Syllabus of Lab Technician, Lab Technician Pathology, Lab Technician Biochemistry, Lab Superviser, Technical Assistant, Lab Assistant

Anatomy

Primary tissue of body

Skeletal Systems

GIT, Liver, Gall Bladder, Spleen & Pancreas,

Kidney, Male & Female Genital Tracts

Respiratory System

Cardiovascular System

Brain & Spinal Cord

Physiology

Composition of General Functions of Blood

Blood Cells Normal count & Functions

Coagulation & Anticoagulants

CSF, Formation & Composition

Blood Groups ABO, Rh Factor

Kidney Functions (Including formation of Urine)

Endocrine Hormones and their functions

Pathology

1. Haematology :
   Haemoglobin, RBC, Total & Differential Count, ESR, PCV, Absolute Values, Reticulocyle Count, Platelet Counting, Bleeding Time & Clotting Time. Blood Smear For malaria & Filaria
2. Clinical Pathology :
   Urine Examination (Routine & Microscopic) Stool Examination for Ova & Cyst Sputum for Acid fast Bacilli Throat Swab for KLB Scraping for Hansen's Bacilli, CSF & Other fluid examination semen analysis
3. Blood Banking
   ABO Grouping, Slide & Tube method Major & Minor Cross Matching RH Typing, Rh Antibody titre Direct & Indirect coomb's test, Donor Screening for safe Blood Identification, Labelling & Maintaining the records Anticoagulant Preparation Component Separation.

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4. Hystopathology

   Types of specimens & processing

   Preparation & Fixation of Smears

   Biopsy labelling and preparation, section cutting, mounting and mountants. Staining, H&E, common special stains.

5. Cytology

   Types of specimens & processing

   Preparation & Fixation of Smears

   Pap Staining & MGO Staining

6. Museum Techniques

   Preparation of Fixatives

   Restoration of colour

   Autopsy Techniques

   Preservation of specimens

   Museum mounting

   Disposal of Waste & Safety in Laboratory.

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Syllabus for Perfusionist

1-HUMAN ANATOMY

Upper Limb - Bones of upper limb , Muscle attachment & action, neurovascular supply –

Lower Limb-Bones of lower limb , Muscle attachment & action, neurovascular supply –

Thorax & Lungs-Intercostal space, pleura, bony thoracic cage, ribs , sternum & thoracic vertebra trachea, bronchial area, alveoli

Head & Nech & Brain- Skull, Cervical vertebrae and part of brain.

Visual age Organ-Liver, spleen, kidney, stomach & pancreas

Heart- Surface Anatomy of heart, chambers the hear, valves major blood vessels of heart, pericardiam, coronary artery.

2 -HUMAN PHYSIOLOGY

The Cell-- Cell structure and function of varies organelles.

Circulatory System- Composition of blood , function of blood plasma blood serum.

Cardio Vascular System - Physiology of the heart, heart sounds, cardiac cycle, cardiac output, auscultatory areas , blood pressure , hypertension E.C.G.

Resipratory System- Lung volume and capacities, respiration.

Excretory System- mictruition physiology, GFR, function of Kidney.

Central Nervous System-Introduction of Neuron, spinal cord,nervous regulation cardiac and respiratory function.

Endocrine System- Endocrine glands and function.

Reproductive System- Reproductive organ, function of LH, FHS testosterone, menstrual cycle.

3.PHARMACOLO GY

General Pharmacology- Defination, pharmacokinetics & pharmacodynamics, Adverse drug effects

Respiratory System Drug - Drugs use for cough & bronehial asthma. Drugs used for nebulisation.

Drug acting on central nervous system- General Anaethesai, Sedative-Hypnotics, drugs.

Drug acting on kidney- Diuretics & Anti Diuretics.

Drug affecting blood formation- anticoagulants, antithrombotic & antiplatletdrugs.

4.PRINCIPLE OF PERFUSION TECNOLOGY

Physiology of extra corporeal circulation

Heart lung machine basics

Principle of Extracorporeal circulation

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Principle of Extracorporeal gas exchange

Various type of oxygenators (Bubble,membrane)

Theory of blood pump (pulsatile and continuous flow)

IABP

Connection of vascular system and extracorporeal circulation

Venous drainage, suction pump , hemodynamic of arterial reentry , cardiotomy

Mechanical ventilator

5-DIEASE OF HEART & DIOGNOSTIC TECHNIQUE

Congenital heart disease - Septal defect (ASD,VSD) , great vessels defect , TOF

Acquired heart disease

Myocardial & pericardial disease

Rheumatic heart disease

Coronary artery disease

Respiratory failure

Chest X-Ray Interpretation

ECG

Echocardiography

TMT

Cardiac Enzyme analysis

Angiography

ABG

6-CARDIO PULMONARY BYPASS & PERFUSION TECHNOLOGY

Hemodynamic Aspect Of Total Heart - Lung Technology- Perfusion Flow Pressure And Resistance, 'Capillary Flow Of Blood.

Metabolic aspect of total heart - lung bypass- Electrolyte balance, acid base balance, perfusion flow & O2 Uptake.

systematic effect of perfusion of organs - Oxygen flow & 02 toxicity

Perfusion control

Hematological aspect of Perfusion

Assisted circulation

Circulatory support & metabolic support by partial heart lung bypass.

IABP

Cardiopulmonary by pass 8s complication

Air Embolism and complication –

Technique of termination of bypass

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Syllabus for Clinical Psychologist

1. Perceptual Process:

Approaches to the Study of Perception : Gestalt and physiological approaches

Perceptual Organization : Gestalt, Figure and Ground, Laws of Organization

Perceptual Constancy : Size, Shape and Brightness, Illusion, Perception of Depth and Movements.

Role of motivation and learning in perception

2.Learning Process

Classical conditioning : Phenomena, Paradigms and theoretical issues

Reinforcement : Basic variables and schedules

Verbal learning : Methods and materials, organizational processes

3. Memory and forgetting

Memory processes: Encoding, Storage, Retrieval

Stages of memory : Sensory memory, Short-term Memory (STM) and Long-term Memory (LTM)

Episodic and Semantic memory

Theories of Forgetting : Interference, decay, retrieval

4. Thinking and Problem Solving

Theories of thought processes : Associationism, Gestalt, Information processing

Concept formation : Rules and strategies

Reasoning : Deductive and inductive

Problem-solving : Type and strategies

Role of concepts in thinking

5. Motivation and Emotion

Basic motivational concepts : Instincts, needs, drives. incentives, motivational cycle

Approaches to the study of motivation : Psychoanalytical, ethological. S-R Cognitive, humanistic

Biological Motives : Hunger, thirst, sleep and sex

Social Motives : Achievement, affiliation, approval

Exploratory behaviour and curiosity

Physiological correlates of emotions

Theories of emotions : James-Lange, Canon-Bard, Schachter and Singer

6. Human Abilities

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Intelligence : Biological, Social, Eco-cultural determinants

Theories of intelligence : Spearman, Thurston, Guilford

Individual and group differences : Extent and causes

Measurement of human abilities

7. Personality

Determinants of personality : Biological and socio-cultural

Approaches to the study of personality : Psychoanalytic, neo-freudian, social learning , trait and type, cognitive

Personality assessment : Psychometric and projective tests

Self-concept : Origin and development

8. Research Methodology

Research problems, hypothesis, variables and their operationalization

Types of psychological research

Methods of psychological research : Experimental, Quasi-experimental, case studies, field studies and cross-cultural studies.

Methods of data collection : Observation, interview, questionnaire, tests and scales. non-parametric tests

9. Measurement and testing

Test construction : Item writing, item analysis

Test standardization: Reliability, validity and norms

Types of tests : Intelligence, aptitude, personality-characteristics and important Examples

Attitude scales and interest inventories

Educational measurement and evaluation

10. Biological Basis of Behaviour

Receptors, effectors and adjuster mechanisms

Neural impulse : Origin, conduction and measurement

Sensory system : Vision and Audition

Human nervous system : Structure and functions

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