

4) Identification of Chromosomes.

5) Inoculation of Lymphocyte culture/peripheral blood culture.

6) Harvesting of Lymphocyte culture to obtain metaphase plates.

7) Chromosomal banding technique: GTG Banding.

8) Karyotyping of Human chromosomes (use of Cytovision / any other Karyotyping software is optional: for image capturing, image processing, and analysis).

9) Study of Karyotypes: Normal male and female.

10) Construction of Pedigree from given data.

11) Analysis of pedigree charts to determine the mode of inheritance.

Paper DLTC 02: Clinical Biochemistry I

THEORY

Module 1: ↗

- The scope of biochemistry:
- Chemical organization of the cell.
- Organic and inorganic components of the cell.
- Marker enzymes of the cell.
- Hydrogen ion concentration and buffers: pH
- Blood buffers, regulation of blood pH.
- Acid base metabolism.

} Zoology

Module 2:

- Carbohydrate chemistry.
- Protein chemistry.
- Lipid chemistry.

Module 3:

- Enzymes:- Definition, classification, factors affecting enzyme action.
- Enzyme inhibition,

- Isoenzymes,
- Regulation of enzyme activity.
- Vitamins.
- Minerals.

PRACTICALS:

1. Estimation of pH. Use of pH meter.
2. Qualitative and quantitative Carbohydrate chemistry.
3. Qualitative and quantitative Protein chemistry.
4. Qualitative and quantitative Lipid chemistry.
5. Estimation of haemoglobin by cyanmeth haemoglobin
6. Estimation of chloride in serum
7. Estimation of serum calcium
8. Estimation of serum inorganic phosphorus.
9. Separation of amino acid and its identification by paper chromatography- Demonstration
10. Separation of serum protein by electrophoresis- Demonstration
11. Separation of lipid by Thin layer chromatography - Demonstration
12. Estimation of serum Na⁺/ K⁺ ions by Flame photometer- Demonstration.

Paper DLTC 03: Clinical Microbiology (General and Systematic)

THEORY

Module 1:

- Introduction to microbiology- historical prospective, principle of microbiology, microscopes (types and uses)
- Bacteria: Classification, anatomy, reproduction , growth and nutrition.
- Sterilization:- methods employed, both physical and chemical.
- Media used in Microbiology:- Classification, types, constituents, methods of preparation, adjustment of pH, sterilization.

Module 2:

- Serology:- Antigen, antibody, antigen-antibody reaction.
- Newer methods of diagnosis: PCR, Bactec, Flow cytometry.