Student Assessment (Test) in Geology

Group Problem Solving

Work with your group to determine the answers to the following problems. Be careful to "carry your own weight" in the group as you will be evaluated for your participation! **Make sure you know the names of your group members before doing the last part of the test.**

1. What is the appropriate symbol to use for marking the parking garage on a topographic map? On the map provided, use this symbol to **photo revise** and mark the location of the new parking garage structure.

2. If you could discount elevation differences (or build a tunnel) how far would you have to walk to get to the science building? Explain how you determined this.

3. What is the difference in elevation between the bottom of the parking garage and Hunt Haught Hall? Explain how you determined this.

4. Identify the numbered rock samples below. What evidence did you use?

   Sample 1

   Sample 2

   Sample 3

   What does the red color in one of the samples indicate about the rock?

5. Using the correct rock symbols finish the core drill to the right:

6. If one mm on the core drill (in question 5) represents 1 ft of thickness on the General Section of the Monongahela Series. What portion of the section does it represent? (Bracket it on the General Sec.)

7. Would we find this section of the Monongahela Series exposed on campus? How did you determine this?

8. How much peat was necessary to form the Redstone Coal? How long did it take for that peat to accumulate? Explain your answer.

9. Is the Redstone Coal older or younger than the Pittsburgh Coal? How do you know? What is its geologic age (the name of the period in which they formed)?

10. Assuming none of the area on the topo map has been mined and the numbers are from core drillings of the Sewickly Coal. How much of it is under the Fairmont State campus? **Show your work:**

Isopach Map Thickness Interval	Avg Thickness of Isopach map Interval	Dots counted	Area represented by each Dot	Density constant for acre-foot of bituminous coal	Tons of Coal per isopach interval

Do you think this coal is still there? Explain why you might choose to or not to mine this coal?

Extra Credit: How much money would the owner of this coal receive if it were mined? Show your work