

Name: _____

Date: _____ Period: _____

Geologic Time

Earth Science

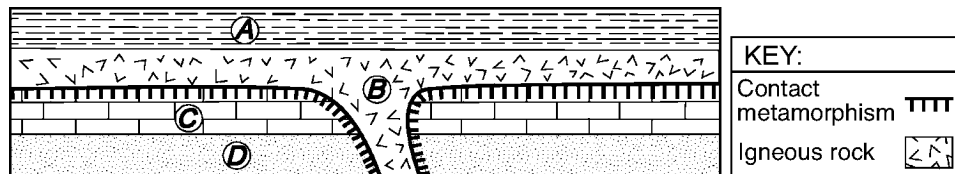
Geologic Time

Practice Test

Directions: For questions 1-25 record your answers on the scantron provided. Some questions may require the use of the 2011 Edition Reference Tables for Physical Setting/Earth Science.

- 1) Volcanic ash is a good geologic time marker because the ash
- 1) remains in the atmosphere for millions of years
 - 2) spreads evenly in all compass directions
 - 3) is deposited rapidly over a large area
 - 4) is easily weathered and eroded
- 2) Organisms that later became good index fossils lived over a
- 1) wide geographic area and existed for a short geologic time
 - 2) limited geographic area and existed for a long geologic time
 - 3) wide geographic area and existed for a long geologic time
 - 4) limited geographic area and existed for a short geologic time

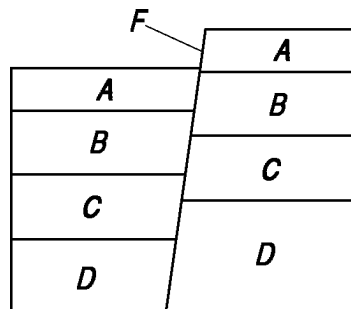
3) The cross section below shows four rock units, A, B, C, and D.



Which rock unit is *youngest* in age?

- 1) A
 - 2) B
 - 3) C
 - 4) D
- 4) According to the fossil record, which of the following sequences correctly represents the evolution of life on Earth?
- 1) soft-bodied organisms → fish → amphibians → mammals
 - 2) soft-bodied organisms → amphibians → fish → mammals
 - 3) fish → soft-bodied organisms → mammals → amphibians
 - 4) fish → amphibians → mammals → soft-bodied organisms

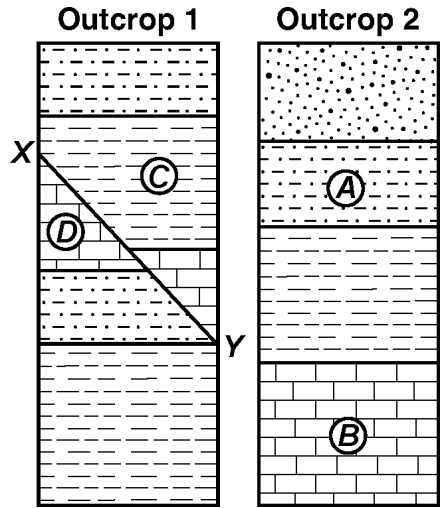
5) The cross section below shows rock layers A, B, C, D, and fault F. The rock layers have not been overturned.



Which sequence places the rock layers and fault in order from *oldest* to *youngest*?

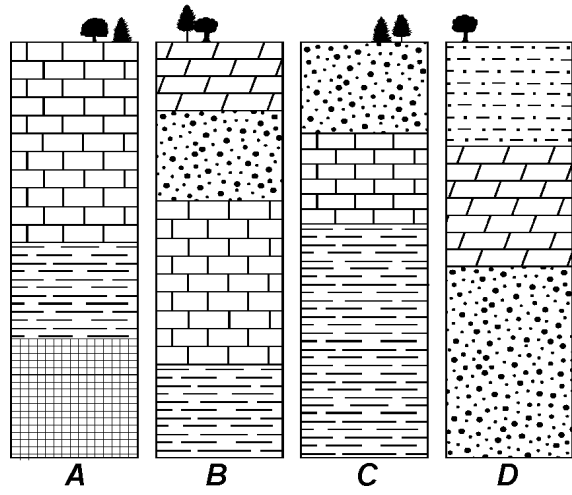
- 1) A → B → C → D → F
- 2) D → C → B → A → F
- 3) F → A → B → C → D
- 4) F → D → C → B → A

- 6) The cross sections below represent two widely separated bedrock outcrops, 1 and 2. Letters *A*, *B*, *C*, and *D* identify some rock layers. Line *XY* represents a fault. The rock layers have not been overturned.



Which lettered rock layer is the *youngest*?

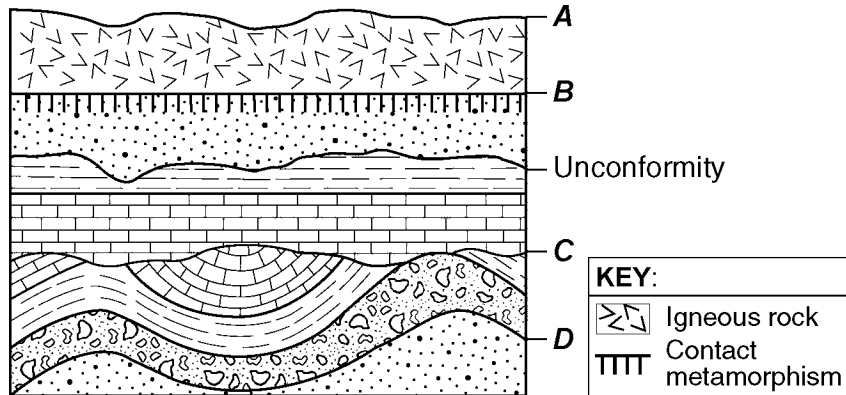
- 1) *A* 2) *B* 3) *C* 4) *D*
- 7) Columns *A*, *B*, *C*, and *D* below represent outcrops, of the same sequence of bedrock layers, found within 20 miles of each other. The rock layers have not been overturned.



Which surface bedrock is *youngest* in age?

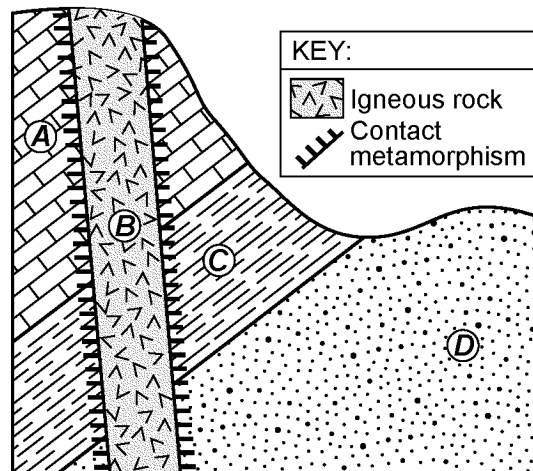
- 1) siltstone 2) dolostone 3) limestone 4) sandstone
- 8) In the New York State rock record, there is no bedrock from the Permian Period. Which two other entire geologic periods have no sediment or bedrock in the New York State rock record?
- 1) Paleogene and Neogene Periods 3) Triassic and Jurassic Periods
 2) Cretaceous and Quaternary Periods 4) Mississippian and Pennsylvanian Periods

- 9) The cross section below represents several rock units within Earth's crust. Letter A represents Earth's surface. Letters B, C, and D indicate boundaries between rock units. One of the unconformities is labeled.



Which lettered boundary is most likely another unconformity?

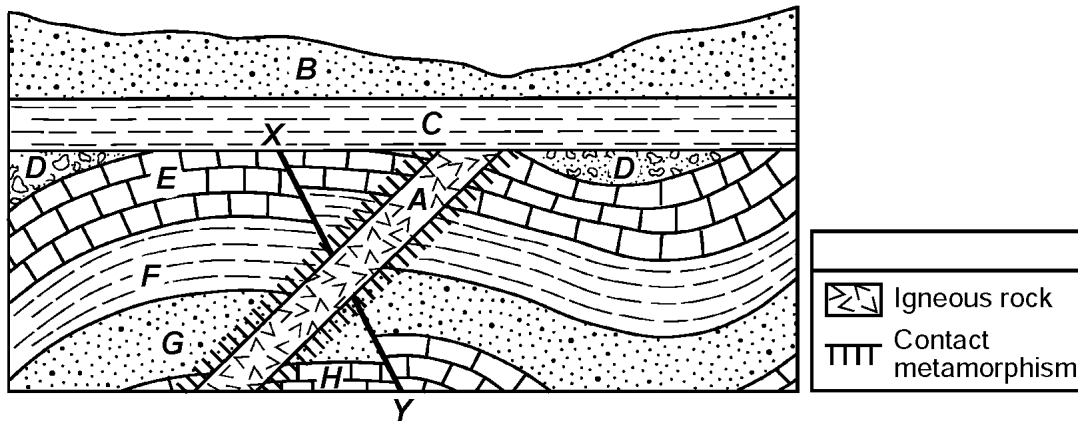
- 1) A 2) B 3) C 4) D
- 10) What is the approximate percentage of Earth's history during which humans have existed, compared to the age of Earth?
 1) 0.04% 2) 1.79% 3) 4.65% 4) 8.32%
- 11) The bedrock cross section below contains rock formations A, B, C, and D. The rock formations have not been overturned.



What sequence represents the relative ages of these rock formations, from *oldest* to *youngest*?

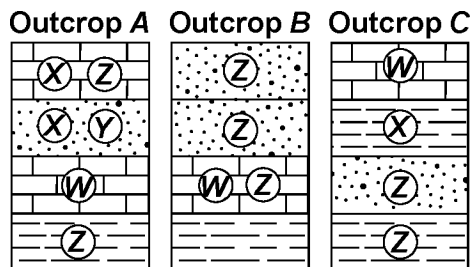
- 1) D → C → A → B 2) B → D → C → A 3) D → B → A → C 4) B → A → C → D
- 12) Which life-form existed on Earth for the *shortest* period of time?
 1) placoderm fish 2) dinosaurs 3) trilobites 4) ammonoids

- 13) The cross section below represents the bedrock structure of a section of Earth's crust. Letters A through H represent rock units. Line XY represents a fault. The rock layers have not been overturned.



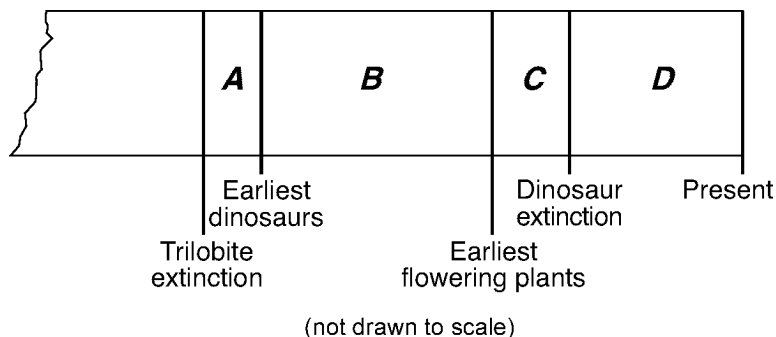
When did faulting along line XY occur?

- 1) after the formation of rock units E and F
 2) after the intrusion of rock unit A
 3) after the deposition of rock units B, C, and D
 4) before the formation of rock units G and H
- 14) The cross sections below represent three widely separated bedrock outcrops labeled A, B, and C. Letters W, X, Y, and Z represent fossils found in the rock layers.



Which fossil could best be used as an index fossil?

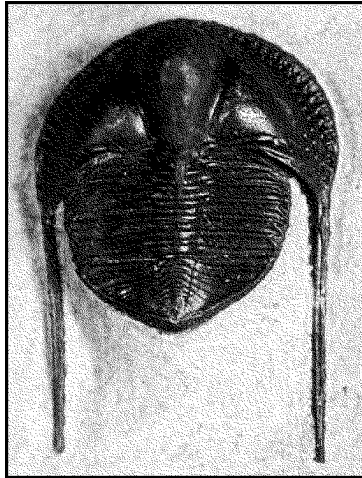
- 1) Z
 2) Y
 3) W
 4) X
- 15) The diagram below is a portion of a geologic timeline. Letters A through D represent the time intervals between the labeled events, as estimated by scientists.



Fossil evidence indicates that the *earliest* birds developed during which time interval?

- 1) A
 2) B
 3) C
 4) D

16) The photograph below shows a New York State index fossil.



What is the *best* classification of this fossil, and during which geologic time period did the organism that produced this fossil exist?

1) Classification: Trilobite
Geologic time period: Ordovician

3) Classification: Coral
Geologic time period: Permian

2) Classification: Trilobite
Geologic time period: Permian

4) Classification: Coral
Geologic time period: Ordovician

17) Most of the oceanic oxygen that began to enter Earth's atmosphere in the early Proterozoic Era was probably produced by

1) formation of silicate rocks

3) photosynthesis by cyanobacteria

2) impact events on Earth's surface

4) outgassing from volcanoes

18) The mass extinction of the dinosaurs, approximately 65.5 million years ago, is inferred by most scientists to have been caused by

1) an impact event occurring on Earth's surface

2) a large energy surge from the surface of the Sun

3) the occurrence of a major ice age

4) earthquakes occurring along crustal plate boundaries

19) During which geologic epoch do scientists infer that the earliest grasses *first* appeared on Earth?

1) Eocene

2) Oligocene

3) Pleistocene

4) Holocene

20) According to the *Earth Science Reference Tables*, if the radioactive element in a rock sample is potassium-40, which resulting decay product would be present?

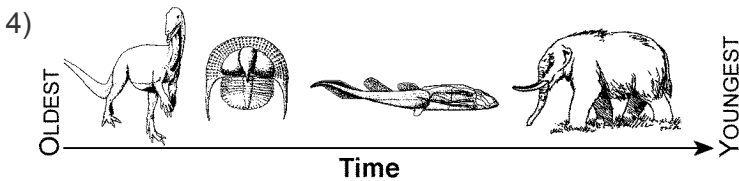
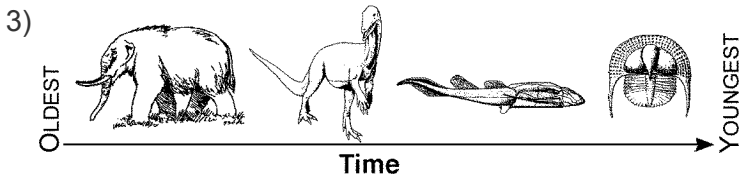
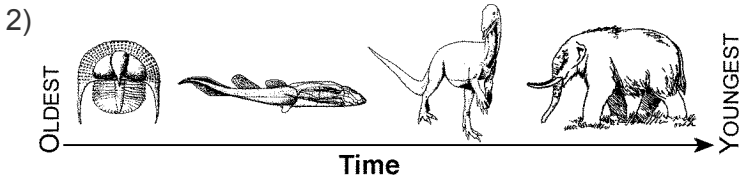
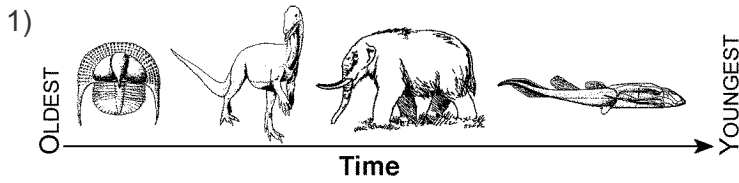
1) Sr^{87}

2) N^{14}

3) Ar^{40}

4) C^{12}

21) Which sequence of New York State index fossils shows the order in which the organisms appeared on Earth?



22) Which of the following radioactive isotopes takes the *greatest* amount of time to decay?

- 1) potassium-40 2) carbon-14 3) rubidium-87 4) uranium-238

23) According to the *Earth Science Reference Tables*, which radioactive element has a half-life of 4.5×10^9 years?

- 1) rubidium-87 2) carbon-14 3) uranium-238 4) potassium-40

24) According to the *Earth Science Reference Tables*, which radioactive element would be most useful for determining the age of clothing that is thought to have been worn 2,000 years ago?

- 1) potassium-40 2) uranium-238 3) carbon-14 4) rubidium-87

25) According to the *Earth Science Reference Tables*, during which period did the Acadian Orogeny occur?

- 1) Ordovician 2) Devonian 3) Cambrian 4) Silurian