

DEPARTMENT OF BIOCHEMISTRY & BIOTECHNOLOGY**SBIOVAC01 - Clinical Laboratory Techniques****Learning Objectives**

- To demonstrate the basic requirements of clinical laboratory, external quality assurance and internal quality assurance.
- To impart skills on sampling, laboratory analysis and disposal of wastes.
- To impart knowledge on standards and interpretation of diagnostic values.

Course Outcomes

At the end of this course, students will be able to:

- Understand the basic concepts of specimen collection, transportation and disposal of specimens.
- Comprehend the methods of blood grouping, determination of protein, glucose, cholesterol, triglycerides and lipoproteins.
- Apprehend the examination of body fluids such as ascitic fluid, pleural fluid, synovial fluid, CSF etc.
- Interpret the presence of abnormal constituents in urine, detection of occult blood and semen analysis.

Unit-1

Specimen collection and handling, transportation of specimens, disposal of specimen after laboratory use. Composition of blood. Methods of estimation of Haemoglobin, PCV, total and differential count of WBC, platelet count, clotting, bleeding and prothrombin time.

Unit-2

Blood Group - methods of grouping and Rh factor. Determination of proteins in serum and plasma. Determination of glucose, glycated hemoglobin, triglycerides, cholesterol, lipoproteins.

Unit-3

Examination of body fluids - ascitic fluid, pleural fluid, synovial fluid, pericardial fluid, CSF and amniotic fluid.

Unit-4

Urine analysis, abnormal constituents. Faecal specimen - Macroscopic and microscopic examinations - detection of occult blood, Semen analysis.

Unit-5

Functional components of clinical laboratories. Basic requirements of clinical laboratory technician. Maintenance of glassware and equipments. Quality assurance in clinical laboratory. External QC and internal QC – Assessment - Corrective and preventive actions.

Text Books

Baker, F.J., R.E. Silvertson, Butterworth - Heinemann. *Introduction to Medical Laboratory Technology*. Butterworth- Heinemann. 2014.

Harold Varley. *Practical clinical biochemistry*. CBS Publisher. 6th ed. 2002.

Mayne. *Clinical Chemistry in Diagnosis and Treatment*. ELBS. 6th ed. 1994.

Praful. B. Godkar, Darshan. P. Godkar. *Text book of Medical Laboratory Technology*. Bhalani Publishing House. 2014

Todd & Stanford. *Clinical Diagnosis and Management by Laboratory Methods*. 16th ed. 2016.