




Government of Jammu and Kashmir
Government Medical College,
Srinagar.



NOTIFICATION

It is hereby notified for information of all those candidates who have applied for engagement against the following positions on academic arrangement basis under S.O 364 of 2020 dated: 27.11.2020 in response to this office advertisement notice No: 02 AH of 2024 dated: 12.03.2024 that this Institution is going to conduct their written tests later this month. The question papers will be based on the syllabus indicated in **annexure "A"** and **annexure 'B'** to this notification. The candidates are advised to prepare accordingly for the forthcoming written test.

S.No.	Name of the post	Annexure
01.	Jr. Grade Nurse	A
02.	Laboratory Assistant	B


(Mohammad Ashraf Hakak) JKAS
Administrator,
Associated Hospitals,
Govt. Medical College, Srinagar.

No: AH-Est- / 183
Copy to the:-

Dated: 04-04-2024.

1. I/C website, Govt. Medical College, Srinagar with the directions that the notification alongwith copies of syllabus may be uploaded on the official website of this Institution for information of the concerned candidates.





**THE J&K STATE PARA-MEDICAL COUNCIL
GOVERNMENT MEDICAL COLLEGE JAMMU.**

Email: paramedicalcounciljammu@gmail.com

SYLLABUS

Diploma in General Nursing & Midwifery (GNM)

Ist Year

➤ Anatomy and Physiology

(Marks 10)

- UNIT-1 Introduction to anatomical terms
- UNIT-II Organization of body cells tissues .organs. systems membranes and glands
- UNIT-III Skeletal system
- UNIT –IV Muscular system
- UNIT-V Cardio-vascular system
- UNIT-VI Respiratory system
- UNIT-VII Digestive system
- UNIT-VIII Excretory system
- UNIT-IX Nervous system
- UNIT-X Endocrine system
- UNIT-XI Sense organs
- UNIT –XII Reproductive system

➤ Community Health Nursing - I

(Marks 10)

- Unit- I Introduction to community Health and community Health Nursing
- Unit-II community health nursing process
- Unit- III Health Assessment
- Unit- IV Principles of Epidemiology and Epidemiological methods
- Unit- V Family Health Nursing care

- Unit-VI Family health care settings
- Unit- VII Referral systems
- Unit – VIII Records and Reports
- Unit-IX Minor Ailments

➤ Fundamentals of Nursing

(Marks 25)

- Unit-I Introduction to Nursing
- Unit – II Nursing care of the patient / Client
 - Bed and Bed Making
 - Maintenance of therapeutic environment Temperature, Light, noise and humidity. Psycho Social Environment
 - Nursing Process and Nursing Care Plan
 - Discharging a patient
- Unit – III Basic Nursing Care and Needs of the patient
 - Nutritional needs.
 - Elimination needs
 - Safety needs
 - Activity and Exercises
 - Physical Comforts
 - Moving, shifting and Lifting of patient
- Unit – IV Assessment of patient / Client
 - Physical Assessment
 - Physiological Assessment
- Unit – V Therapeutic Nursing Care and Procedures Asepsis
 - Care and Sterilization of:
 - Care of Respiratory System
 - Care of Gastro Intestinal Treat
 - Care of Genito Urinary System
 - Care of Skin and Mucous Membranes
- Unit – IV Basic Needs and Care in Special conditions
 - Dying patient
 - Unit – VII Introduction to Pharmacology

➤ Nutrition

(Marks 05)

- Unit – I Introduction
- Unit – II Classification of food

2nd Year

➤ Medical Surgical Nursing - I

(Marks 10)

- Unit – I Introduction
- Unit – II Nursing Assessment

- **Unit – III Patho Physiological Mechanism of Disease**
- **Unit – IV Altered Immune Response**
- **Unit – V Clinical Pharmacology**
- **Unit – VI Nurse’s role in Management of Fluids, Electrolyte and Acid Based Balance**
- **Unit – VII Management of patients in pain**
- **Unit – VIII Operation Theater Technique Physical Environment**
 - **Theatre Technique**
 - **Preparation of Theatre equipment & Supplies**
- **Unit – IX Management of patient undergoing surgery**
 - **Intra operative Management**
 - **Post- operative management – Immediate and Routine**
- **Unit – X Nursing management of patient with impaired respiratory function and gaseous exchange**
- **Unit – XI Nursing Management of Patients with Digestive and Gastro-Intestinal Disorders**
- **Unit – XII Nursing Management of Patients with Metabolic and Endocrine Disorders**
- **Unit – XIII Nursing Management of patients with renal and urinary disorders**
- **Unit – XIV Nursing Management of patient with Neurological disorders**
- **Unit – XV Nursing Management of patients with disorders of connective tissue collagen disorders.**
- **Unit – XVI Nursing Management of the Elderly**
- **Unit – XVII Emergency Management**

➤ Paediatric Nursing

(Marks 10)

- **Unit – I Introduction**
- **Unit – II The Newborn**
- **Unit – III The Healthy Child**
 - **The Infant**
 - **Health Promotion during infancy**
 - **The Toddler**
 - **The Pre-Schooler**
 - **The School ager**
 - **The Adolescent**
- **Unit – IV The Sick Child**
 - **Nursing interventions adaptations in nursing care of sick child**
- **Unit – V Behavioral Disorders and common Health Problems during Childhood, their prevention, Medical and Nursing Management.**
 - **Infancy**
 - **Early Childhood**
 - **Middle Childhood**
 - **Later Childhood**
- **Unit – VI Children with congenital Defects / Mal formations**
- **Unit – VII Children with various disorders and diseases**

- Unit – VIII Welfare of Children

➤ Mental Health and Psychiatric Nursing

(Marks 10)

- Unit – I Introduction
- Unit – II History of Psychiatry
- Unit – III Mental Health Assessment
- Unit – IV Community Mental Health
- Unit – V Psychiatric Nursing Management
- Unit – VI Mental disorders and Nursing Interventions.
 - Functional Mental Disorders
 - Definition, etiology, signs, symptoms, medical and nursing management of:
- Unit – VII Bio-Psychosocial Therapies
 - Psychopharmacology
 - Somatic therapy
- Unit – VIII Forensic Psychiatry / Legal Aspects.
- Unit – IX Psychiatric Emergencies and Crisis Intervention

3rd Year

➤ Medical Surgical Nursing - 2

(Marks 10)

- Unit -1 oncology nursing
 - Nursing management of patients receiving:
- Unit-2 Nursing Management of patients with diseases of male genitor-urinary tract.
- Unit-3 Nursing management of patients with disorders of breast.
- Unit -4 Nursing management of patients with diseases and disorders of integumentary system.
- Unit -5 Nursing management of patients with ophthalmic disorders and diseases
 - Hospital cornea retrieval:
- Unit -6 Nursing management of patients with disorders and diseases of ear, nose, and throat.
- Unit -7 Nursing management of patients with cardio vascular ,circulatory and haematological disorders.
- Unit -8 Nursing management of patient with communicable diseases
 - Diseases caused by:
- Unit – 9 Nursing Management of patients with sexually transmitted diseases
- Unit – 10 Nursing Management of patients with Musculo-skeletal Disorders and diseases.
- Unit – 11 Emergency and disaster Nursing.

➤ Community Health Nursing - 2

(Marks 10)

- Unit – I Health system in India (Organizational set-up)
- Unit – II Health care services in India
- Unit – III Health Planning in India
- Unit – IV Specialized community Health Services and nurse's role
- Unit – V Nurse's Role in National Health Programmes
- Unit – VI Demography and family welfare demography
 - Family Welfare
- Unit – VII Health Team
 - Role of nursing personnel at various levels
- Unit – VIII Vital Health Statistics

4th Year

➤ Midwifery

(Marks 20)

- Unit – I Introduction
- Unit – II Reproductive system
- Unit – III Embryology and foetal development
- Unit - IV Nursing Management of Pregnant Women
 - Investigations.
- Unit – V Nursing Management of women in Labour
 - A. First Stage of Labour
 - B. Second Stage of Labour
 - C. Third Stage of Labour
 - D. Conduct of Home Delivery
- Unit – VI Nursing Management of Baby at birth
- Unit – VII Nursing management of Mother during puerperium
- Unit – VIII Complications of pregnancy and its management
- Unit – IX High Risk pregnancy and its management
 - Ostemalacia, Sexually Transmitted Diseases, AIDS.
- Unit – X High Risk Labour and its management
- Unit – XI Complications of Puerperium and its management
- Unit – XII Obstetric operations
- Unit – XIII Drugs used in obstetrics
- Unit – XIV Ethical and legal aspects related to Midwifery and Gynecological Nursing.
 - Clinical Experience



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SYLLABUS

Diploma in Laboratory Assistant

ANATOMY

(Marks 10)

✓ Theory

✓ Introduction

- Different parts of the human body, common Anatomical terms, Anatomical Positions and important planes.
- Animal Cell
- Tissue of the body, classification and function
- Primary tissues of the body.

✓ Skeletal System

- Joints & Movements
- Muscle & Monce

✓ Gastro-intestinal System

- Mouth and Pharynx
- Salivary Glands and Tonsils
- Oesophagus and Stomach
- Location of different organs in the Abdomen in situ
- Liver and Gall Bladder
- Spleen and Pancreas.

✓ **Genito-Urinary System**

- Kidney
- Ureters, Bladder and Urethra
- Male Reproductive System
- Female Reproductive System

✓ **Respiratory System**

- Thoracic, Pleura and Lungs

✓ **Cardio Vascular System**

- Heart and Pericardium
- Arterial System
- Venous and Lymphatic System

✓ **Nervous System**

- Meninges and cerebrospinal fluid
- Brain, Spinal cord and the Nerves.

✓ **Loco-Motor System**

- **Parts of upper Limb** :- Bones Land marks and important vessels

PHYSIOLOGY

(Marks 10)

✓ Theory

✓ **Blood**

- Composition and General function of Blood
- **Description of Blood cells** :- Normal Counts and function.
- Anti-conagulants

✓ **Cardio-Vascular System**

- Function of heart and blood vessels.
- Circulation :- Systemic Circulation Pulmonary Circulation.

✓ **Respiratory System**

- Name of the Structure involved in respiration and their function.
- External and Internal respiration. How respiration and expiration are brought about.
- Transport of O² and CO² in the blood.
- Definition of respiratory Rate, Tidal Volume, Vital Capacity, Cyanosis, Hypoxia.

✓ **Excretory System**

- Functions of Kidney
- Formation & Composition of Urine Normal and abnormal constituents.

✓ **Skin**

- Functions of skin

✓ **Digestive System**

- Composition and functions of saliva, Mastication and deglutition.
- Functions of Stomach, Composition of Gastric Juice Pancreatic Juice, Bile and Succus entericus.

✓ **Endocrine Glands**

- Definition, name and the hormones secreted by them.
- Major action of each hormone.

✓ **Reproductive System**

- Male Genital System
- Female Genital System
- Names of Primary and Accessory Sex organs in male and Female. Secondary Sexual characters in male and Female.
- Functions of ovary, formation of Ova, actions of ovarian hormones.
- Functions of Testis – Spermatogenesis and actions of testosterone.

✓ **Blood Group**

- ABO and Rh. Basis for classification, basis for determination, importance and Blood Groups.

✓ **Cerebrospinal Fluid**

- Formation, composition and functions.

➤ **Practical**

- Demonstration of parts of body(Bony) landmarks on the surface
- Identification of cells and basic tissues.
- Skeletal System, Identification of Bones and Joints

- Demonstration of Interior of Thorax with organs in Situ.
 - Respiratory System and Pleurae
 - Heart and Blood Vessels
- Demonstration and Identification of various organs within abdomen
 - Liver and Gall Bladder
 - Peritoneum stomach and Intestine.
- Male Genital System
- Female Genital System
- Central Nervous System, Spinal Cord and Site of Lumbar Puncture examination will be :-
- Identification of bones or parts of skeletal system
- Identification of basic tissues under the microscope
- Identification of certain organs and Viva
- Surface marking of any of the important organs.
- Identification of sites of blood vessels or muscles for injections and site of lumbar puncture.
- Microscopic – Usage, maintenance and Minor repairs
 - Behaviour of RBC in isotonic, Hypotonic and Hypertonic Sodium Chloride Solution
- Identification of Blood Cells Focused under Microscope :-
 - RBC
 - Various types of WBC
 - Platelets
 - Reticulocytes.
- To obtain samples of Plasma and Serum
- Preparations of Anti-Coagulants : double oxalate and Sodium Citrate
- Haematocrit
- Identification of ruled area in Neubauer's Chamber RBC and WBC Pipettes and Wintrobe and Westergren Pipettes
- Demonstration of Normal Constituents of Urine and Abnormal Constituents E.G Glucose and Protein
- Record Writing.

CLINICAL BIO-CHEMISTRY

(Marks 25)

➤ Theory

- Elementary knowledge of Inorganic Chemistry Atomic Weight Molecular weight, Equivalent weight –Acids, bases and Salts Indicators Molar Solutions, Buffer Solution, Titration (Acid Base) Definition of Solution. Methods of expressing concentration – Dilution.
- Elementary knowledge of organic Chemistry – organic Compounds. Aliphatic and Aromatic. Alcohols, Aldehydes, ketones, Amines, Esters, Phenol, Acids Colloids etc.

- Elementary of Analytical Chemistry I Instrumentation, centrifuge Balances, Colorimeter, Spectrophotometer, Flamephotometer, Fluorimeter etc.
- Aims and Scope Biochemistry.
- Carbohydrates :- Importance, Definition, Classification some properties.
- Proteins – Aminoacids, essential amino acids, peptides, denaturation of proteins, Physiologically important proteins, functions of plasma proteins.
- Lipid – Definition, Classification, Steroids, Examples.
- Nucleic Acids- DNA and RNA their importance.
- Haemoglobin
- Enzymes and Co-Enzymes Elementary.
- Gastric Juice collection Acidities.
- Carbohydrate – Metabolism – elementary aspects, definition of Glucolysis, Glycogenolysis Hormonal regulation of Blood Sugar Diabetes-Mellitus – Ketosis, Gcosuria, Renal Glycosuria, Pentosuria.
- Metabolism of Lipids – elementary aspects, Triglyeerides, Cholestrol, Plasma Lipoproteins-Ketone bodies and Ketonuria.
- Protein Metabolism – Formation of Urea, Creatinine Proteinuria Edema, Transaminases
- Water and Mineral Metabolism – Dehydration, Calcium Phosphorus, Sodium, Potassium, Chloride, Iron, Iodine their physiological functions and disease state.
- Harmones – definition, functions of some important hormones.
- Blood and cerebrospinal Fluid functions of Blood & CSF.
- Urine Normal and abnormal tests.

➤ Practical

- Basic Techniques :-
- Cleaning of Glassware
- Preparation of Chromic acid wash solution
- Preparation of saturated solution.
- Types and use of pipettes.
- Balance types and uses.
- Preparation of percent solution / volume / volume components (V/V)
- Preparation of percent solution weight by volume (W/V) solution.
- Preparation of Molar Solution.
- Preparation of Buffer Solution.
- Indicators pH, determination of unknown solutions.
- Preparation of Normal Solutions.
- Titration – (Acid Base) Preparation of Primary Standards.
- Titration preparation of Normal Solutions
- Preparation of Protein Filtrates.
- Use and maintenance of centrifuge.
- Colorimeter – types, components, use and maintenance.
- Colorimetry.
- Colorimetry – Choice of filters.
- Spectrophotometer components and use demonstration.

- List of spare parts of equipments maintenance.
- Distillation of water-setting up Glass Distillation Unit and Metal water Distillation Unit.
- Diagnostic tests on Urine :-
 - Collection and preservation.
 - Physical characteristics and specific gravity
- U
 - Qualitative tests for urea, Uric Acid, Creatinine, Calcium, Phosphorus, Sodium, Potassium and Chloride.
 - PH.
 - Urea clearance and Creatinine clearance.
- Abnormal Constituents of Urine.
 - Qualitative test for Sugar, Albumin, Ketone Bodies, Blood, Bile Salt and Bile Pigment.
- Da.....tests on Blood.
 - Collection and preservation of Blood, Serum and Plasma.
 - Estimation of Blood Sugar.
 - Glucose Tolerance test.
- Non-Protein nitrogenous compound :
 - Determination of Serum Urea, Uric Acid and Creatinine
- Determination of Serum Protein
 - Albumin, Globulin, Fibrinogen & AG ratio.
- Serum Electrolytes.
 - Determination of Na*, K* and Cl.
 - Determination of inorganic Phosphorus
 - Determination of Calcium.
- Serum Enzymes :
 - Determination of transaminases (GOT and GPT)
 - Determination of Phosphatase (Alkaline phosphate and acid Phosphate)
 - Determination of Amylase
- Serum Bilirubin :
 - Determination of total and direct bilirubin
- Serum Lipids :
 - Lipid Profile
 - Determination of Serum Cholesterol
- Liver Function Tests.
- Diagnostic test on other body fluids
- Gastric juice :-
 - Test of Hcl. Blood and Starch
 - Free and Total acidity
 - Gastric function tests.
- Cerebrospinal Fluid
 - Determination of sugar
 - Determination of Proteins
 - Determination of Proteins

- Pandey's test.
- Kidney or renal function test :
 - Importance of renal function tests
 - Tests
 - Concentration / Specific Gravity test
 - Dilution test
 - Urea Clearance Test
 - Creatinine Clearance test
- Laboratory Maintenance and empowerment
 - Quality Control
 - Automation and Kits
 - Laboratory Management.

✚ MICROBIOLOGY AND PARASITOLOGY (Marks 25)

✓ Theory

✚ Requirement and use of Common Laboratory Equipment.

- Incubator, Hot Air Oven, Autoclave, Water bath, Anaerobic jar Vacuum Pump, Media Pouring Chamber, refrigerator, Centrifuge

✚ Microscope.

- Principal, Operation, Care and Use of Microscope

✚ Sterilization and Disinfection.

- Classification and General principles of Sterilization. Physical Chemical and Mechanical Methods Disposal of contaminated media, Syringes, Glassware, Apparatus.

✚ Classification and Morphology of Bacteria.

- **Brief Outline of :-**
 - Structure of cell, capsule, Flagella and spores
 - Growth Bacteria
 - Nutrition of Bacteria.
- **Staining of Bacteria :**
 - Simple, Grams, Ziehl-Neelsen, Albert, Spore Stain
 - Composition and preparation of Staining reagents
- **Cultivation of Micro Organisms – I (In Detail)**
 - Classification of Media, Composition of Laboratory culture media and Special Media
- **Cultivation of Micro Organisation – II (In Detail)**
- **Identification of Bacteria :**
 - Cultural Characters, Bio Chemical reactions and serotyping.
 - Normal Flora of micro Organisms in the human Body.
 - Gram positive and Gram Negative co....Staphylo.....Pneumococcus Neisseria (in brief)

- **Gram negative Bacilli :**
 - Salmonella, Shigella, E.Coli, Klebsiella, Proteus, Pseudomonas Vibrio cholera Haemophilus (In brief)
- **Gram Positive Bacilli**
 - **Aerobic**
 - ✚ Corynebacterium diphtheria
 - ✚ Mycobacterium tuberculosis and Mycobacterium leprae.
 - **Anaerobic bacilli – Clostridia**
- **Antibiotic Sensitivity test** – Principles and methods of determination of sensitivity.
 - Candida, Aspergillus. Dermatophytes
- **HIV & AID**
 - Brief Account
- Immunity, Antigens, Antibodies and Antigen antibody reaction and their applications in diagnosis of diseases.
- Principles, Procedures and Diagnostic significance of agglutination Precipitation. Neutralization and complement fixation reactions.
- Collection and processing of Clinical materials like Sputum. Urine Swabs, Stool, Blood CSF and Aspirates.

✓ **Parasitology :**

Brief Account of :- Morphology, Life Cycle, Pathogenicity and Laboratory Diagnosis of :-

E. Hystolytica, E, Coli Giardia. Trichomonas. Plasmodia Leishmania, Hook worm Round worm, Whip worm. Tape worm, Echinococcus granulosus, granulosus, Dracunculus, Wucheraria Bancrofti.

➤ **Practical**

✓ **Microbiology Practicals :**

- Personal safety and precautions.
- Emergency treatment for Laboratory accidents
- Care and Cleaning of Glasswares, Syringes, apparatus, preparation of Pasteur pipettes and sealing of ampules.
- Operation of Autoclave, Incubator, Water bath, PH meter, Scitz filter. Ph comparator, Vacuum pump.
- Operation of Anaerobic system.
- Urine C/s & Colony count.
- Pus C/S.
- Sputum C/S and Blood C/S.
- Sterilization, Packing Loading of materials in Autoclave, Hot Air Oven Inspissator.
- Handling care of Microscope
- Preparation of various Media Pouring and Storage
- Hanging Drop Method
- Collection of Clinical Materials – Blood Urine Stool Pus Swab, Throat Swab

- Receipt and Recording of specimen in the Laboratory and dispatch of specimen to referenc laboratory for tests.
- Gram Stain Z.N Stain Albert's Stain, Capsule Staining
- Incolution of Clinical Material in Media
- Isolation of Organisms in pure culture.
- Antibiotic Sensitivity test
- Disposal of contaminated materials
- Fungus Examination by wetmount of culture.
- Animal house training collection of blood of sheep and horse.

✓ Parasitology Practicals :

- Collection, Preservation and Transporation of fear material for examination of Parasites.
- Preparation of stained and unstained feecal material for parasites.
- Concentration Techniques of Stool
- Preservation of Parasites
- Identification of Ova and Cyst in stool. Occult Blood
- Parasites Blood films.
- Serology :-
 - Widal
 - VDRL
 - Ra Test
 - CRP test
 - ASO test
- Elisa for IIIV – 1 & 2.
 - HBsAg (Australia Antigen)
 - Pregnancy Test.
- Diagnostic Skin Test
 - Mauntoux Test
 - Casoni's Test

CLINICAL PATHOLOGY AND HAEMATOLOGY (Marks 30)

✓ Theory

- Introduction of Haematology
- Collection of Blood
- Antieoagulants
- Red Cell Count :
 - Haemocytometer
 - Methods
 - Caloculation.
- White Cell Count. (Total Leucocyte Count:
 - Morphology of White Cells.
 - Normal Values.
 - Romanowsky Stains

- Staining Procedures.
 - Counting Methods
- Absolute Eosi Nophil Count :
- Erythrocyte Sedimentation Rate (ESR)
 - Westergren's Method
 - Wintrobe's Method
 - Factors effecting ESR
 - Importance and Limitations
 - Normal Values.
- Packed Cell Volume.
 - Macro and Micro Methods
 - Normal Values.
- Haemoglobin Estimation and its clinical Importance
- Red Cell indices.
 - Calculations and importance.
- Retienloocyte Count :
 - Methods
 - Appearance
 - Normal Values.
- Sickle Cell Preparation.
- Osmotic Fragility Test
 - Scorning Test.
 - Qualitative and Quantitative Test
 - Normal Values.
 - Factors allocating fragility
 - Interpretation
- Peripheral Blood Film
- Preparation of Bone Marrow Smears
- Coagulation Tests.
 - Process of Coagulation
 - Factors of Coagulation
 - Tests of Coagulation
 - ✚ Bleeding time
 - ✚ Whole Blood Coagulation Time
 - ✚ Clot Retraction Test
 - ✚ Toorniquet Test
 - ✚ Platelet Count
- Urimanalysis
 - Normal Constituent.
 - Physical Examination
 - Chemical Examination
 - Microscopic Examination
- CSF Examination
 - Normal and abnormal Cell Count
- Semen Analysis
 - Physical Preterition
 - Motility
 - Morphology

- Coomb's Test.

✓ **Histotechnology :**

- Introduction
- Cell, Tissues and their functions
- Examination Methods of Tissues and Cells
- Fixation of Tissue :
- Classification of fixatives :
 - Simple fixatives and their properties.
 - Micro anatomical fixatives.
 - Cytological fixatives.
- Tissue Processing
 - Collection of specimen
 - Labeling and Fixation
 - Dehydration
 - Cleaning
 - Impregnation
- Section Cutting
 - Microtomes and their Knives
 - Techniques of Section cutting
 - Mounting of Sections
 - Frozen Section
- Staining
 - Dyes and their properties
 - Theory of Staining
 - Staining Techniques with haemotoxin and eosin
 - Mounting of Sections
 - Common Special Stains
- Decalcification
 - Fixation
 - Decalcification
 - Detection of end point
 - Neutralization and processing
- Exfoliative Cytology
 - Types of specimen and preservation
 - Preparation and fixation of smears.
 - Papanicolaou Staining Techniques
 - Sex Chromatin Staining
- Museum Technique.
 - Reception of specimen
 - Preparation of fixation
 - Restoration of colour
 - Preservation
 - Presentation
- Autopsy Technique
 - Assisting in Autopsy

- Preservation of organs & Processing of Tissue.
- Waste disposal and safety in laboratory.

➤ Practical

✓ **Pathology Practicals :**

Clinical Pathology :

- Use of Microscope & Care
- Haemoglobin estimation
- ESR
- RBC Count
- WBC Count
- Platelet Count
- Absolute Eosinophil Count
- Reticulocyte Count
- PCV
- Leishman Staining and PBF – Normal and abnormal Cells
- Bleeding time
- Clotting time
- Bone Marrow Aspiration – Staining, Staining for Iron Stores
- Prothrombin Time – PTI
- Tests for G6PD deficiency
- Fowtal Haemoglobin Estimation
- Serum / Urine Electrophoresis
- Coombs Test.

Urine Examinations

- Physical Examination Colour Reaction Odour Specific gravity Urinary Volume

Chemical Examination

- Tests for protein, 24 hours Urinary proteins
- Bence Jones Proteins
- Tests for sugar, Ketone bodies
- Urine for bile salts, bile pigments and Urobilinogen
- Microscopic examination of urine
- Semen Analysis.

✓ **Hestotechnology Practicals**

- Fixation Processing, Embedding, Section cutting and preparation of Slides.
- Staining of slides H&E Reticulin, PAS Masson Trichrome
- Sharpening of knives for microtomes
- Preparation of adhesive to fix the section to the slide.

Cytology Practicals

- Collection of samples for cytological examination of various body fluids
- Preparation and fixation of cytology smears. Giemsa and papanicolaon staining technique
- Sex Chromatin technique
- FNAC
 - Blood Bank
 - Theory
 - Introduction and Historical aspects
 - Human Blood Group Antigens, their inheritance and antibodies
 - ABO Blood Group System
 - Sub Groups
 - Source of Antigens, types of antibodies.
- Rh. Blood Group System.
 - Momenclature and types of Antigens
 - Mode of inheritance
 - Types of antibodies
- Other Blood Group System
- Techniques of Grouping and Cross Matching.
- Blood Collection
 - Selection and Screening of Donor.
 - Collection of Blood
 - Various anticoagulants used
 - Storage of Blood.
- Blood Transfusion.
 - Procedures and Complications
 - Blood Transfusion Reaction, Types, Investigation and Presentation of Transfusion Reaction.
 - Coomb's test.
 - Organisation, operation and Administration and Blood Bank.

➤ BLOOD TRANSFUSION TECHNIQUES

(Marks 10)

○ Practical

- ABO Grouping.
 - Slide Technique
 - Tube technique
- Cross Matching.
 - Methods of major Cross Matching
- Rh. Typing.
 - Rapid Tube Test
 - Saline Anti D
 - One Stage Albumin Technique
 - Two Stage Albumin technique
 - Coomb's antihuman Globulin technique
- Coomb's Test.
 - Direct Coombs
 - Indirect Coombs
- Donor Screening and Selection.
 - Identification
 - Recording
 - Haemoglobin estimation
 - Relevant Medical History of the Donor
 - Grouping and Typing of Donor's Blood
- Drawing of Blood.
 - Asepsis
 - Reassurance
 - Vein Puncture re and Collection
 - Care of Donor
- Blood Storage.
 - Anticoagulants preparation
 - Recording the details and storage of Blood
 - Maintenance and cleaning of various equipments used in Blood Bank.

➤ Laboratory Management and Ethics

(Marks 10)

- Role of the Laboratory in the Health Care Delivery System :
 - General
 - Human Health & Diseases.
 - ✚ Types of Diseases
 - ✚ Process of Diagnosis
 - ✚ Laboratory at different levels
 - ✚ Duties and responsibilities of Laboratory Personnel

- Laboratory Service in the Health Care Delivery System in India :
 - Laboratory Service in India
 - The Health Administration System in India
 - ✚ At the National Level\
 - ✚ At the State Level
 - ✚ At the District Level
 - ✚ At the Village Level
 - ✚ Voluntary Health Organisation in India

- Laboratory Planning :
 - General Principals
 - Laboratory Goals
 - Operational Data
 - ✚ Market Potential
 - ✚ Hospital / Laboratory relatives
 - ✚ Competitions
 - ✚ Laboratory Trends
 - ✚ Planning at different levels
 - ✚ Guiding Principles for planning Hospital laboratory Services :
 - Factors
 - Guiding Principles for Planning
 - Functional Criteria
 - Operational Demnad
 - Sections of a Hospital Laboratory
 - Common Area
 - Design Aspect
 - Space requirement.
 - ✚ Planning for a basic health Laboratory.

- Laboratory organization (Laboratory Management Techniques) :
 - General Principles
 - Components and Functions of a laboratory
 - Staffing the Laboratory
 - Job descriptions
 - Job specification
 - Work Schedule
 - Personnel re-arrangement and work load assessment.

- Care of Laboratory Glassware, Equipments and Instruments and Chemicals etc :
 - General Principles
 - Care and Cleaning of Glassware
 - Making simple glass wares in Laboratory
 - Care of equipments, Instruments and apparatus etc
 - Laboratory Chemicals their proper use and care
 - Labelling.

- Specimen Handlinging :
 - General Principles
 - Collection Techniques and containers for specimen
 - Types of specimens
 - Specimens entry
 - Specimens transfer and distribution and re-assignment
 - Specimens disposal
 - Specimens preservation.

- Laboratory Safety :
 - General Principles
 - Laboratory Hazards.
 - Safety Programmes
 - First Aid