In metamorphic rocks, foliation is caused by:
- (a) heat
 - (b) pressure
 - (c) circulating fluids
 - (d) age of the rock
- D (12) The term metamorphic grade refers to:
- (a) the economic value of minerals found in metamorphic rock
 - (b) the number of distinct mineral zones found in a body of metamorphic rock
 - (c) the angle or slope of a body of metamorphic rocks
 - (d) the intensity of metamorphic change that a rock has undergone