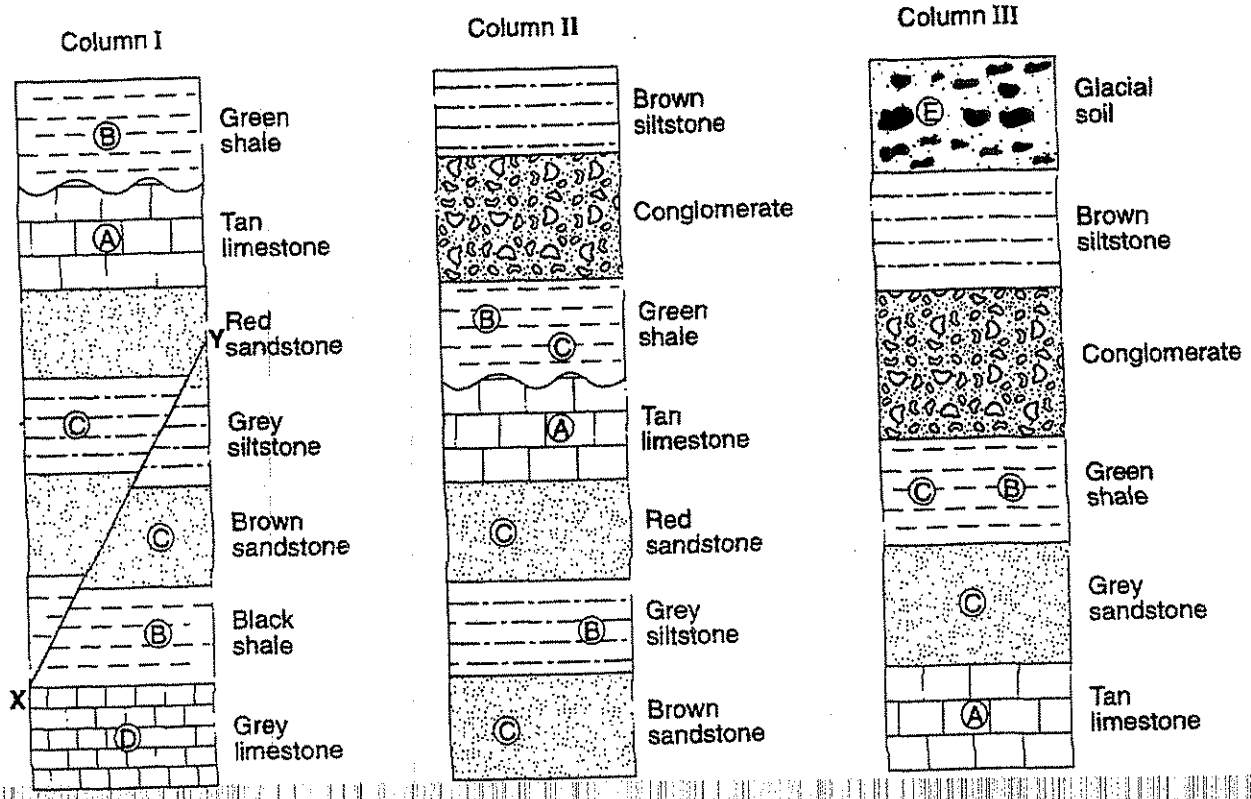
Base your answers to questions 1 through 5 on the *Earth Science Reference Tables*, the diagram below, and your knowledge of Earth science. The diagram shows three geologic columns representing widely separated rock outcrops. Letters *A* through *E* represent fossils found in the outcrops. Line *XY* represents a fault in column I. The layers have not been overturned.

Rock Outcrops



1. What is the oldest layer shown?
(1) glacial soil (2) brown sandstone (3) tan limestone (4) grey limestone

2. When did fault *XY*, located in column I, most likely occur?
(1) before the formation of the grey limestone
(2) during the formation of the grey siltstone
(3) during the formation of the black shale
(4) after the formation of the red sandstone

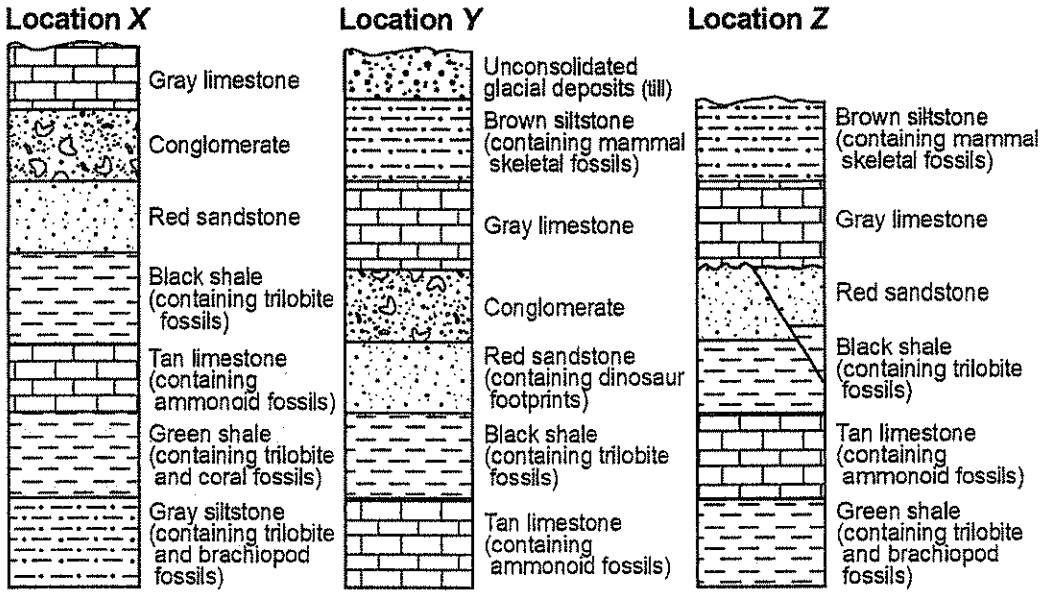
3. Which rock would most likely be produced by the metamorphism of the grey limestone?
(1) quartzite (2) slate (3) marble (4) gneiss

4. 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

5. 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

Questions 3 through 6 refer to the following:

he cross sections below show widely separated outcrops at locations *X*, *Y*, and *Z*.



3) Which rock layer is *oldest*?

A) tan limestone B) green shale C) gray siltstone D) brown siltstone

4) An unconformity can be observed at location *Z*. Which rock layer was most probably removed by erosion during the time represented by the unconformity?

A) brown siltstone B) conglomerate C) gray siltstone D) black shale

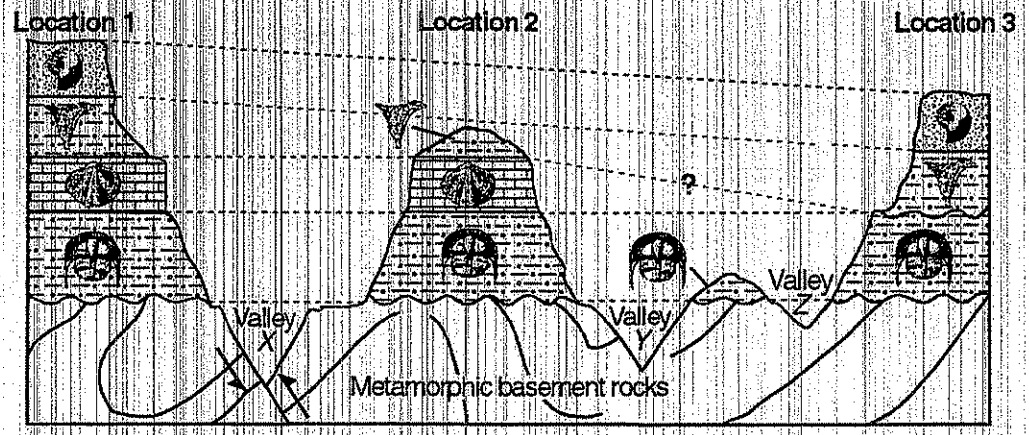
5) The fossils in the rock formations at location *X* indicate that this area was often covered by

A) desert sand B) tropical rain forests C) seawater D) glacial ice

6) At location *Y*, the boundary between the red sandstone and the black shale marks the

A) end of the Cenozoic Era
B) end of the Mesozoic Era
C) beginning of the Mesozoic Era
D) beginning of the Cenozoic Era

7) The geologic cross section below shows a view of rock layers at Earth's surface. The dashed lines connect points of the same age. Major fossils contained within each rock layer are shown. The valleys are labeled *X*, *Y*, and *Z*.



The sedimentary rock layers at the three locations can be most accurately correlated by comparing the

A) thickness of the sedimentary rock layers
B) minerals in the igneous rocks
C) fossils in the sedimentary rocks
D) foliation bands in the metamorphic basement rocks