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FACULTY OF BASIC MEDICAL SCIENCES
DEPARTMENT OF BIOCHEMISTRY
HARMATTAN SEMESTER EXAMINATION

BCH 309: Methods in Biochemistry

Instructions: Answer **THREE** Questions ONLY

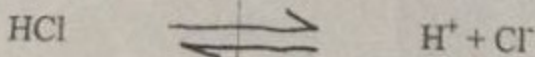
Time Allowed **1 1/2** Hours
November 2014

1h. 30m

1. a. Define Electrophoresis ✓
b. What advantages does capillary electrophoresis provide over liquid chromatography?
c. Write short notes on two forms of electrophoresis, ✓
2. a. List the roles of the following reagents in protein purification
 - i. Ammonium sulphate *precipitating agent. It helps in precipitation of proteins*
 - ii. Blue Dextran
 - iii. Resin *resin contains charged particles and exchange ions for components when components of sample are passed*
 - iv. Sodium Chloride *are ionic stabilizers that enhance solubility*
 - v. Buffer *It is used in the run. It helps in maintaining protein stability and function*
- b. Give an account of how you can confirm the presence of protein in a sample - *Biuret's test*
- c. How will you determine the concentration of the protein in C.
3. Write short note on the following
 - i. Swinging bucket centrifuge
 - ii. Fixed angle centrifuge *Resin contains charged particles and exchange ions for components when components of sample are passed*
 - iii. Buffer solution

OR

4. i. From the equation below deduced Henderson-Hasselbalch equation



- ii. Acetic acid has a pK_a of 4.8. How many millimoles of 0.1M Sodium acetate are required to prepare 1 Litre of 0.1 M buffer solution having pH of 5.8?

It helps in breaking the buffer containing one protein into colloidal solution
Centrifugation is a process that uses centrifugal force to separate mixtures of
having masses or densities suspended in a liquid.
solution. It helps in maintaining protein stability & function
from folding or denaturation
It helps in protecting the protein against oxidative damage