



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

PhD CET Syllabus

Paper II - Subject Specific Test

Medical Biochemistry

Cell Biology & Instrumentation

Cell Biology, Spectrophotometer, Flurimeter, chromatography, electrophoresis, turbidimetry, nephelometry, electron microscopy, flowcytometry, NMR, SPECT, PET scans

Module 2

Quality Control-

Automation in Clinical Biochemistry Laboratory, Semi autoanalyser, Autoanalyser, Dry chemistry analyser, Chemiluminescence, Good clinical laboratory practice, Internal quality control, external quality control, laboratory accreditation (Need of accreditation, Process of accreditation, re-requisites for accreditation, Benefits of accreditation), Diagnostic kits

Module 3

Metabolism-

Metabolic & applied / Clinical Aspects (disorders) of carbohydrates, proteins, lipid & Nucleic acid metabolism, Mineral metabolism, Integration of carbohydrates, proteins and lipid metabolism, Starvation metabolism, Hb metabolism,

Module 4

Clinical/applied Biochemistry-

Acid base and electrolyte balance with disorders, Cancer, Biochemistry of the endocrine system, Profile test (hypothalamus and pituitary, adrenal glands, gonads, thyroid, parathyroid, liver, kidney, heart, stomach, pancreas, intestine, etc) and associated disorders, Hemoglobinopathies, New born screening, Free radicals/Antioxidants in health & diseases, Regulation of enzyme activity, enzyme kinetics, inhibition and diagnostic importance of enzymes

Module 5

Immunology-

Basic of Immunology- Antigen, Antibody, Primary response, Secondary response, Innate Immunity, Cellmediated immunity, Ag-Ab reactions, T & B cells, MHC, Complement system, cytokines, ELISA, RIA, Acquired immunodeficiency syndrome(AIDS) Transplantation, Inflammation, Hypersensitivity reactions, Autoimmune disorders

Module 6

Molecular Biology-

Replication, Transcription, Translation, Post translational modification & regulation, Mutation & repair of DNA & its associated diseases, Mitochondrial DNA & its diseases, Regulation of Gene expression, Recombinant DNA technology & its applications, Techniques in DNA analysis- DNA sequencing methods, PCR, RFLP, Blotting techniques, Hybridization, Micoarray, DNA chip technology, cloning techniques, Bioinformatics

Module 7

Recent advances

Human Genome project, Molecular diagnostics Gene therapy, Stem cell research