ESS 200 (Stapleton) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rock Dating Test, Version 3



Part 1: For questions 1-10, use relative dating strategies to order all of the lettered strata or igneous intrusions in **diagram 1**. Then complete the questions below for **diagram 1** only.

1. Which sample is barely older than **B**? \_\_\_\_\_

2. Which sample is barely older than **L**? \_\_\_\_\_

3. Which sample is barely older than **J**? \_\_\_\_\_

4. Which sample is barely older than **I**? \_\_\_\_\_

5. Which sample is barely older than **H**? \_\_\_\_\_

6. Which sample is barely younger than **B**? \_\_\_\_\_

7. Which sample is barely younger than **L**? \_\_\_\_\_

8. Which sample is barely younger than **J**? \_\_\_\_\_

9. Which sample is barely younger than **I**? \_\_\_\_\_

10. Which sample is barely younger than **H**? \_\_\_\_\_

Part 2: Assuming a half-life of 8 million years, find the ages of the igneous rock samples, below. You may use the graph on the back of this sheet.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample** | **Parent Atoms** | **Daughter Atoms** | **% of Parents remaining**  | **Age of rock in Millions of years** |
| A | 15 | 3 |   | 2 6 10 14 18 22 26 30 34 38 |
| D | 36 | 649 |   | 2 6 10 14 18 22 26 30 34 38  |
| C | 20 | 115 |   | 2 6 10 14 18 22 26 30 34 38  |
| E | 16 | 38 |   | 2 6 10 14 18 22 26 30 34 38  |
| U | 25 | 94 |   | 2 6 10 14 18 22 26 30 34 38  |
| L | 32 | 22 |   | 2 6 10 14 18 22 26 30 34 38  |
| R | 25 | 311 |   | 2 6 10 14 18 22 26 30 34 38  |
| S | 13 | 234 |   | 2 6 10 14 18 22 26 30 34 38  |

Part 3: Use your data from the table above, plus both of the diagrams from the top of the page, to determine possible age ranges for the rock strata or events below.

|  |  |
| --- | --- |
| **Sample or Event** | **Age of rock in Billions of years** |
| B | 0-2 2-6 6-10 10-14 14-18 18-22 22-26 26-30 30-34 34-38 |
| J | 0-2 2-6 6-10 10-14 14-18 18-22 22-26 26-30 30-34 34-38 |
| Appearance of fault in diagram 1 (left diagram) | 0-2 2-6 6-10 10-14 14-18 18-22 22-26 26-30 30-34 34-38 |
| Q | 0-2 2-6 6-10 10-14 14-18 18-22 22-26 26-30 30-34 34-38 |
| P | 0-2 2-6 6-10 10-14 14-18 18-22 22-26 26-30 30-34 34-38 |