

**Electrophoresis
Study Questions
17 points**

Student Name: _____

Date: _____

Instructions: Using the Electrophoresis PowerPoint presentation, answer the below questions. All questions worth one point unless notated.

1 pt. 1. State the principle of electrophoresis.

1.5 pt. 2. Name three (3) types of support mediums used in electrophoresis.

1pt. 3. Describe the steps in electrophoresis.

1pt. 4. What is the purpose of the electrical current in an electrophoresis system?

1pts. 5. What are the functions of the buffer?

1pt. 6. What do bands in the gel or supporting medium represent?

1pt. 7. What result would the student expect to see with smaller protein molecules?

1pt. 8. What is the charge of a cathode? Anode?

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1pt. 9. Which ions travel toward the anode? The cathode?

2pt. 10. List four (4) factors that affect migration rates.

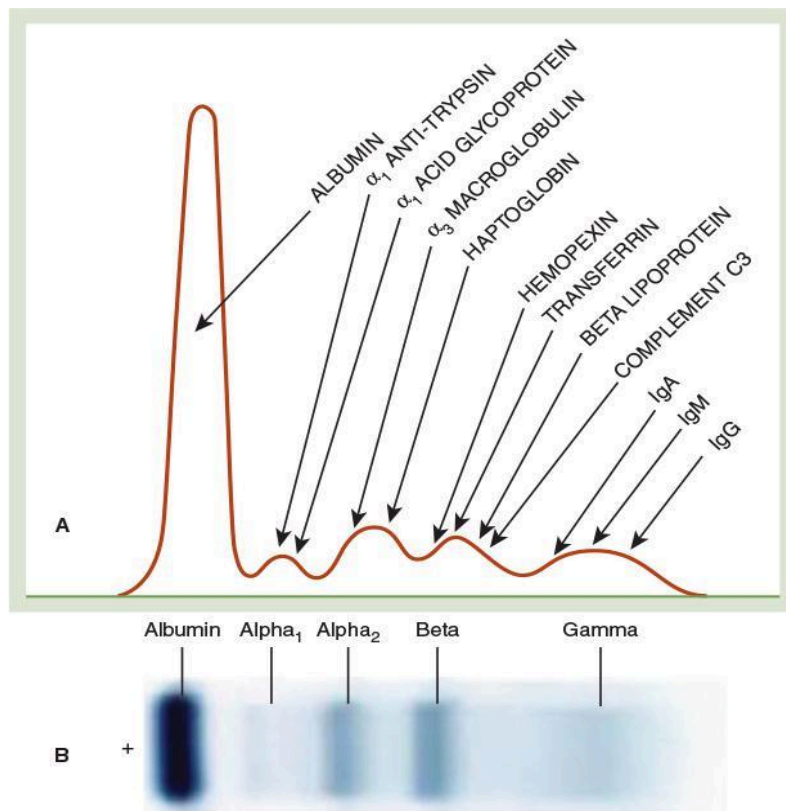
2.5pt. 11. Identify the five (5) major protein classes, listing them in order of migration from the anode to the cathode.

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3pts. 12. Miguel, a 48-year old man had fallen and broken his leg. In the ER, he explained his complicated medical history, with type 2 diabetes, peripheral neuropathy, and chronic renal insufficiency. His CBC showed a normochromic, normocytic anemia. The xray of his ankle showed bone loss. Based on admitting chemistry test results, the physician ordered a serum protein electrophoresis. The results of Miguel's test were:



Compare Miguel's image, to reference patterns found below.



a) What protein fraction(s) shows an increase?

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Compare the image from Miguel's electropherogram from the densitometer, using the reference patterns found on page 3.

b). What pattern looks the most similar?

c). In addition to Miguel's broken ankle, what other gammopathy might Miguel have?

