Geo 101, Fall 2000

Review Questions for Midterm Exam

SEDIMENTARY and METAMORPHIC ROCKS

THE EXAM WILL BE MONDAY 30 OCTOBER

OR TUESDAY 31 OCTOBER

These questions are to help you study for the exam. They are not to turn in. It will be helpful to work with another student or in small groups try to answer the review questions. If you can't find the answer in your notes or in the book, please come to office hours or email questions to the instructor.

The exam will be based on the review questions and the lecture notes. Note that some of the review questions are from the material in the text. The actual exam questions will be multiple choice (except for make-up exams).

You must take the exam in the lecture section for which you are registered. Any exceptions must be cleared with the instructor in advance.

SEDIMENTARY ROCK

Weathering

1. Weathering processes can be either mechanical or chemical. Please give a description or example of each type.

Detrital (Clastic) Sediment

2. List the 4 sizes of detrital (clastic) sediment. (Give the names for the loose material, not the rock made from it.) List from smallest to largest.

3. What are the most common minerals in beach sand? Why are these the most common? (Briefly)

4. Which agent carries the largest sediment: glaciers, water or wind?

5. Which agent sorts sediment best: glaciers, water or wind? Which doesn't sort it at all?

6. Which agent rounds sand grains the best: glaciers, water, or wind?

7. What is meant by stratification or bedding?

8. Please describe graded bedding. Explain one way that it is formed.

9. How is crossbedding formed? What landform has crossbedding? (Hint: sand.)

Chemical and Biological Sediment and Sedimentary Rock

10. Of what mineral is limestone made?

11. Of what mineral are seashells made? (clam shells, snail shells, etc.)

12. Of what mineral is chert made? By what organism is sedimentary chert made?

13. How are gypsum and rock salt formed?

14. From what is coal made?

Lithification

15. What does lithification mean? Please list and explain each of the three processes that lithify rock.

METAMORPHIC ROCKS

1. What are metamorphic rocks?

2. What happens to the minerals in a rock, when the rock is metamorphosed? (one word answer.)

3. Metamorphism is caused by various combinations of: 1) high temperature, 2) high pressure 3) directed pressure and 4) interaction with hot fluids. Hot fluids may be involved in all kinds of metamorphism. Which of the other factors cause each of the following effects?

    a. Which of these conditions causes dehydration of minerals? Give an example of this process.

    b. Which of these conditions causes minerals to hydrate (take on water)? Give an example of this process.

4. Directed pressure is indicated by rocks that are _____.

5. Think about these three things: high temperature, high pressure and directed pressure.

    a. What is contact metamorphism? Which (one or more) of the 3 things on the list are involved in contact metamorphism?

    b. What is burial metamorphism? Which (one or more) of the 3 things on the list are involved in burial metamorphism?

    c. What is regional metamorphism? Which (one or more) of the 3 things on the list are involved in regional metamorphism?

Handout on Metamorphic Rocks or Website Lecture Outline (notes)

6. Which of these rocks are foliated?

schist slate marble

gneiss phyllite quartzite

7. Which of the rocks listed above is metamorphosed limestone?

8. Which of the rocks listed above is metamorphosed sandstone?

9. List in order of grade (temperature) of metamorphism (lowest to highest):

schist gneiss slate phyllite

19. Continental shelves, slopes/canyons and the deep ocean have a variety of sedimentary environments. Please explain where each of the following is found and what kind of sediment or sedimentary rock it includes:

beach

reefs and carbonate banks

turbidity currents

calcareous ooze

siliceous ooze

clays (alone)

Question about chalk was also deleted.