

**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?**

- \_\_\_\_\_ (1) The mineral calcite, which is the major mineral in limestone, is a combination of the carbonate anion with calcium.
- \_\_\_\_\_ (2) Slate and schist can both be formed by metamorphic changes to shale.
- \_\_\_\_\_ (3) The natural gas stored in the Marcellus shale could support all U.S. demand for 200 years.
- \_\_\_\_\_ (4) At high metamorphic grades, light- and dark-colored minerals may separate into wide bands, to form a rock called slate.

**Multiple choice.**

- \_\_\_\_\_ (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
- \_\_\_\_\_ (6) Which transport mechanism generally results in the best-sorted sediments?
- (a) wind
  - (b) glaciers
  - (c) rivers
  - (d) ocean waves
- \_\_\_\_\_ (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

\_\_\_\_\_ (8) In what type of bedrock geology are most of the Cumberland Valley sinkholes located?

- (a) granite
- (b) shale
- (c) limestone
- (d) gneiss

\_\_\_\_\_ (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

\_\_\_\_\_ (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

\_\_\_\_\_ (11) In metamorphic rocks, foliation is caused by:

- (a) heat
- (b) pressure
- (c) circulating fluids
- (d) age of the rock

\_\_\_\_\_ (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