SHRI GOVIND GURU UNIVERSITY, GODHRA

B.Sc. Biotechnology Semester-III

(Multidisciplinary paper)

BT: Instrumentation and Techniques

Total credit: 4 (Theory and Practical)

UNIT-1: POTENTIOMETRY AND SEPARATION TECHNIQUE

1.1 pH Electrode: Reference electrode, Glass electrode, Combine electrode

1.2 Construction, operation and use of pH meter

1.3 Classification of chromatography & general principles

1.4 Principles of Paper chromatography and Thin Layer Chromatography

1.5 Development methods

1.6 Detection, measurement and use of radioactivity in Biology

UNIT-2: CENTRIFUGATION

2.1 Basic principles of sedimentation, Types of centrifuges and rotors

2.2 Separation methods in preparative ultracentrifuges:

2.2.1 Differential centrifugation

2.2.2 Density gradient centrifugation

2.3 Application of analytical ultracentrifuge

2.3.1 Determination of relative molecular mass

2.3.2 Estimation of purity of macromolecules

BT Practical

1. Study of Binocular Microscope and cell count by Haemocytometer.
2. To study the working of Centrifuge
3. Paper chromatography for separation of amino acids
4. Preparation of working solutions as well as different buffers and calibration of pH meter.

REFERENCES:

1. Keith Wilson &john walker (ED) (2000): Practical biochemistry-principle & Techniques. Cambridge university press.

2. Skoog , Holler and Nieman, Industrial analysis-Saunders college publication

3. Skoog, West and Holler, fundamentals of analytical chemistry- Saunders college publication
4. James S. Fritz & George H. Schenk, Jr. (1969): Quantitative analytical chemistry (2nd edition). Allyn &Bacon, Inc., Boston.

5. Brown S.B (1980): An Introduction to spectroscopy for biochemists. Academic press London.