

BCP 459: PRACTICAL CLINICAL BIOCHEMISTRY: HARD CORE

Practical: 8 hours/week

Total Credits: 04

Course objectives

- To understand the role of enzymes in the diagnosis of diseases.
- Disorders of Hemoglobin, liver diseases
- Disorders of kidney, GIT and endocrine glands, metabolic disorders
- To study the disorders of amino acid & protein metabolism, purine & pyrimidine metabolism, lipid metabolism.
- To know the causes of cardiovascular disorders and cancer

EXPERIMENTS

1. Urine analysis – Normal and Abnormal.
2. Estimation of serum cholesterol by Zak's method.
3. Estimation of serum proteins by Lowry's method
4. Estimation of protein and A-G ratio by biuret method
5. Estimation of free proline by Bate's method
6. Serum SGOT, SGPT, LDH, ALP, urea, uric acid, creatinine, TAG, Cholesterol estimation using kits. Determination of HDL and LDL cholesterol.

Course outcome

- Student understands the significance of diagnostic enzymes.
- Further, he will know the disorders of Hemoglobin such as sickle cell anemia, thalassemia, liver diseases such as hepatitis, jaundice, cholestasis, cirrhosis, gall stones, etc.,
- Biochemical tests to diagnose the disorders of kidney, GIT and endocrine glands, metabolic disorders, such as inborn errors of carbohydrate metabolism.
- Student studies the disorders of amino acid & protein metabolism, purine & pyrimidine metabolism, lipid metabolism.
- Student learns the causes of cardiovascular disorders and cancer.

References:

1. Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics, Carl A. Burtis, David E. Bruns. 7th ed. Elsevier, 2014.
2. Practical Clinical Biochemistry, Harold Varley, Interscience Publishers Inc, 2002
3. Clinical Chemistry: Theory, Analysis and Correlation. Kaplan, L.A. and Pesce, A.J., 4th ed. Mosby, 2003.
4. Introduction to Practical Biochemistry. David T. Plummer
5. Lab Manual of Biochemistry. By Nigam. 2007. Tata McGraw-Hill Education, USA.