

## Test for Electrophoresis Activity

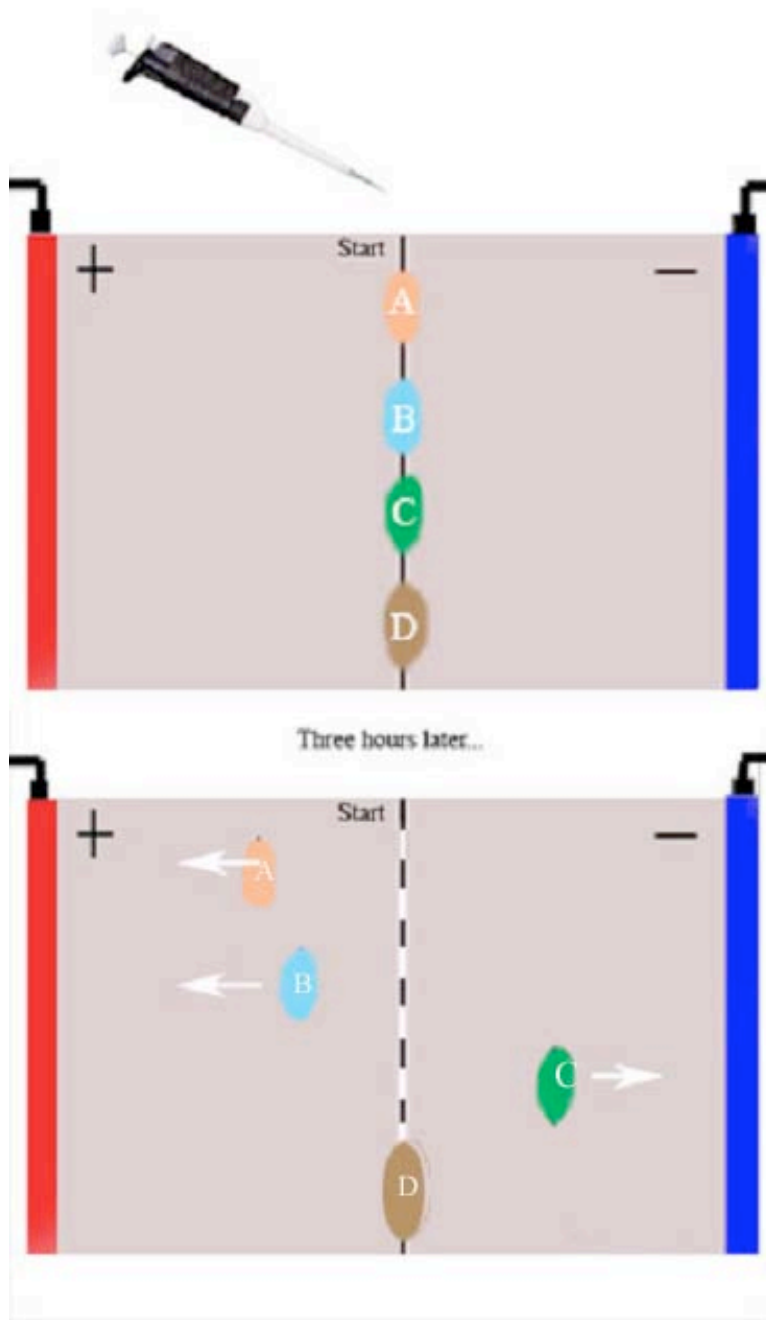
Name \_\_\_\_\_ Date \_\_\_\_\_

Teacher \_\_\_\_\_ Class \_\_\_\_\_

Check one:

Pretest

Posttest



1. A lab technician placed several drops of compounds A, B, C and D on the “start line” in the middle of an electrophoretic plate. Then she placed the plates in the buffer solution and turned the voltage “on” for one hour.

When she returned she turned the voltage “off” and examined the plate.

1a. What can she tell about compound A?

1b. Why might A have moved the farthest from the start line?

1c. List two reasons compound D might have stayed on the start line.

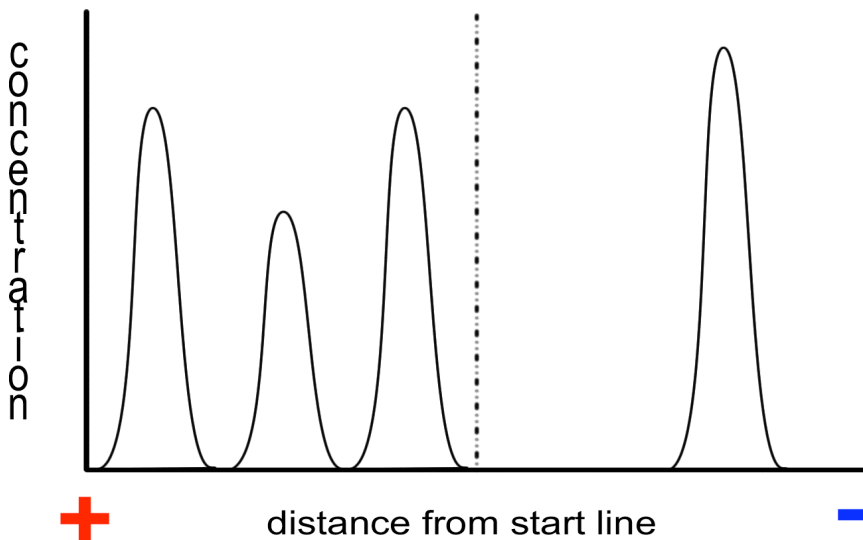
2. A lab technician produced a mixture of 2 proteins and 2 DNA fragments of different sizes.

Mixture to be separated
2 negatively charged DNA fragments of different sizes
2 proteins-no SDS used

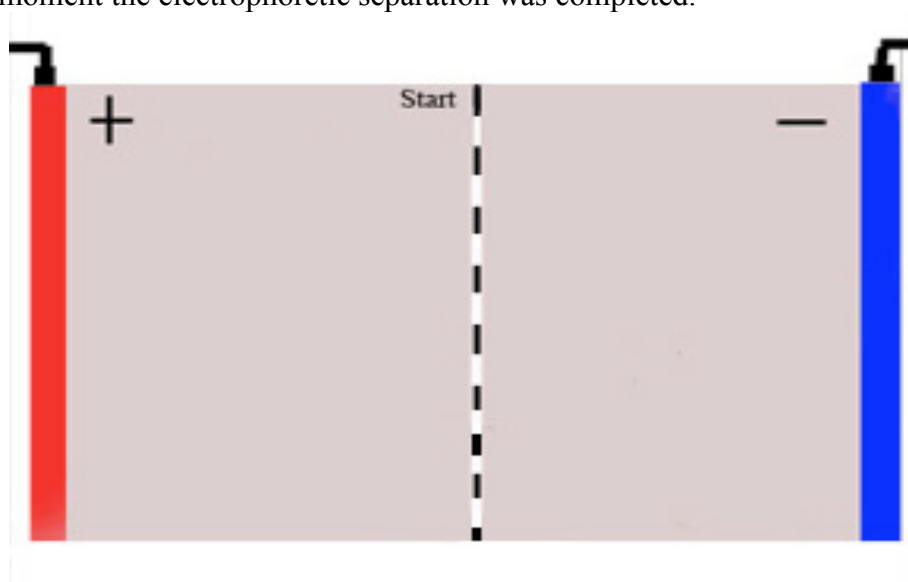
She placed the mixture on the dotted start line, ran the electrophoresis for an hour and then scanned the plate. Below are the results:

2a. On the picture below mark 2 peaks that could represent the DNA fragments.

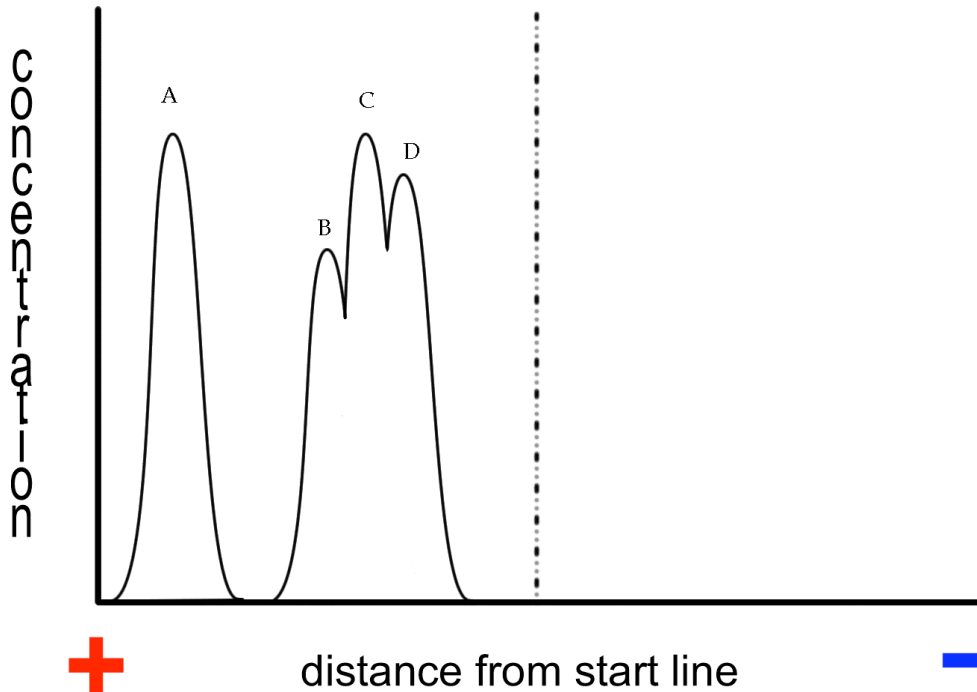
2b. Of the two peaks you chose, which one represents the DNA fragment with the greatest charge to mass ratio? Explain your answer.



2c. Draw on the plate below the location of the spots where molecules were at the moment the electrophoretic separation was completed.



3. One drop of mixture was placed in the center of an electrophoresis plate (the dotted line below) and then it was run for 30 minutes.



Could a lab technician obtain a pure sample of substance C? **Choose all that are correct.**

- Yes if you take the sample from the peak.
- Yes, but only if you run the electrophoresis apparatus longer giving time for B, C, and D to separate.
- No, not from this plate because B, C and D overlap and there is no region that is just C.
- No, because B and D are much too close in charge to be completely separated from C.