OFFICE OF THE PRINCIPAL

PUB-KAMRUP COLLEGE

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15/9/2016

ADVANCED DIPLOMA IN LABORATORY TECHNICIAN (ADMLT)

Name of the Program: Advanced Diploma in Laboratory Technician

Year of Introduction: 2013-14

Duration: 02 years

Program Outcome:

1. To produce skill-based manpower in paramedical field.
2. To provide General science students wit the diploma as an add-on course for enhancing the scope of their employability.

Course Outcome:

Course-I: Biochemistry, Anatomy and Histopathology (Theory):

After completing the course students will learn

- Diagnostic tests – Glucose Tolerance test, Blood urea, serum uric acid, Serum Creatinine
- Methods of collection of clinical specimen for Micro – biological investigation – a. Sputum – Petroff's method of concentration, urine, swabs, stool, blood, CSF and aspirations
- Processing of clinical specimen collected for isolation and identification of organisms. Preparation of direct smear and staining.
- Different methods of staining.
- Pathological analysis of urine-specific gravity, pH, reaction, colour.
- Chemical examination of sugar albumin, bile salts, bile pigments.
- Pathological examination of sputum.
- Semen analysis – counting, motility, staining and morphology
- Body fluids – D.C of peritoneal, pericardial, pleural fluids and CSF, identifying and counting of cells.
- Enzyme linked immune assays.

- Liver function tests -
- Serum bilirubin determination.
- Urine examination in assessing kidney function.
- Techniques of different tests including tubeless gastric analysis.
- Serum bilirubin determination.
- Urine examination in assessing kidney function.
- Techniques of different tests including tubeless gastric analysis.
- Estimation of various thyroid hormones and their interpretations, recent methods of thyroid function tests.

Paper – II *Biochemistry and microbiology (Theory), Marks - 75*

- Principle, Maintenance and handling of Compound Microscope
- Sterilization and disinfection – Classification and Methods
- Cleaning, drying and sterilization of glassware disposal of contaminated material, Handling of Biomedical Wastes
- Biomedical basics
- Detailed description of the biomedical equipments used in emergency management of patients.
- Morphology and Classification of Bacteria
- Study of Human Organs – Brain, Stomach, Lungs, Intestine, Heart, Kidney, Liver, Uterus, Spleen, Fallopian tubes, Reproductive system
- Separation of solid from liquids,Centrifugation – Its principle, different types of centrifuges, care and maintenance and applications,
- Definition, Properties, Difference between Mixture and Compound, Formulae of Common Compounds
- *Heat* Definition, Types and effects of heat, Measurement of Heat, Boiling Point, Melting Point, Freezing point
- *Light and Temperature::* Source, Wave Length, reflection and Refraction, Measurement of colour
- *Specific Gravity:* Definition of Mass and Weight, Determination of Specific Gravity
- Instrumental methods of Biochemical Analysis: Operation, Application, Care and maintenance
- Colorimeter
- Spectrophotometer
- Precaution and smearing techniques and labeling of the samples
- Personal safety precautions, WHO Safety Code for microbiology lab, Reagents and chemicals used in Microbiology lab

Paper- *III* Clinical Biochemistry (Practical)

- Microscopic sediment for RBC, WBC, epithelial cells, Casts, crystals, parasites.

- Preparation of reagents.
- RBC, WBC count, Platelet count, Reticulocyte count, haemoglobin estimation, estimation of PCV and ESR study.
- Human slides – Epithelial tissue, Connective tissue, Muscular tissue, Nervous tissue, Liver, Kidney, Spleen, Pancreas, Lymph nodes, Skin, Testes, Ovary, Uterus, Tonsil, Stomach layers, Small intestine, Large intestine.
- Blood pressure estimation.
- Temperature, pulse, respiration chart.
- Study of Human Skeleton.
- Name of the bones.
- Identification points.
- Surfaces of bones.
- Instrumental methods of Biochemical Analysis: Operation, Application, Care and maintenance
- Colorimeter b. Spectrophotometer
- Filtration using funnel
- Sterilization and disinfection – Classification and Methods
- Blood sugar test
- Collection of specimen blood, urine – precautions during collection, preservation and preservation
- Collection of blood through vein puncture, finger puncture and vacutainer methods,
- Physical and chemical examination of urine

Principal/Vice Principal

Pub Kamrup College

Vice-Principal
Pub Kamrup College
Baihata Chariali