Syllabus for Technical Assistant (Lab)-A to Technical Assistant (Lab)-B-MFCP (BIOCHEMISTRY)

Laboratory Safety and Quality – Safety measures in Clinical Laboratory, safe handling of samples and biomedical waste management, Internal and external quality control, Levy-Jennings plot, coefficient of variation, Quality audits, Laboratory laws and regulations, sources & solutions for pre-analytical, analytical & post-analytical errors in patient sample analysis. Reference values for biological variables, methods of calibration, definition of accuracy, precision, sensitivity, specificity and its significance.

Instrumentation – Automation in clinical biochemistrylaboratory, Laboratory Information System and its importance, Different types of analyzers, Principle and application of Electrophoresis, Chromatography, Colorimeter, Spectrophotometer, Microscopy, Centrifugation, ELISA, RIA, Flame photometer, Coagulation instruments, Hematology analysers.

Reagents and solutions - Preparation of Buffers, percentage solutions, Dilutions, molarity& normality definition and preparation of solutions of defined molarity, pH measurements.

Hematology -Introduction of Haematology, Collection of Blood, Red Cell Count, White cell count, Differential Leucocyte Count, Packed Cell Volume, Estimation of Haemoglobin, Anticoagulation, MCV, MCH & MCHC & its importance, morphology of normal /abnormal red blood cells, method, appearance &reticulocyte count, coagulation mechanism, blood smear staining.

Clinical Chemistry

Blood glucoseEstimation and significance of fasting and post prandial blood glucose measurements, HbA1c, glucose tolerance test. Estimation of blood gases and pH, acidosis & alkalosis (Metabolic & Respiratory). Estimation and clinical significance of sodium, potassium, calcium, chloride and phosphorus. Estimation of total proteins, Albumin, Globulin, A/G ratio, electrophoresis of plasma proteins, serum protein abnormalities, Plasma amino acid measurement and significance.Estimation and clinical significance of Total Cholesterol, Triglycerides, HDL, LDL, VLDL.Estimation and importance of SGOT, SGPT, Acid Phosphatase, Alkaline Phosphatase, Amylase, Direct and indirect bilirubin.Estimation of Urea, Uric acid, Creatinine. Estimation of D-dimer, Troponin T, Troponin I, LDH, CPK CK-MB and NT-ProBNP- normal levels and significance of variation.Estimation and significance of Serum Iron, Total Iron Binding Capacity, Serum Ferritin, Transferrin saturation.

Urine Analysis – Physical, Chemical and microscopic examinations, normal/abnormal constituents, proteins, occult blood and urinary sediments.

CSF Examination – Physical, Chemical and Microscopic examination of CSF and alterations in diseases

ADMINISTRATIVE OFFICER Gr.I(I/C)
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