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GOVERNMENT OF SIKKIM
HEALTH AND FAMILY WELFARE DEPARTMENT
TASHILING SECRETARIAT, GANGTOK

No. 788 / H & FW/ 2019

Dated : 15/11/19

SYLLABUS FOR WRITTEN EXAMINATION FOR THE POST OF LABORATORY TECHNICIANS: -

BIOCHEMISTRY :

1. General Biochemistry-Biochemical Perspective of Medicine, Subcellular Organelle and Cell Membrane, Amino acid and Proteins - Chemistry, Properties and Function, Enzymology, Chemistry of Carbohydrate and Lipids, Nucleic Acid and Nucleotides, Major Metabolic Pathways of Carbohydrates (Glucose and Other Carbohydrates), TCA cycle, General Amino Acid metabolism (Urea and one carbon), Amino acid and Lipids (Fatty acid, Cholesterol, Lipoproteins) metabolism, Biological Oxidation and Electron Transport Chain, Heme Synthesis and Breakdown of Heme, Hemoglobin (structure, oxygen and carbon dioxide transport and abnormal hemoglobin), Molar and Normal Solutions Buffer Solution, pH, pH Indicators and Measurements, Dialysis, Surface tension,

2. Basic Principles of Biochemistry

Role of Medical Laboratory Technologist, Ethics, Responsibility, Safety Measures First Aid(Accidents), Preparation of Reagents and Standard solutions, storage of chemicals, Units of Measurements, Measurements of Volume, Calibrations of Volume metric apparatus,

3. Analytical Biochemistry-Distillation, Buffers, weights and Measurements, Centrifugations, Colorimetry, Flame Photometry, Spectrophotometer, Atomic absorptions Spectrometry

4. Clinical and applied Biochemistry

Clinical Enzymology and Biomarkers (Amylase, Lipase, LDH, ALT, AST, ALP, GGT, PSA, Glucose 6 Phosphate Dehydrogenase, Enolase, Creatinine Kinase, Cardiac Markers) Regulation of blood Glucose and Diabetes Mellitus, Hyperlipidemia and Cardiovascular disease, Liver and Gastric function test, Kidney function test, Plasma Proteins (Electrophoresis, Transport Proteins, Albumin, Acute Phase Proteins, Clotting Factors and Abnormalities in Coagulation), Acid Base Balance and pH (Arterial Blood Gas Analysis), Electrolyte and Water imbalance, Body fluids (Milk, CSF, Ascitic, Pleural and Amniotic fluids, Urine, Saliva), Metabolic disease (Prenatal diagnosis, new born screening, laboratory investigation to diagnose metabolic diseases), Free Radicals and Antioxidants, Clinical Laboratory Quality Control, Laboratory errors (Preanalytical, Analytical and Post Analytical.)

5. General techniques of Separation - Electrophoresis, Chromatography, Radioimmunoassay, ELISA, Autoanalyser, Mass spectrometry,

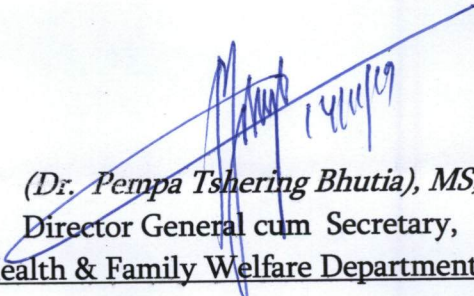
6. Nutrition- Vitamins, Minerals, Trace Elements, Energy Metabolism and Nutrition, Detoxification and Biotransformation of Xenobiotics

7. Molecular Biology- Nucleotides- Chemistry and Metabolism, Transcription, Translation, Gene Expression, Genetics, Recombinant DNA Technology, Molecular diagnostics and Genetics techniques (PCR, Hybridization and Blot Techniques), Mutation detection technique

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8.Hormones- (Hypothalamus, Pituitary, Steroid, Thyroid, Insulin, Glucagon, Gut hormones)
● Mechanism of action, Hormones measurements

9.Advance Biochemistry- Immunoglobulins (Serology), Paraproteins, Immunodeficiency, Biochemistry of AIDS/HIV, Biochemistry of Cancer, Tumor Markers, Tissue Proteins in Health and Diseases (Collagen, Elastin, Lens, Prions,)


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