(p) ESR. 4

(q) NMR. 4

(r) Advantage of flame photometry. 4

7. (a) Explain in brief the method of "double diffusion". 4

(b) Explain immunofluroscence. 4

(c) Mention in brief on the principle of ELISA. 4

OR

(p) Isotopic tracer technique. 4

(q) Working and application of PCR. 4

(r) Biohazards of radiations. 4

AP–435

B.Sc. (Part-I) Semeste –II Examination

2S : BIOCHEMISTRY

(Biophysical & Biochemical Technique)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory and carry equal marks except Q. No. **1** which carries **8** marks.

(2) Draw well labelled diagram and formulae wherever necessary.

1. (A) Fill in the blanks :

(i) _____ gives fluid mosaic model of membrane. ½

(ii) pH = pKa when the ratio of salt to acid in HH equation is _____. ½

(iii) For paper chromatography ____ filter paper is used. ½

(iv) ELISA stand for _____. ½

(B) Choose the correct alternatives :

(i) Nebuliser, an important component used in :

(a) HPLC

(b) GLC

(c) Flame photometry

(d) Fluorometry ½

(ii) Principle of affinity chromatography is based on :

(a) Mass (b) Size

(c) Specificity (d) Isolectric point ½

(iii) Which of the following techniques involve radio activity ?

(a) PAGE (b) ELISA

(c) RIA (d) PCR ½

(iv) Nature of amphoteric compound is :

(a) Acidic (b) Basic

(c) Both (d) None ½

(C) Write answer in **one** sentence :

(i) What is difference between absorption and adsorption ? 1

(ii) Give the first law of thermodynamics. 1

(iii) What is ESR ? 1

(iv) Define immunodiffusion. 1

2. Mention the laws and applications of thermodynamics. 12

OR

Explain in detail the concept of free energy and standard free energy. 12

3. (a) Derive Henderson and Hesselbalch equation. 4

(b) Active transport. 4

(c) pH measurements. 4

OR

(p) Dialysis technique. 4

(q) Water as a biological solvent. 4

(r) Application of centrifugation. 4

4. (a) What is adsorption chromatography ? Write in brief on principle and method. 4

(b) Gas liquid chromatography. 4

(c) General principle of chromatography. 4

OR

(p) Paper chromatography. 4

(q) Affinity chromatography. 4

(r) Ion exchange Resins. 4

5. Write in detail on principle, method and advantage of 2D-electrophoresis. 12

OR

Explain in detail SDS - PAGE. 12

6. (a) Explain and label the components of UV spectroscopy. 4

(b) Fluorometry. 4

(c) Mass spectroscopy. 4

OR