

ROCK EXAM C

ON IGNEOUS, SEDIMENTARY, METAMORPHIC AND THE ROCK CYCLE

CHAPTER 5 & 6

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DIRECTIONS: select the BEST choice for the list provided.

- 1) The large coal fields found in Pennsylvania provide evidence that the climate of the northeastern United States was much warmer during the Carboniferous Period. This change in climate over time is best explained by the
- changes in the environment caused by humans
 - effects of seasons
 - evolution of life
 - movements of tectonic plates

- 2) These fossilized jellyfish were most likely discovered in which type of rock?
- Granite
 - Pumice
 - Sandstone
 - Slate

In the space provided, select the relative age of rock units VII, VIII, and IX from A to C, with number A indicating the oldest rock, B indicating the middle age rock, and number C indicating the youngest rock.

- 3) Rock unit VII is:

- (a) oldest
- (b) middle
- (c) youngest

- 4) Rock unit VIII is:

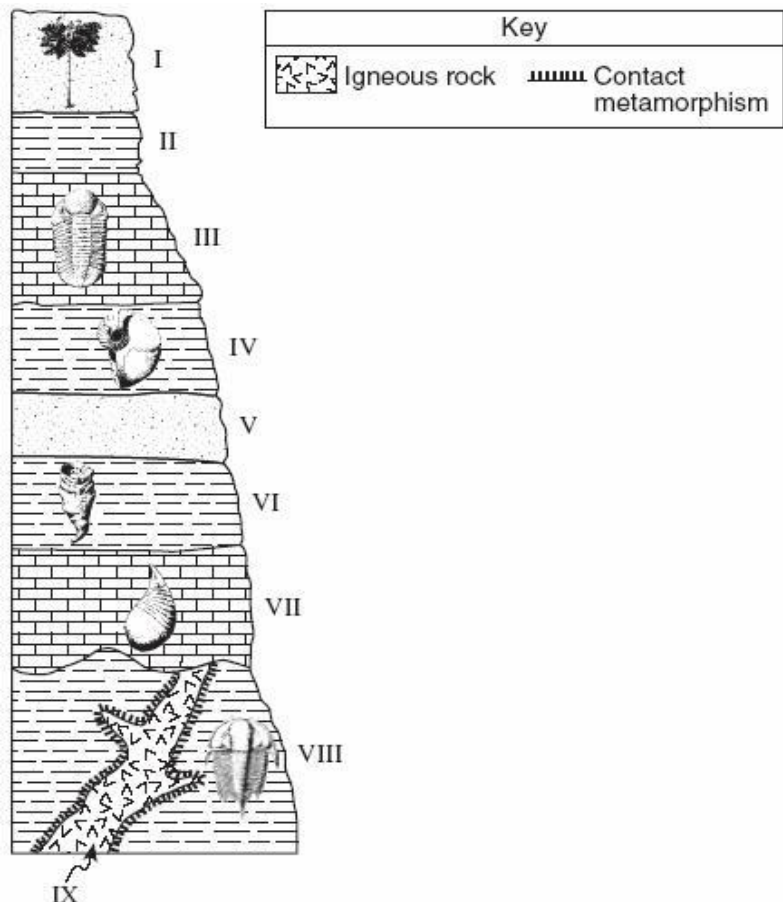
- (a) oldest
- (b) middle
- (c) youngest

- 5) Rock unit IX is:

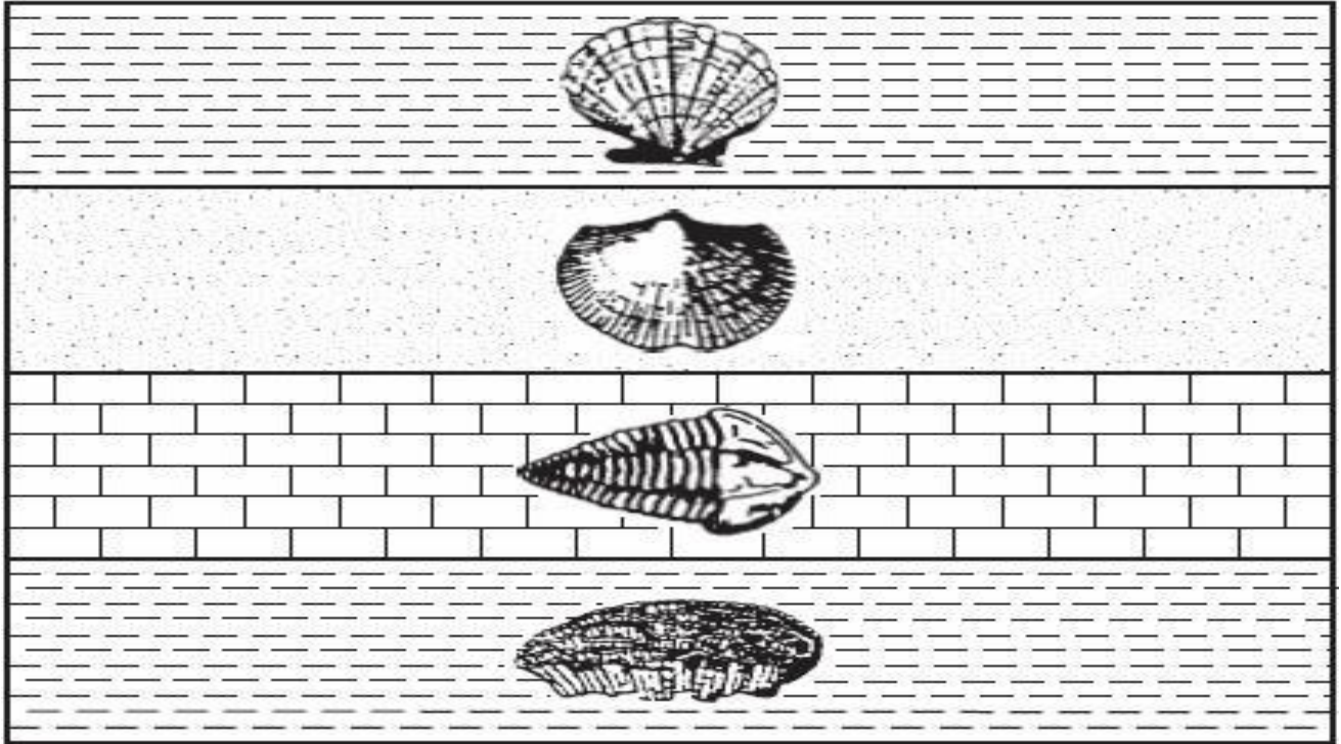
- (a) oldest
- (b) middle
- (c) youngest

- 6) Based on the fossils shown in the limestone and shale layers above, state the type of environment in which these sedimentary rocks were deposited.

- Desert &/or river bed
- Lava &/or Magma
- Marine &/or Ocean water
- Swamp &/or Lagoon



- 7) Assuming that these rock layers have not been overturned, which fossil is in the layer that was formed most recently?



(A)



(B)



(C)

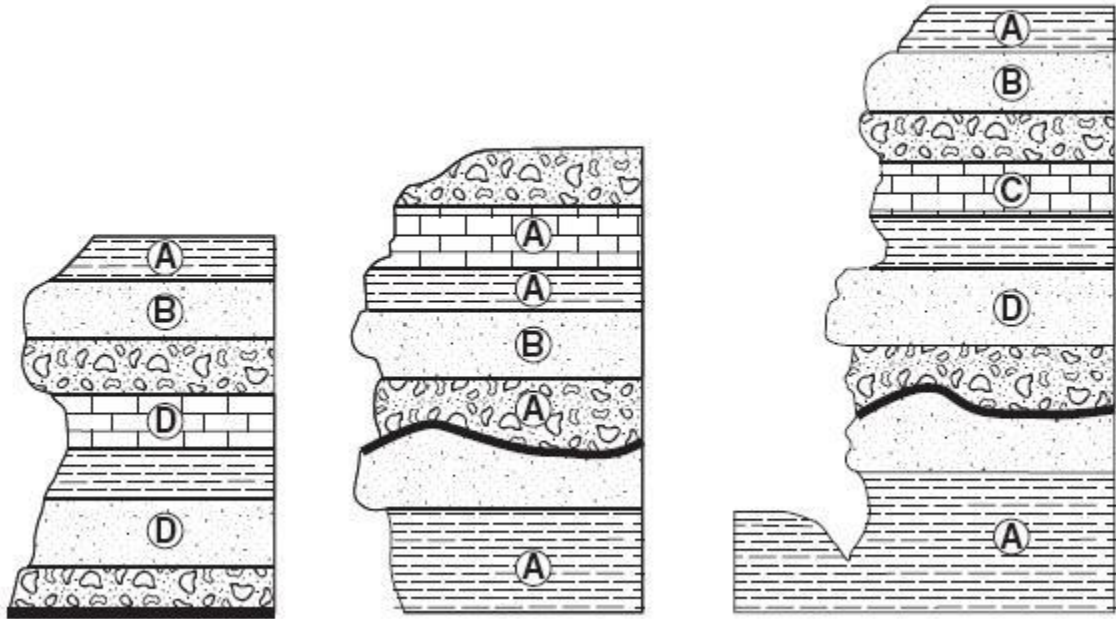


(D)

- 8) If shell fragments are found in a rock sample, it is most likely that the rock formed
- A from magma
 - B in shallow water
 - C on a glacier
 - D on a mountain slope

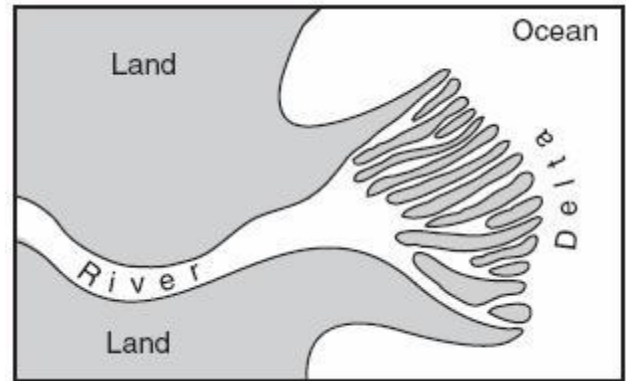
- 9) Rocks are classified as igneous, metamorphic, or sedimentary according to
- A their color
 - B their shape
 - C how they formed
 - D the minerals they contain

The cross sections below represent three widely separated outcrops of exposed bedrock. Letters A, B, C, and D represent fossils found in the rock layers.

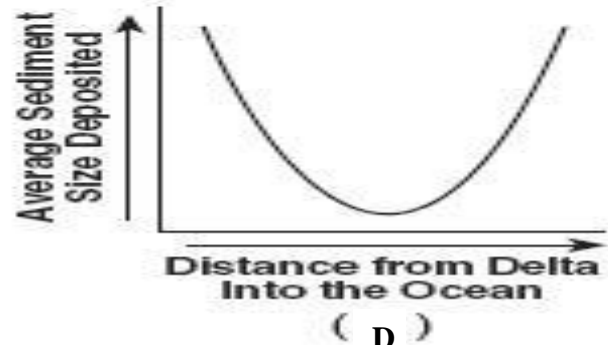
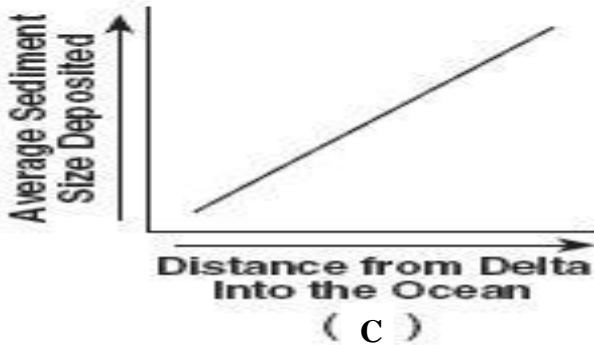
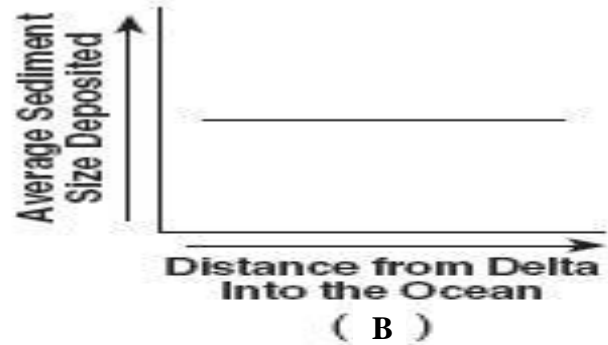
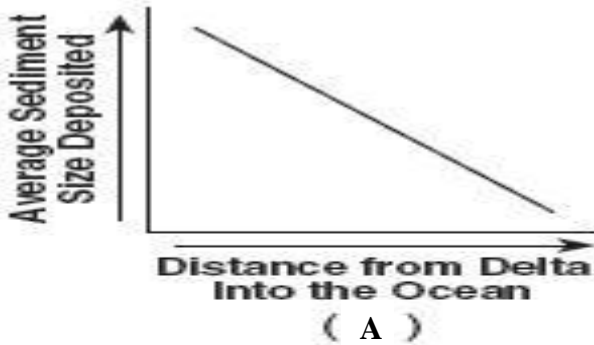


- 10) Which fossil appears to have the best characteristics of an index fossil?
- A A
 - B B
 - C C
 - D D
- 11) A chemical property of a mineral is evident if the mineral
- A breaks easily when struck with a hammer
 - B bubbles when acid is placed on it
 - C is easily scratched by a fingernail
 - D reflects light from its surface
- 12) In which type of rock is the most common?
- A Igneous
 - B Metamorphic
 - C Sedimentary
 - D Volcanic

The map, to the right, shows a river emptying into an ocean, producing a delta.



13) Which graph best represents the relationship between the distance from the river delta into the ocean and the average size of sediments deposited on the ocean floor?



14) Which statement is true of all rocks?

- A Rocks are composed of minerals.
- B Rocks are formed in layers.
- C Rocks contain fossils.
- D Rocks contain organic material.

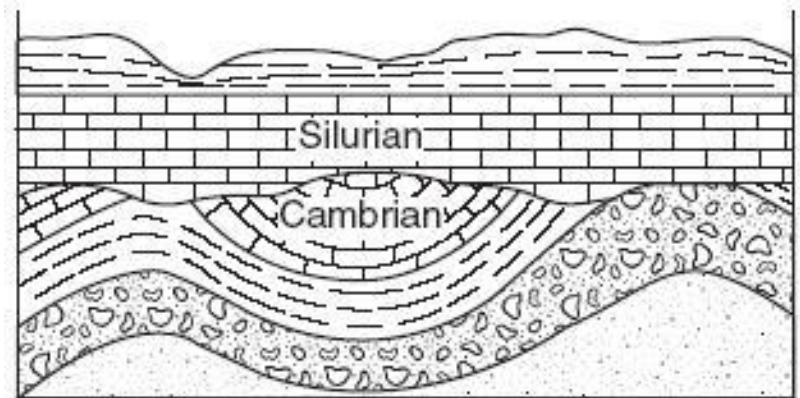
15) A stream flowing at a velocity of 250 centimeters per second is transporting sediment particles ranging in size from clay to cobbles. Which transported particles will be deposited by the stream if its velocity decreases to 100 centimeters per second?

- A cobbles, only
- B cobbles and some pebbles, only
- C cobbles, pebbles, and some sand, only
- D cobbles, pebbles, sand, silt, and clay

- 16) Which igneous rock, when weathered, could produce sediment composed of the minerals potassium feldspar, quartz, and amphibole?
- A Andesite
 - B Basalt
 - C Gabbro
 - D Granite

The geologic cross section shows the geologic age of two rock layers separated by an unconformity.

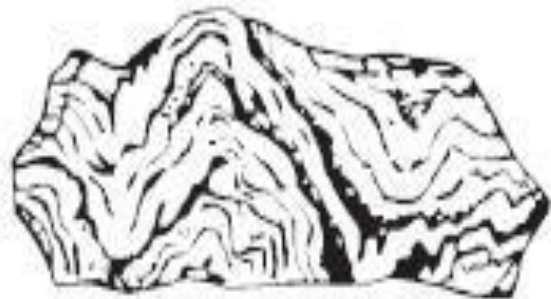
- 17) The unconformity at the bottom of the Silurian rock layer indicates a gap with the minimum time, of about 47 millions of years in the geologic time record. What is the gap called?
- A Angular conformity
 - B Disconformity
 - C Nonconformity
 - D Volcanic conformity



- 18) Which statement is true of all rocks?
- A Rocks are composed of minerals.
 - B Rocks are formed in layers.
 - C Rocks contain fossils.
 - D Rocks contain organic material.

The rock diagram shown has a foliated texture and contains the minerals amphibole, quartz, and feldspar arranged in coarse-grained bands.

- 19) Which rock is shown to the right?
- A Dunite
 - B Gneiss
 - C Quartzite
 - D Slate



- 20) All rocks are composed of
- A Cells
 - B Fossils
 - C Metals
 - D Minerals

- 21) In which type of rock is the most abundant?
- A Igneous
 - B Metamorphic
 - C Sedimentary
 - D Volcanic

22) Igneous rocks are formed by

- A Cementation
- B Sedimentation
- C Volcanic activity
- D Weathering

23) The photograph shows an igneous rock. What is the origin and rate of formation of this rock?

- A Plutonic with slow cooling
- B Plutonic with rapid cooling
- C Volcanic with slow cooling
- D Volcanic with rapid cooling



24) In which type of rock are fossils generally found?

- A Igneous
- B Metamorphic
- C Sedimentary
- D Volcanic

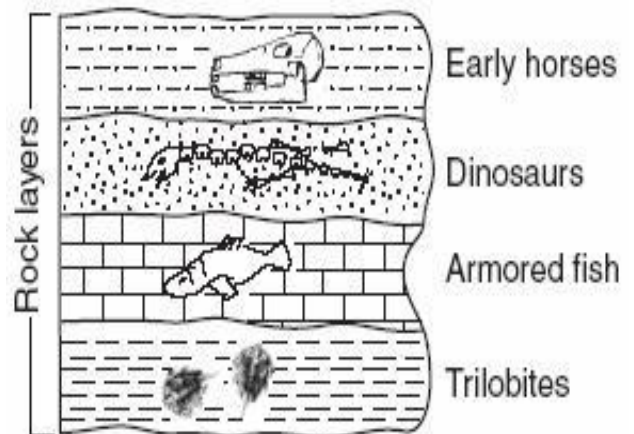
25) Which energy resource is renewable?

- A coal
- B fuel oil
- C natural gas
- D wind

The cross section shows fossils and the rock layers in which they are found. Crustal movement has not displaced the rock layers.

26) Which fossil is considered the oldest in the cross section shown?

- A armored fish
- B dinosaurs
- C early horses
- D trilobites



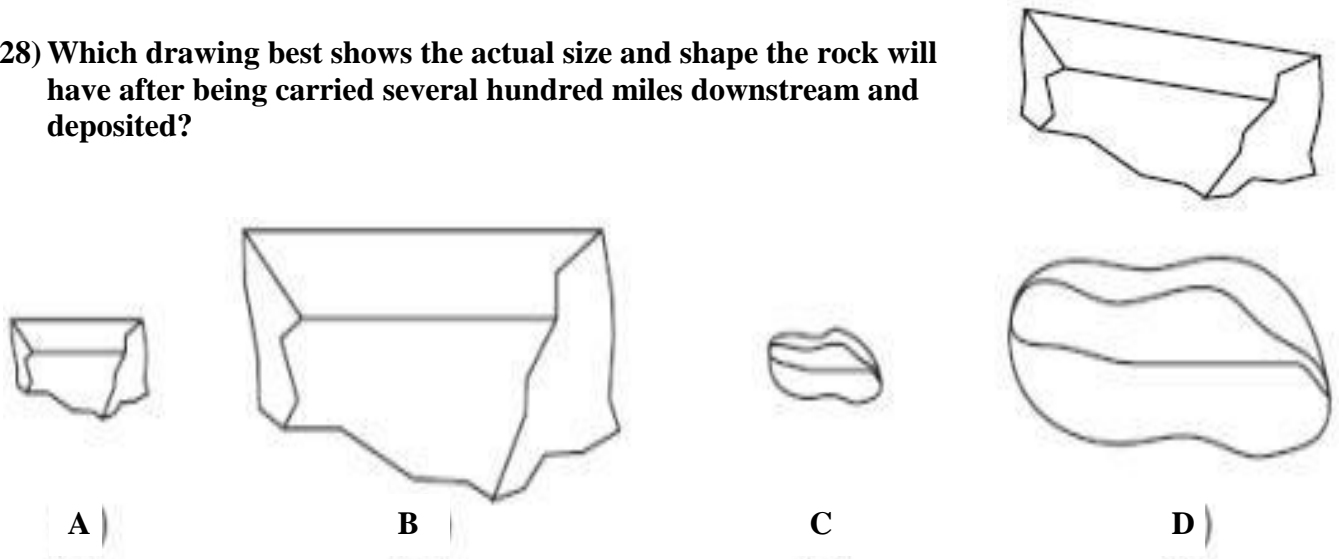
(Not drawn to scale)

27) Evidence that living things have evolved over hundreds of millions of years can be found in

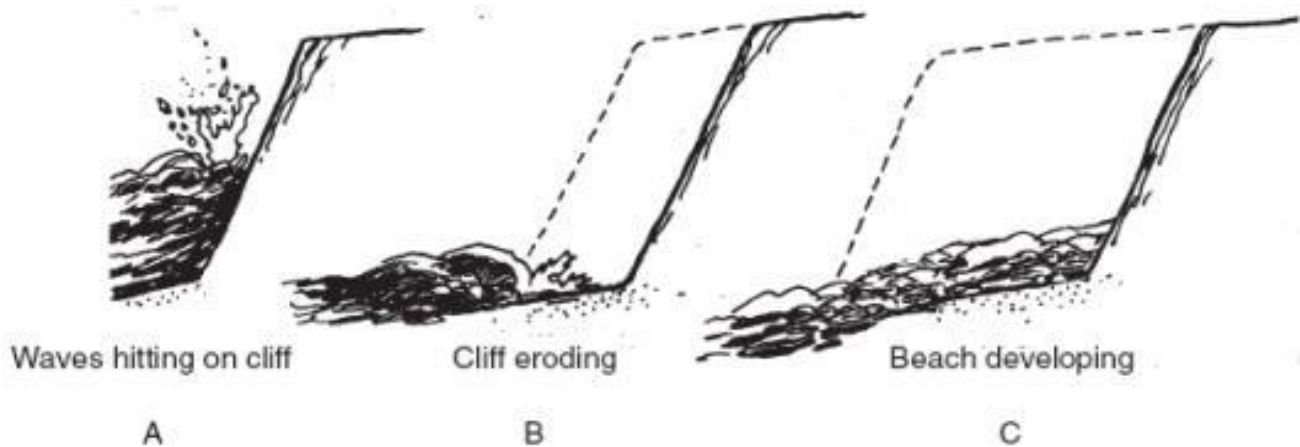
- A chemicals in human hair
- B particles in the air
- C rocks containing fossils
- D tree rings from recently logged trees

The drawing shows the original size and shape of a rock sample before it is thrown into a rapidly moving stream.

28) Which drawing best shows the actual size and shape the rock will have after being carried several hundred miles downstream and deposited?



The diagram below shows three stages in the formation of a beach.



29) Looking at the diagrams above, which process is mostly responsible for the breaking down of the rock cliff into sand-sized sediment?

- A Faulting
- B Folding
- C Precipitation
- D Weathering

30) Which process could lead directly to the formation of pumice rock?

- A deposition of quartz sand
- B explosive eruption of lava from a volcano
- C metamorphism of unmelted rock material
- D precipitation of minerals from evaporating seawater

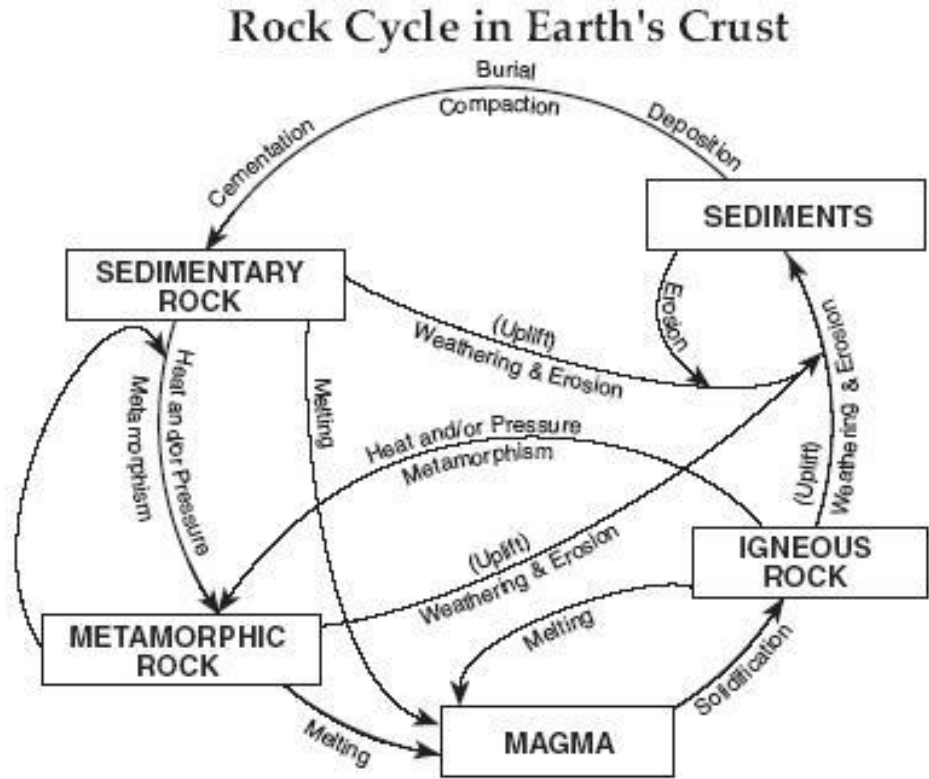
The diagram shows the rock cycle in Earth's crust. Use this rock cycle diagram to complete the next 3 questions below.

31) According to the Rock cycle diagram the Method of Formation of melting and solidification forms?

- A Magma
- B Igneous Rx
- C Sedimentary Rx
- D Metamorphic Rx

32) According to the Rock cycle diagram the Method of Formation of deposition, compaction, and cementation forms?

- A Sediments
- B Igneous Rx
- C Sedimentary Rx
- D Metamorphic Rx

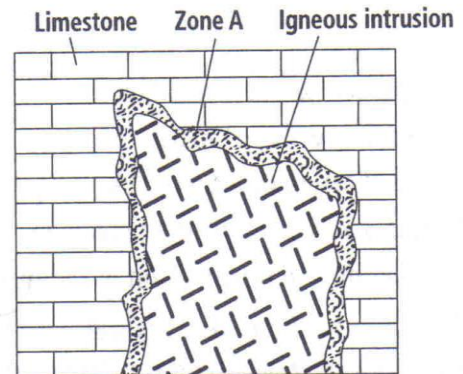


33) According to the Rock cycle diagram the Rock Type: Metamorphic Rocks form from?

- A heat and/or pressure/metamorphism
- B melting
- C Metamorphic Rx
- D uplift/ Weathering & Erosion

34) The geologic cross section to the right shows limestone that was intruded by an igneous body. Part of the limestone (zone A) was heated intensely but was not melted. Which type of rock most likely formed in zone A?

- A Gneiss
- B Marble
- C Obsidian
- D Slate

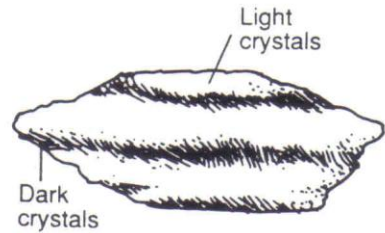


35) Granite can metamorphoses into ___?

- A Gneiss
- B Marble
- C Quartzite
- D Slate

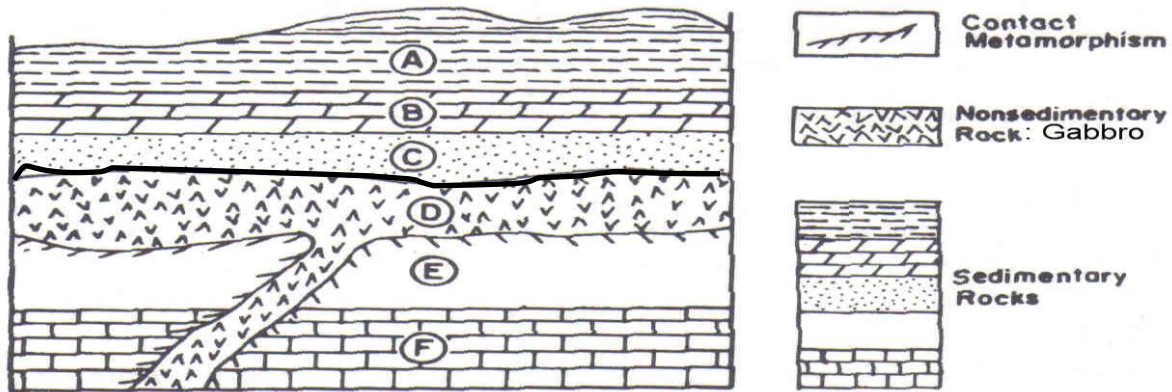
- 36) Obsidian's glassy texture indicates that it formed from molten material that cooled
- A Quickly, deep below Earth's surface.
 - B Quickly, on Earth's surface.
 - C Slowly, deep below Earth's surface.
 - D slowly, on Earth's surface
- 37) A lava flow rock that we will call "SAMPLE B" is a dark-colored, crystalline rock that formed when molten material cooled and solidified quickly on the surface of Earth. Rock sample B is classified as an
- A Extrusive igneous rock with a coarse texture and a felsic composition.
 - B Extrusive igneous rock with a fine texture and a mafic composition.
 - C Intrusive igneous rock with a fine texture and a mafic composition.
 - D Intrusive igneous rock with a coarse texture and a felsic composition.
- 38) Sandstone is a ____ sedimentary rock having clastic, medium-grained size fragments of sand.
- A Detrital
 - B Chemical
 - C Biochemical

- 39) The appearance of the metamorphic rock in the diagram indicates that it should be classified as which one
- A Foliated
 - B Non-foliated
 - C Recrystallize



- 40) This type of metamorphism resulting from high temperature and pressure that affects large mountainous regions.
- A Contact
 - B Eclogite
 - C High Pressure
 - D Regional (Barrovian)
- 41) The man (known as the father of geology) who provided strong evidence for the Law of Superposition was ____?
- A Bobby Gneiss
 - B James Hutton
 - C John Granite
 - D N.L. Bowen

Base your answers to the next the NEXT 4 questions on your knowledge of Earth Science, and the diagram below. The diagram represents a geologic cross section consisting of various rocks mostly sedimentary, which have not been overturned.



42) Identify Rock layer F in the diagram above

- A Dolostone
- B Limestone
- C Sandstone
- D Shale

43) According to the Law of Superposition, indicate which layer is the oldest layer from the diagram above?

- A A
- B C
- C D
- D F

44) Looking at the diagram above, fossils would least likely be found in rock layer ___?

- A A
- B C
- C D
- D F

45) According to the Law of Superposition, look at the diagram above and indicate which layer come first Letter "E" or Letter "D"?

- A E
- B D
- C you cannot tell
- D neither

- 46) Which rock is sedimentary in origin and formed as a result of chemical processes?
- A breccia
 - B dolostone/limestone
 - C granite
 - D shale
- 47) This type of metamorphism occurs when rocks come into contact with molten rock
- A Barrovian
 - B Contact
 - C High Pressure
 - D Hydrothermal
- 48) This type of metamorphism resulting from high temperature and pressure that affects a large mountainous region.
- A Contact
 - B Eclogite
 - C High Pressure
 - D Regional (Barrovian)
- 49) The ORIGINAL rock (parent rock) before metamorphism is called?
- A Intrusion
 - B Lithification
 - C Protolith or Country rock
 - D Sill
- 50) A geologist was asked to identify two rocks composed of calcite. One rock appeared to be sedimentary, but the other showed evidence of having undergone metamorphism. Based on this information, the two rocks could be?
- A granite and gneiss
 - B limestone and marble
 - C quartz and marble
 - D shale and slate