

UNIT 17: PROTEINS AND AMINO ACIDS

1. First aid, hazardous chemicals, antidote for toxic chemicals, Safety in labs, care of glasswares, Handling of instruments: Planning, execution and recording of experiments.
2. Amino acid detections and estimations.
3. Comparative evaluation of different methods of protein analysis: Lowry, Biuret, Kjeldahl, UV,
4. Isolation of milk casein, egg albumin, globulins
5. Electrophoresis of serum proteins
6. Molecular weight by gel filtration,
7. Ion exchange chromatography of amino acids,
8. Comparative evaluations of acid, alkaline and enzymatic hydrolysis of proteins.
9. Paper chromatography of amino acids and specific tests

BOOKS:

1. Hawk's Physiological Chemistry, Tata McGRAW Hill Book Co, Bombay (1981)
2. Experimental Methods in Modern Biochemistry - G. Rodina (1971)

UNIT 18 : LIPIDS AND CARBOHYDRATES:

1. Isolation of starch, separation of starch components, Enzymatic methods of characterisation of starch,
2. Carbohydrate detection, separation and estimations
3. Lipid detection, separation and estimations
4. Identification of glycolipids and glycoproteins

BOOKS

Same as in Unit 17

UNITS :19:COMPUTER:

1. Writing a BASIC program to plot graphs of enzyme kinetic data by a variety of linear transforms and the Michaelis Menten hyperbolic plots.
2. Write a BASIC program to calculate the pH of dilute salt solutions.
3. Write a BASIC program for the analysis of amino acids sequences.
4. Use of packaged statistical computer program for the statistical analysis
5. Use of computer program to analyse DNA sequences to find complementary sequences, search repeats, restriction sites, coding sequences, codon usage etc.

BOOKS :

1. Computing for Biologists. A. Fielding (1985) Addison-Wesley Publishers, Ltd. Wokingham, UK.
2. Microcomputers in Biochemical Education E.J. Wood (Editor) (1984). Taylor and Francis Ltd., UK
3. Computer Games and Simulation for Biochemical Engineering H.R. Bungay (1985). John Wiley and Sons Ltd., New York.
4. Microcomputers in Biology: A Practical Approach C.R. Ireland and S.P. Long (1985) IRL Press Ltd., UK.

Wesley

UNIT 20 : BIOPHYSICAL EXPERIMENTS:

1. Concept of pH preparations of buffers, pH meter
2. pKa of amino acids
3. Partition coefficient
4. Optical rotation
5. Viscometry
6. Osmotic fragility
7. Refractive index
8. Freeze drying
9. Calcium activation estimation in milk, half life,
10. Autoradiography
11. Conductivity.

BOOKS:

1. An Introduction to Practical Biochemistry. David T. Plummer, Tata McGraw-Hill Co. Ltd. Bombay.
2. Practical Physical Chemistry. A. Finlay and J.A. Kitchner, Longman.