ESS 200 (Stapleton)
Rock Dating Test, Version 3

Name: KEY

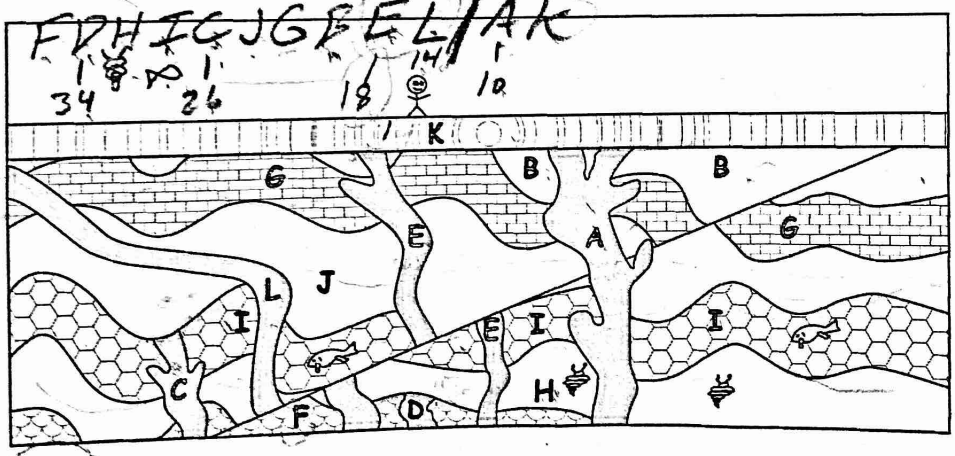
Part 1: Assuming a half-life of 8 million years, find the ages of the igneous rock samples, below. You may use the graph on the back of this sheet.

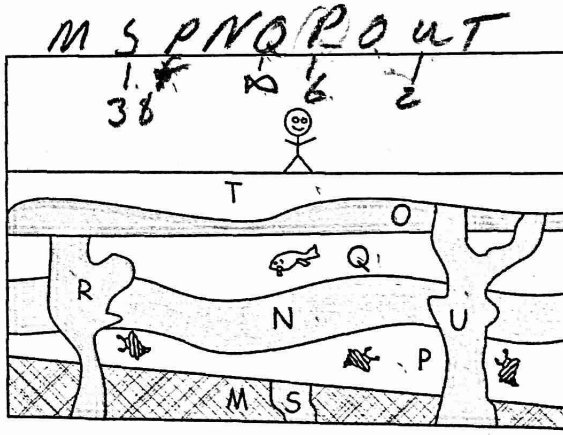
$\frac{P}{P+D} \times 100\% \quad \left(\frac{25}{59}\right)(100\%) =$

Sample	Parent Atoms	Daughter Atoms	% of Parents remaining	Age of rock in Millions of years									
A	25	34	42.4	2	6	10	14	18	22	26	30	34	38
D	13	234	5.3	2	6	10	14	18	22	26	30	34	38
C	36	306	10.5	2	6	10	14	18	22	26	30	34	38
E	25	94	21.0	2	6	10	14	18	22	26	30	34	38
U	16	3	84.2	2	6	10	14	18	22	26	30	34	38
L	20	47	29.9	2	6	10	14	18	22	26	30	34	38
R	16	11	59.3	2	6	10	14	18	22	26	30	34	38
S	20	518	3.7	2	6	10	14	18	22	26	30	34	38

Part 2: Order all of the lettered strata or igneous intrusions in **diagram 1**. In order to do this, you will need to use relative dating strategies AND some information from the table that you completed in part 1. After you have order the lettered samples, fill in the blanks below.

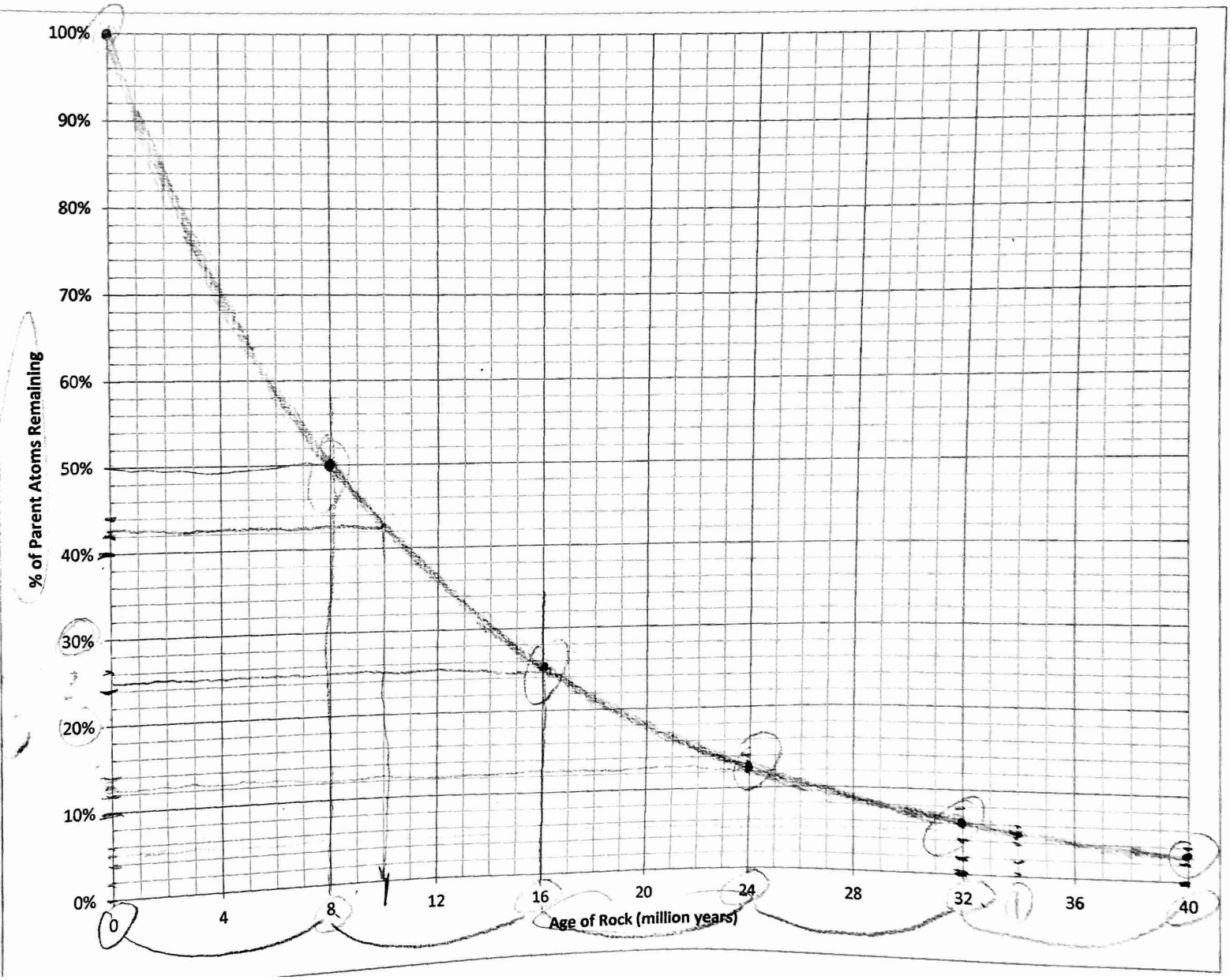
1. Which sample is barely older than C? I
2. Which sample is barely older than E? B
3. Which sample is barely older than D? F
4. Which sample is barely older than A? L
5. Which sample is barely older than G? J
6. Which sample is barely younger than C? J
7. Which sample is barely younger than E? L
8. Which sample is barely younger than D? H
9. Which sample is barely younger than A? K
10. Which sample is barely younger than G? B





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									
O	0-2	6-10	10-14	14-18	18-22	22-26	26-30	30-34	34-38	
B	0-2	2-10	10-18	26-34	34-40					
Appearance of fault in diagram 1 (left diagram)	0-2	2-6	6-10	14-18	18-22	22-26	26-30	30-34	34-38	
Q	0-2	2-10	10-18	18-26	34-40					
P	0-2	2-10	10-18	18-26	34-38					


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% of Parent Atoms Remaining
0
4
8
12
16
20
24
28
32
36
40
Age of Rock (million years)