

Second Hour Exam

Name: _____

Please answer all questions.

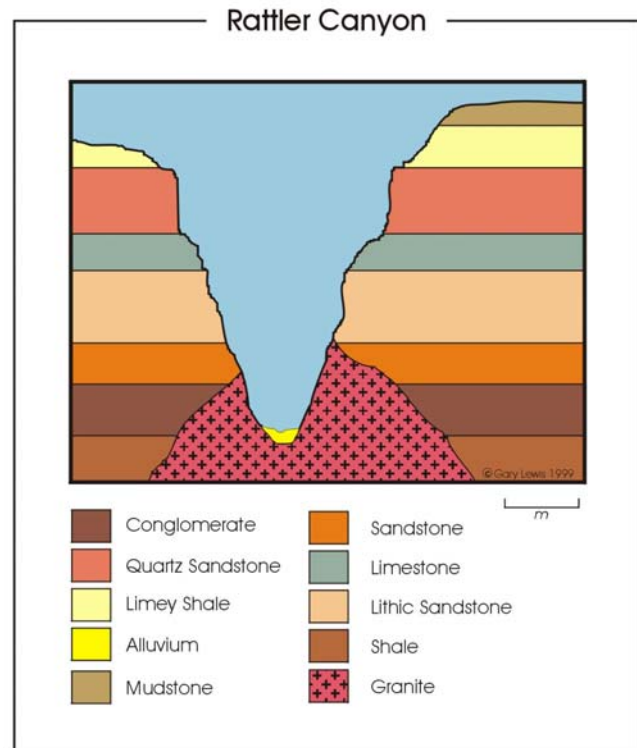
A gentle warning: I don't think that the answer to any of the questions is trivial. Only well reasoned answers will receive full credit.

1. How to Make Rocks

- a) Which processes transform sediment into sedimentary rock? (3 points)
- b) Gneiss (a metamorphic rock) can have the same chemical composition as granite (an igneous rock). Describe the differences in formation between the two rock types. How can you tell the difference in a sample? (4 points)
- c) How can you reconstruct the pressure and temperature conditions a rock was exposed to?

2. Relative Time

- a) Which fossils make good index fossils? Explain your answer.
(3 points)
- b) How did geologists come up with the geologic timescale? Why do so many species go extinct at the end of a geologic period?
(4 points)
- c) The figure to the right shows a series of sedimentary and igneous rocks. Number all the rock units and outline the geologic history of these rocks.
(3 points)



3. Connecticut's Geology

Trinity is located near the center of the Connecticut valley. Over the past 14 weeks you have seen many of the rocks that occur in the Connecticut Valley and the surrounding hills. Briefly describe the geologic history of the Connecticut Valley and describe the rocks (including their position in the valley) that allow us to reconstruct this part of Connecticut's geologic history.

4. Climate Change

- a) What evidence do we have that Connecticut was once covered by large glaciers? (2 points)
- b) What types of sediment is left behind by glaciers? Explain your answer. (3 points)
- c) What factors can influence global climate? (4 points)

5. Multiple Choice (2 points each)

- a) Soil horizons
- develop over thousands of years
 - form all simultaneously
 - can be used to classify soil types
 - all of the above
- b) The following are greenhouse gasses
- water vapor
 - nitrogen
 - oxygen
 - carbon dioxide
- c) Marine sediment
- is dominated by the remains of organisms (shells)
 - can receive significant additions of airborne dust
 - is dominated by quartz
 - all of the above
- d) Landslides are more likely to occur dafter extensive periods of rain because
- the shear strength of the sediment increases
 - the shear strength of the sediment decreases
 - the shear stress on the sediment increases
 - none of the above
- e) We know that the earth's inner core is solid because
- S-waves travel trough the outer core and are reflected off the inner core
 - free oscillations of the earth are best explained by the presence of a solid inner core
 - of the presence of the earth's magnetic field
 - of the presence of a seismic "Shadow Zone"