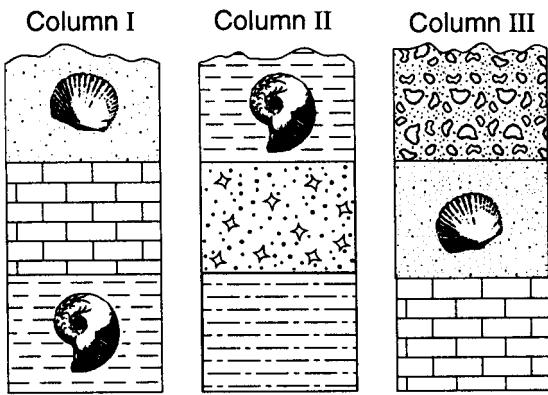


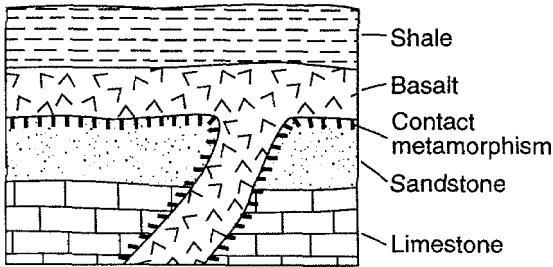
1. The three geologic columns below represent the rock layers in outcrops located several miles apart. The rock layers have not been overturned. Two different index fossils are shown.



Of the rock layers found in these three outcrops, which layer was probably formed most recently?

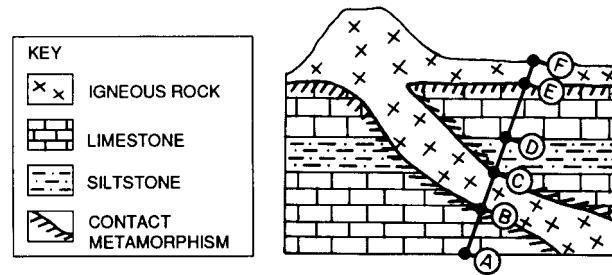
- | | | | |
|-----|--|-----|--|
| (1) | | (3) | |
| (2) | | (4) | |

2. Which statement correctly describes an age relationship in the geologic cross section below?



- (1) The sandstone is younger than the basalt.
- (2) The shale is younger than the basalt.
- (3) The limestone is younger than the shale.
- (4) The limestone is younger than the basalt.

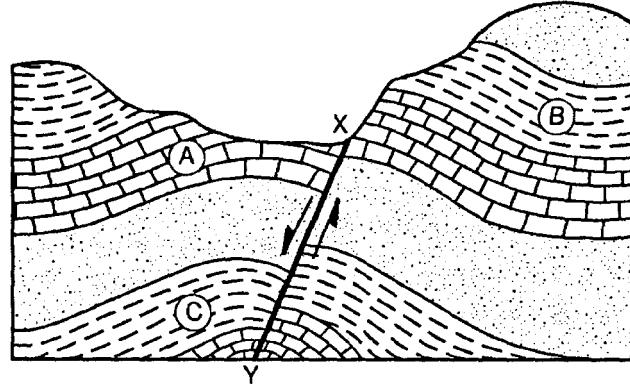
3. The diagram below represents a cross section of a portion of the Earth's crust.



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

- | | | | |
|-----|--|-----|--|
| (1) | | (3) | |
| (2) | | (4) | |

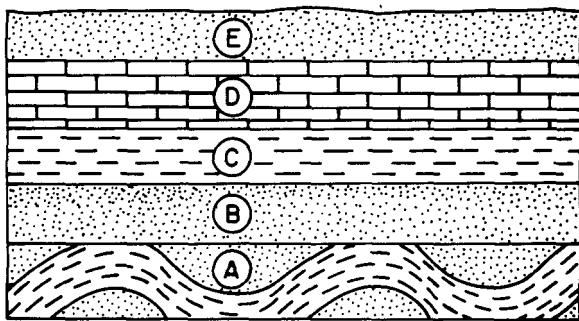
4. The diagram below represents a cross section of a portion of the Earth's crust.



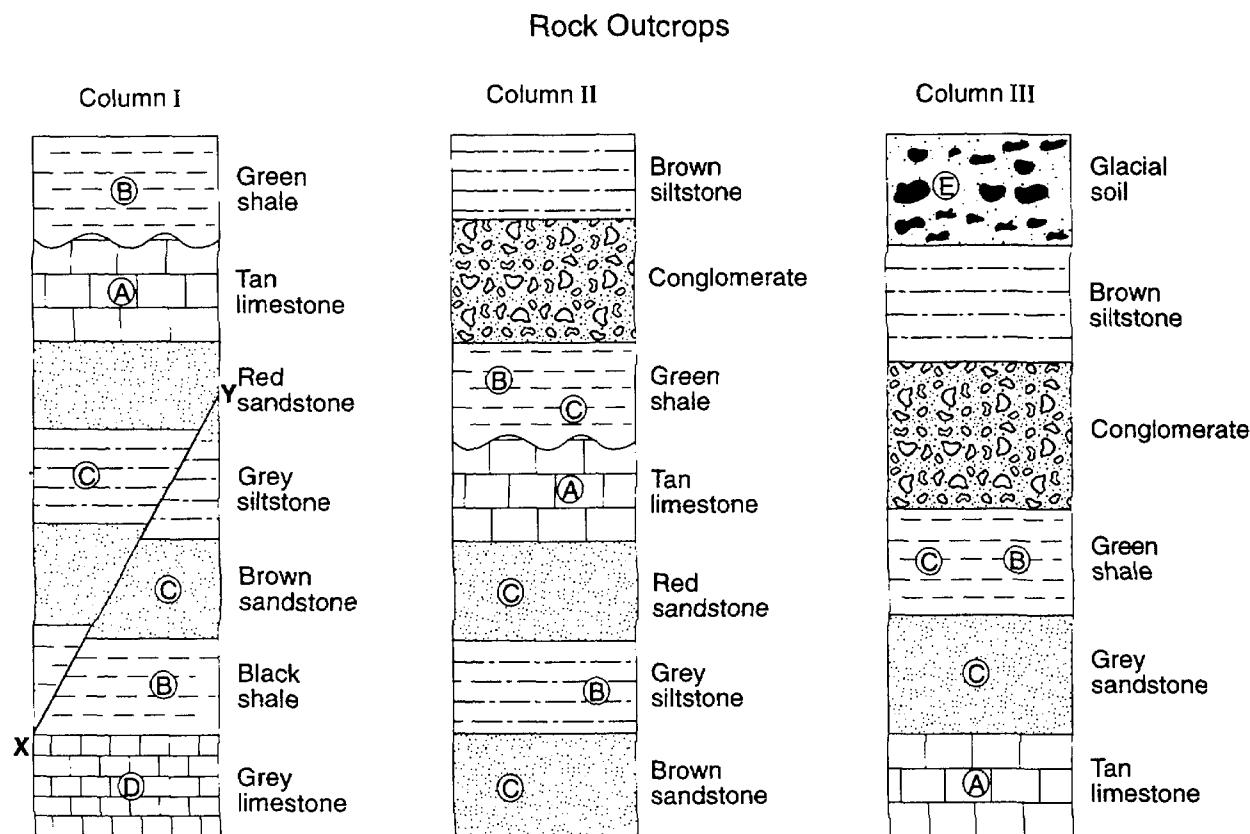
Which geologic event is the most recent?

- (1) erosion of the surface of rock layer A
- (2) folding of rock layer B
- (3) deposition of rock layer C
- (4) faulting along line XY

5. In the geologic cross section shown below, between which two layers is part of the rock record most likely missing?



Base your answers to questions 6 through 10 on the *Earth Science Reference Tables*, the diagram below, and your knowledge of Earth science. The diagram shows three geologic columns representing widely separated rock outcrops. Letters A through E represent fossils found in the outcrops. Line XY represents a fault in column I. The layers have not been overturned.



6. What is the oldest layer shown?

- (1) glacial soil (2) brown sandstone (3) tan limestone (4) grey limestone

7. When did fault XY, located in column I, most likely occur?

- (1) before the formation of the grey limestone (3) during the formation of the black shale
 (2) during the formation of the grey siltstone (4) after the formation of the red sandstone

8. Which rock would most likely be produced by the metamorphism of the grey limestone?

- (1) quartzite (2) slate (3) marble (4) gneiss

9. The wavy line located between the green shale and the tan limestone layers in columns I and II most likely represents

- (1) contact metamorphism (2) a volcanic ash layer (3) a buried erosional surface (4) an igneous intrusion

10. Fossil A, in the tan limestone layer, is a fossil of the first known coral. This tan limestone layer was most likely deposited during which geologic time interval?

- (1) Precambrian (2) Paleozoic (3) Mesozoic (4) Cenozoic