Seat No. : _____

ND-103

November-2013

B.Sc. Sem.-III

Biochemistry

Paper-201

(Biophysics & Instrumentation)

Time : 3 Hours] **[Max. Marks : 70**

1. (a) Write all properties of water and explain any three in detail. **6**

   (b) Giving example, explain buffer capacity in detail. **8**

   OR

   (a) Explain water as biological solvent. **6**

   (b) Explain working of pH meter. **8**

2. (a) Define viscosity and explain how to measure viscosity. **7**

   (b) Explain methods for determination of surface tension. **7**

   OR

   (a) Explain how Donnan membrane equilibrium is maintained. **7**

   (b) Explain methods for determination of surface tension. **7**

3. Explain principle and working of any **one :** **14**

   (a) Ion-exchange chromatography.

   (b) Thin layer chromatography in detail.

   (c) Gel electrophoresis

4. (a) Explain any two components of spectrophotometer. **7**

   (b) Give differences between colorimeter and spectrophotometer. **7**

   OR

   Write a note on any **one :** **14**

   (1) Types and importance of Monochromators.

   (2) Working model of Double Cell colorimeter.

5. (a) Define any **two** of the following : **3**

(1) pKa

(2) base

(3) Buffer

(b) Define any **two** of the following : **3**

(1) R_f

(2) origin

(3) stationary phase

(c) Give 2 uses of any **four** of the following : **8**

(1) Osmotic pressure

(2) Viscosity

(3) Adsorption

(4) Spectroflourimeter

(5) pH meter