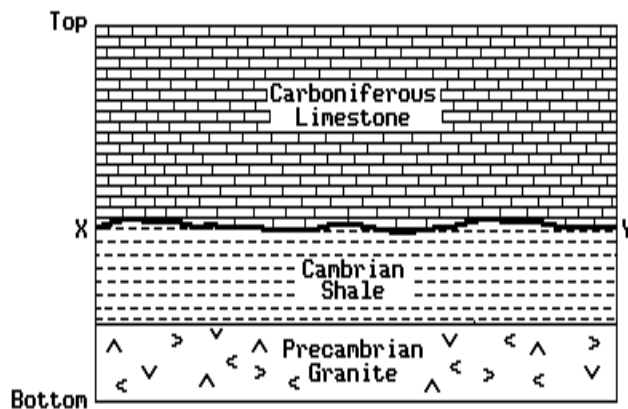


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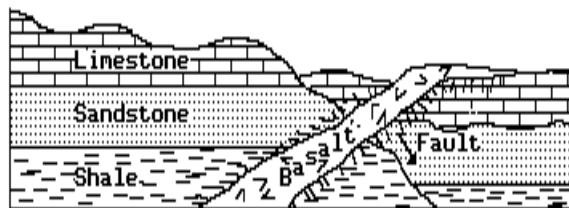
- 1) According to the *Earth Science Reference Tables*, between which two cities in New York State would the oldest surface bedrock be found?
- A) Jamestown and Rochester  
 B) Plattsburgh and Watertown  
 C) Utica and Binghamton  
 D) Syracuse and Albany
- 2) During which period was most of the surface bedrock that separates the Adirondacks from the Catskills formed? [Refer to the *Earth Science Reference Tables*.]
- A) Triassic  
 B) Ordovician  
 C) Jurassic  
 D) Precambrian
- 3) The diagram below shows a cross-sectional view of part of the Earth's crust.



What does the unconformity (buried erosional surface) at line *XY* represent?

- A) proof that no deposition occurred between the Cambrian and Carboniferous periods  
 B) overturning of the Cambrian and Carboniferous rock layers  
 C) a time gap in the rock record of the area  
 D) an area of contact metamorphism
- 4) According to the *Earth Science Reference Tables*, studies of the rock record suggest that
- A) humans first appeared at the time of the intrusion of the Palisades sill  
 B) the period during which humans have existed is very brief compared to geologic time  
 C) evidence of the existence of humans is present over much of the geologic past  
 D) the earliest humans lived at the same time as the dinosaurs

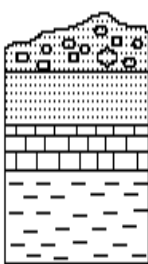
- 5) The diagram below represents a cross section of the Earth's crust showing rock units and a fault. The rock layers are not overturned.



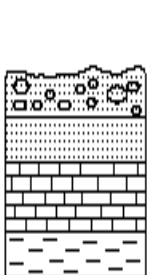
Which rock unit is the youngest?

- A) shale  
 B) sandstone  
 C) limestone  
 D) basalt
- 6) Why are ancient volcanic ash deposits important to geologists?
- A) They form resistant rock layers containing fossils.  
 B) They are easily dated using carbon-14.  
 C) They serve as good geological time makers.  
 D) They indicate major areas where earthquakes occurred.
- 7) Living corals are found in warm shallow seas. Coral fossils have been found in the sedimentary rocks of Alaska. These findings suggest that
- A) ocean currents carried the coral to Alaska  
 B) coral usually develops in cold climates  
 C) Alaska's cold climate fossilized the coral  
 D) Alaska once had a tropical marine environment
- 8) For which segment of the Earth's geologic history are fossils rarely found?
- A) Mesozoic  
 B) Cenozoic  
 C) Paleozoic  
 D) Precambrian
- 9) Which feature in a rock layer is older than the rock layer?
- A) mineral veins  
 B) igneous intrusions  
 C) rock fragments  
 D) faults
- 10) Unless a series of sedimentary rock layers has been overturned, the bottom rock layer usually
- A) is the oldest  
 B) contains the greatest variety of minerals  
 C) contains fossils  
 D) has the finest texture
- 11) Trilobite fossils found in shale bedrock in the Albany, New York, area indicate that this area once
- A) was covered by a large forest  
 B) had many land animals  
 C) had iron ore deposits  
 D) was covered by an ocean

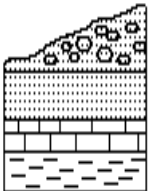
- 12) According to the *Earth Science Reference Tables*, which rock is most likely the oldest?
- conglomerate containing the tusk of a mastodon
  - sandstone containing fossils of flowering plants
  - shale containing trilobite fossils
  - siltstone containing dinosaur footprints
- 13) What characteristics of fossils are most useful in correlating sedimentary rock layers?
- limited geographic distribution and limited to a particular rock formation
  - wide geographic distribution but limited to a particular rock formation
  - wide geographic distribution and found in many rock formations
  - limited geographic distribution but found in many rock formations
- 14) Which two forms of life existed together on the Earth during the same time period? [Refer to the *Earth Science Reference Tables*.]
- dinosaurs and mastodons
  - trilobites and birds
  - flowering plants and trilobites
  - mastodons and flowering plants
- 15) The fossil record indicates that most of the plants and animals that lived on Earth in the past
- lived on land
  - have become extinct
  - appeared during the Cambrian Period
  - became index fossils
- 16) Index fossils have usually formed from organisms which had a
- narrow geographic distribution and existed for a long time
  - wide geographic distribution and existed for a long time
  - wide geographic distribution and existed for only a short time
  - narrow geographic distribution and existed for only a short time
- 17) According to the *Earth Science Reference Tables*, which of the following cities is located on the youngest bedrock?
- |              |               |
|--------------|---------------|
| A) Watertown | C) Binghamton |
| B) Albany    | D) Syracuse   |
- 18) The diagram below represents cross sections of three rock outcrops approximately 100 kilometers apart. What would be the best method of correlating the rock layers of each outcrop?
- A**



**B**

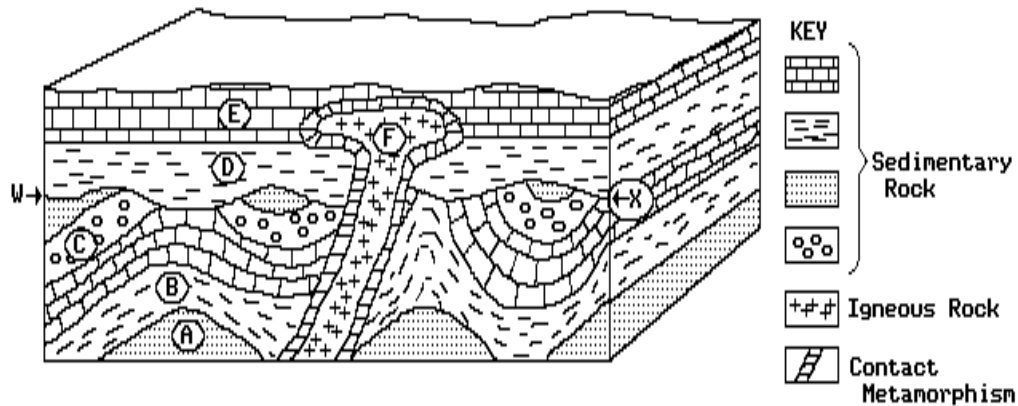


**C**


- comparing rock types
  - comparing index fossils
  - comparing thickness of rock layers
  - comparing mineral composition
- 19) According to the *Earth Science Reference Tables*, which event occurred at the time of the Allegheny Orogeny?
- the development of birds and mammals
  - the development of primitive aquatic plants
  - the extinction of many kinds of land animals
  - the extinction of many kinds of marine animals
- 20) An unconformity between two sedimentary layers is most likely produced by
- uplift followed by extensive erosion, submergence, and deposition
  - a period of extrusive vulcanism followed by another period of extrusive vulcanism
  - continuous sedimentation in a deep basin over a long period
  - the deposition of gravel followed by the deposition of sand and silt
- 21) For which geologic period are no fossils found in New York State?
- |               |             |
|---------------|-------------|
| A) Silurian   | C) Devonian |
| B) Ordovician | D) Permian  |
- 22) Geologists have subdivided geologic time into units based on
- rock type
  - erosion rates
  - fossil evidence
  - landscape development
- 23) Trilobite fossils from different time periods show small changes in appearance. These observations suggest that the changes may be the result of
- a variety of geological processes
  - the gradual disintegration of radioactive substances
  - evolutionary development
  - periods of destruction of the geological record

Questions 24 through 28 refer to the following:

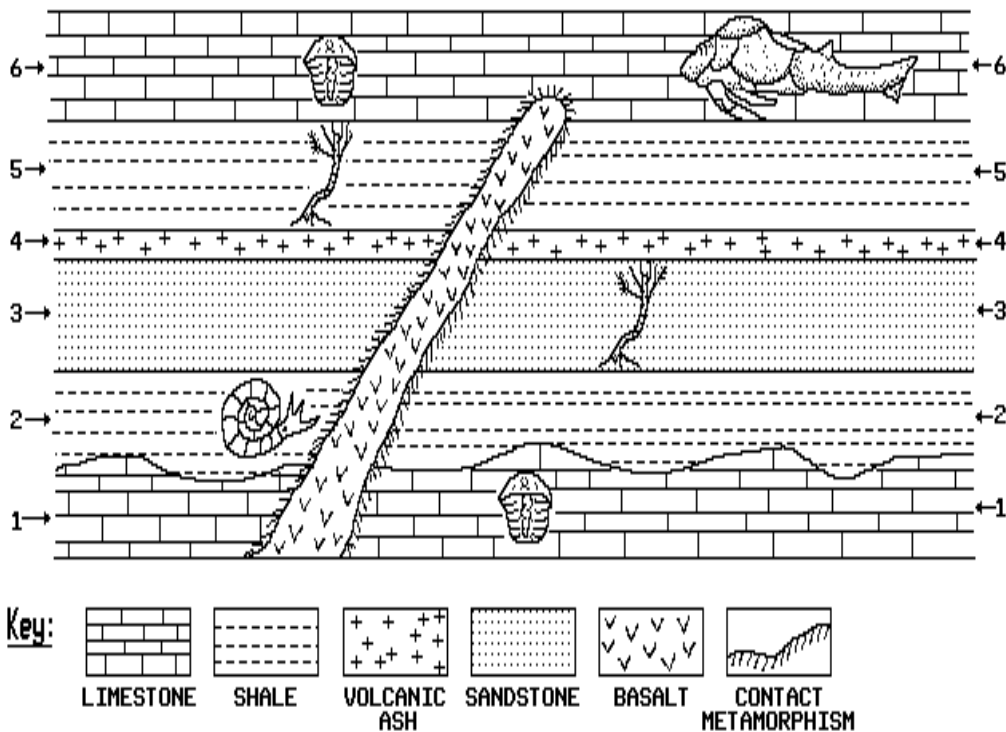
The diagram below represents a geologic cross section in which overturning has not occurred.



- 24) What evidence in the rock layers indicates that the formation of igneous rock *F* occurred after rock layer *E* was in place?
- A) the zone of contact metamorphism between rock *F* and rock layer *E*  
 B) the unconformity between rock *F* and rock layer *E*  
 C) the presence of extrusive igneous rock below rock layer *E*  
 D) the presence of radioactive minerals in rock *F*
- 25) Which rock most likely is the oldest?
- A) *D*      B) *B*      C) *F*      D) *A*
- 26) Which feature is represented by line *WX*?
- A) a former erosional surface  
 B) a fault  
 C) an area of metamorphism  
 D) an igneous intrusion
- 27) When did the folding of rock layer *B* most likely occur?
- A) after the deposition of rock layer *D*  
 B) before the deposition of rock layer *A*  
 C) after the deposition of rock layer *C*  
 D) after the deposition of rock layer *E*
- 28) Fossils are *least* likely to be found in which rock?
- A) *E*      B) *C*      C) *F*      D) *D*

Questions 29 through 31 refer to the following:

The diagram below represents a cross section on the Earth's crust showing several rock layers containing marine fossils. Overturning has not occurred. The diagram is not to scale.



**Models of Fossils:**



ARMORED FISH



ECHINODERMS  
(CRINOIDS)



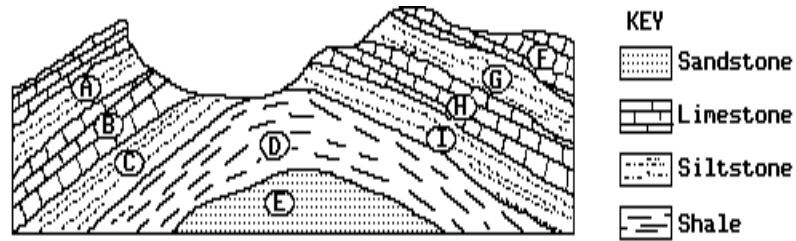
MOLLUSKS



TRILOBITES

- 29) Why is layer 4 likely to be a good time marker?
- Volcanic ash is usually a unique gray color.
  - Volcanic ash can usually be dated with carbon-14.
  - Volcanic ash is usually rapidly deposited over a large area.
  - Volcanic ash usually contains index fossils.
- 30) Which best describes the order of events for the formation of this section of the Earth's crust?
- deposition of rock layers 1, 2, 3, 4, and 5; intrusion of basalt; deposition of rock layer 6
  - deposition of rock layers 1, 2, 3, 4, 5, and 6; intrusion of basalt
  - deposition of rock layers 1, 2, 3; intrusion of basalt; deposition of rock layers 4, 5, and 6
  - intrusion of basalt; deposition of rock layers 1, 2, 3, 4, 5, and 6
- 31) Which is the best explanation for the irregular surface between layers 1 and 2?
- Layer 1 was partially eroded before 2 was deposited.
  - Layer 1 was folded after 2 was deposited.
  - Volcanic actions pushed layer 1 up before 2 was deposited.
  - Pressure from the layers above pushed layer 2 into layer 1.

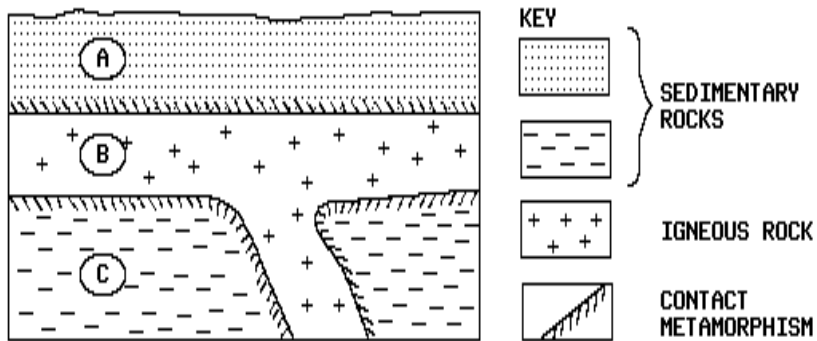
32) The diagram below represents a cross section of an eroded fold that has not been overturned.



If rock layer *A* is of Devonian Age, rock layer *E* could be of

- A) Triassic Age                      B) Tertiary Age                      C) Carboniferous Age                      D) Cambrian Age

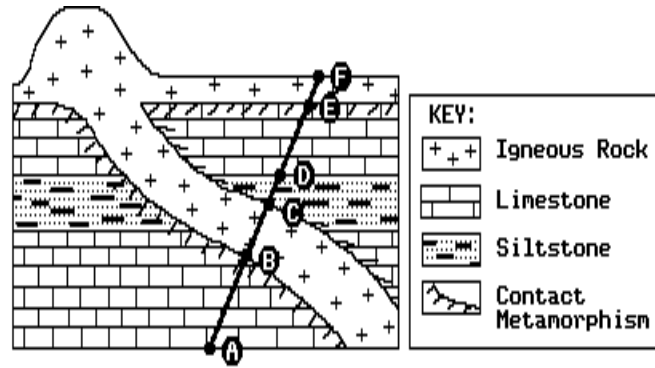
33) The diagram below represents layers of rock.



Rock layer *A* is inferred to be older than intrusion *B* because

- A) layer *B* is located between layer *A* and layer *C*                      C) parts of layer *C* were altered by intrusion *B*  
 B) parts of layer *A* were altered by intrusion *B*                      D) layer *A* is composed of sedimentary rocks

34) The diagram below represents a cross section of a portion of the Earth's crust.

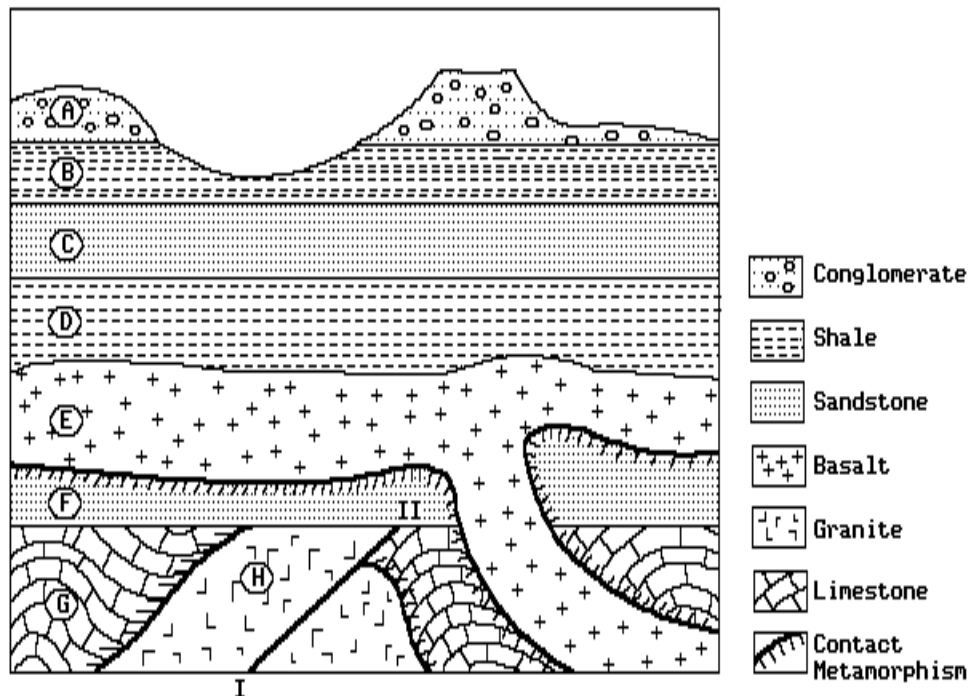


Which graph best indicates the relative age of the rock units along line *AF*?



Questions 35 through 37 refer to the following:

The diagram below represents a geologic cross section of a portion of the Earth's crust consisting of various sedimentary and nonsedimentary rock units, indicated by letters *A* through *H*, which have not been overturned. Line **I-II** represents a fault.



- 35) What is the relative age of the fault (line I-II)?
- A) younger than rock unit *H* but older than rock unit *F*
  - B) younger than rock unit *G* but older than rock unit *H*
  - C) younger than rock unit *F* but older than rock unit *H*
  - D) younger than rock unit *F* but older than rock unit *G*
- 36) Evidence of a buried erosional surface (unconformity) is found at the top of unit
- A) *A*
  - B) *D*
  - C) *G*
  - D) *C*
- 37) What is the age sequence of the rock units, from oldest to youngest?
- A) *H, G, E, F*
  - B) *G, H, F, E*
  - C) *F, E, G, H*
  - D) *E, F, G, H*