

ESC 115 Physical Geology

Test 4

Fall, 2010

The first nine questions refer to the slides we will view together in class. Please use the space provided to answer the questions.

1. (4 pts) What is porosity? If the two jars have the same number and size marbles, which has greater porosity? Why?
2. (4 pts) What is the source of the irrigation water shown? How are the two figures related?
3. (4 pts) What is the water table? You may draw and label a picture if needed.
4. (6 pts) Why have the deserts circled formed?
5. (8 pts) The picture shown illustrates global patterns of air circulation. What are two effects? Give examples for each.

6. (6 pts) In the figure shown, red indicates warm water and blue is cold. What are two effects? What is El Nino ?
7. (6 pts) The graph shown is of water use in the United States. If you were managing a dam, how would you balance the needs of these users? What is at least one other group who may be significantly impacted by how you manage the water behind the dam?
8. (4 pts) The features shown form in caves. Explain how they form.
9. (8 pts) The table shown is of suppliers of petroleum to the U.S. In yellow are OPEC countries. Which of the countries are Arab? Why are Canada, Mexico, Saudi Arabia and Venezuela the top suppliers? Name one country with significant oil reserves not listed.
10. (8 pts) What is the greenhouse effect? Sketch and label it. What are two major greenhouse gases?

11. (6 pts) What are the three natural resources that were the main focus of the material for this test?
12. (4 pts) What is the difference between mechanical and chemical weathering? Given two examples of each.
13. (6 pts) What are the main processes in soil formation? Sketch and label a typical soil profile in a humid climate. How are a) rainforest and b) desert soil profiles likely to differ?
14. (6 pts) What happened at Lake Peigneur? How does it relate to oil exploration?
15. (6 pts) Sketch a confined aquifer, such as the Bighorn Basin, labelling the recharge and discharge areas, confining layer, and direction of flow. Why is Thermopolis Hot Spring hot?

16. (6 pts) Sketch an unconfined aquifer, such as at my home in Walnut Cove, NC, labelling the recharge and discharge areas, water table, probable spring location, and direction of flow.

17. (5 pts) What was a review question that you prepared for but was not asked. Answer it.

18. (5 pts) What is one way you think this course could be improved?