(p) SDS-PAGE 4

(q) 2-D Electrophoresis 4

(r) Western Blotting 4

6. Write in brief about :

(a) Light absorption and its transmittance 4

(b) Beer's Lambert's law 4

(c) Flame photometry 4

OR

(p) Fluorometry 4

(q) ESR 4

(r) Mass spectroscopy 4

7. Write in brief about :

(a) Immunodiffusion 4

(b) RIA 4

(c) PCR 4

OR

(p) ELISA 4

(q) Isotopic tracer technique 4

(r) Autoradiography 4

AQ–664

B.Sc. (Part–I) Semester–II Examination

2S : BIOCHEMISTRY

(Biophysical and Biochemical Techniques)

Time : Three Hours] [Maximum Marks : 80

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

1. (A) Fill in the blanks :

(i) ____ is the log of hydrogen ion concentration.

(ii) Paper chromatography is _____ type of chromatography.

(iii) Principle of Colorimetry obeys _____ and _____ law.

(iv) In dialysis process _____ is retained inside the bag from mixture of protein and electrolytes. 2

(B) Give the correct alternative :

(i) Osmotic pressure of plasma is :

(a) 80–100 Milliosmoles/Lit.

(b) 180–200 Milliosmoles/Lit.

(c) 280–300 Milliosmoles/Lit.

(d) 380–400 Milliosmoles/Lit.

(ii) Water and electrolyte balance is regulated by :

(a) Aldosterone

(b) Antidiuretic hormone

(c) Renin-angiotensin system

(d) All of above

(iii) Buffering action of haemoglobin is mainly due to its :

(a) Glutamine residues

(b) Arginine residues

(c) Histidine residues

(d) Lysine residues

(iv) pH of body fluids in maintained by :

(a) Chemical buffer

(b) Respiratory system

(c) Kidneys

(d) All of above. 2

(C) Write in **ONE** sentence only :

(i) What is chromatography ?

(ii) Acids are defined as.

(iii) What is the application of PCR.

(iv) Free energy. 4

2. Write in detail the principle and application of Thermodynamics in Biochemistry. 12

OR

What are Biological oxidation – reduction reactions ? Add a note on redox potential. 12

3. Discuss the following :

(a) Water as biological solvent 4

(b) Weak acids and buffers 4

(c) Physiological buffers 4

OR

(p) Glass and reference electrode 4

(q) Singer and Nicolson model of plasma membrane 4

(r) Dialysis 4

4. Write in detail about principle, working and application of HPLC. 12

OR

Discuss and describe in detail about Gas Liquid Chromatography. 12

5. Describe the following electrophoretic techniques :

(a) Agarose 4

(b) Paper Electrophoresis 4

(c) PAGE 4

OR