



## **STATE PARAMEDICAL SCIENCE** **FACULTY**

### **Community Medical Services and ED**

#### **Year I**

<b>Objectives of the Course</b>		
As it is well known that the real India still lives in rural areas. This is one of the courses that help the candidate to give healthcare in these areas especially. In addition to this they can provide elemental medical help and prescribe General Harmless Allopathic Medicine as per the directive of Hon. Supreme Court.		
<b>Paper I : Pathology</b>		
<b>Sr. No.</b>	<b>Topics</b>	<b>Hrs.</b>
1.	Introduction to Clinical Pathology – Terminology, branches, importance of each branch	03
2.	Haematology – Composition, formation and function of blood.	05
3.	Blood Collection – Collection and preservation of blood for investigation. Anticoagulants used in hematology	05
4.	Hematocrit – Methods of measurement, indices (PCV, MCV, MCH, MCHC)	05
5.	Anaemia – Meaning and its detailed classification	05
6.	Estimation of Haemoglobin – Structure of haemoglobin, estimation (Methods based on development of color, oxygen combining capacity and iron content)	10
7.	Morphology of blood cells and their identification.	08
8.	Erythrocyte Sedimentation Rate (ESR) – Methods of measurement, factors effecting, significance of measurement	08
9.	Urine Analysis – Collection and preservation, physical, chemical and microscopic examination.	05
10.	Stool Analysis – Macroscopic, microscopic and chemical examination	05
11.	CSF Examination – Cell count (Leucocyte, differential count), biochemical examination of CSF	05

12.	Semen Analysis – Collection of sample, physical properties,	05
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	motility of spermatozon, morphological examination of spermatozon	
13.	Blood Banking – Techniques of blood collection, anticoagulants used in hematology, common aspects of immunohematology, 3 antigen antibody reactions, ABO blood group system	20
14.	Rhesus Blood Group System – Antigens, significance of Rh typing, slide technique	05
15.	Blood Transfusion – Pre-transfusion (compatibility testing), instructions, registration of donors, transfusion reactions, blood component transfusion	20
16.	Histopathology – Introduction with terminology, grossing meaning, ways and importance, lab safety and hazards	10
17.	Fixation – Aim, principles, types	05
18.	Decalcification – Importance and methods	05
19.	Tissue Processing – Meaning, importance and methods	05
20.	Hematoxylin – Properties (progressive and regressive), preparation methods. Eosin – Methods of staining, staining methods to demonstrate special/ specific tissues	10
21.	Cytology – Terminology, importance and introduction to fields of study.	05

#### Reference Books

1.	Robbins and Kumar Basic Pathology: First South Asia Edition	Kumar and Abbas	Elsevier
2.	Textbook of Pathology with Pathology Quick Review and MCQs	Harsh Mohan	Jaypee
3.	Textbook of Medical Laboratory Technology	Ramnik Sood	Jaypee

#### Paper II : Anatomy & Physiology

Sr. No.	Topics	Hrs.
1.	Terminology used in Anatomy, Bones – Names and location. Basic orientation and organization of human body from cell to organ system	06

2.	Human cells and tissues – Muscle, blood, gland, bone, nerve, reproductive cells and tissues – Organization and their functions	15
3.	Directional references of human body	02
4.	Body cavities – Dorsal and ventral	02
5.	Skeletal System – Terminology, position, basic details. Joints – Terminology, types, structure	20
6.	Integumentary System – Terminology, basics	02
7.	Gastrointestinal System – Terminology, position, structure, parts and their functions. Digestive process, absorption and defaecation.	10
8.	Respiratory System – Terminology, position, structure, parts and their functions, breathing mechanism.	10
9.	Urinary System – Terminology, position, structure, parts and their functions, process of urine formation and voiding.	10
10.	Male Reproductive System – Terminology, position, structure, parts and their functions	05
11.	Female Reproductive System – Terminology, position, structure, parts and their functions, menstrual cycle.	05
12.	Endocrine System – Terminology, position, structure, function and regulation of all hormones	10
13.	Brain and Spinal Cord – Terminology, structure, functions	05
14.	Blood – Terminology, composition, lymphatic details and clotting system.	05
15.	Sensory organs (eyes, ears, nose and tongue) – Terminology, functions.	10
16.	Cardiovascular System – Terminology, structure. Vessels entering and leaving the heart. Arterial and venous tree.	10
17.	Lymphatic System – Terminology, functions of WBCs, spleen, tonsils and lymph nodes	05
18.	Immune System – Terminology, components, mechanism of defense	05

**Reference Books**

1.	An Integrated Approach to Health Sciences	Colbert Bruce, Jeff Ankney, Joe Wilson, John Havrilla	Cengage Learning
2.	Fundamentals of Anatomy and Physiology	Indu Khurana Et Al	Oxford University Press
3.	Human Anatomy And Physiology For Courses In Nursing And Allied Health Sciences	N N Yalayyaswamy	CBS Publishers & Distributors

**Paper III : Health & Hygiene**

Sr. No.	Topics	Hrs.
1.	Food – Importance, nutrients derived. Definition of energy and calorie.	05
2.	Nutrition – Meaning, importance and sources of various nutrients (like carbohydrates etc.) Digestion, metabolism and absorption of nutrients. RDA, nutrient requirement of male or female and for all age groups. Concept of malnutrition (causes, signs-symptoms and treatment) and over nutrition (overweight and obesity related health risks.	20
3.	Health – Concept, classification and importance, definition, dimension and indicator.	05
4.	Hygiene – Concept, classification (domestic, community and environmental) and importance	10
5.	Environment and Sanitation – Determinants (air, water, light), ventilation, house sanitation, disposal of waste, ecosan system development within community and effects of noise and its reduction. Sanitation and its importance. Issues related to sanitation and environment. Sustainable, effective water management and filtration. Personal hygiene, sustainable solution to WASH issues. Health and hygiene of newborn, children and women. Communicable diseases – Bacterial and viral agents, hosts and carriers, effects and	30

	prevention Rodents and arthropods communication, effects and prevention Insect carriers and communication. Parasite Control, effects and prevention.	
6.	Home Nursing – Preparing a sick room at home, hygiene of the patient, bathing, posture change, continuous monitoring, medication and training of family members. Immunization and dental care of children. Observing and recognizing symptoms of infectious and non-infectious illness at home, preventive measures, early diagnosis, isolation and notification. Nursing patients of different age groups like old and children.	20
7.	First Aid – Importance and rules. Concept of emergency, Transportation of injured. First aid concepts practice for burns, fractures, accidents, poisoning, drowning, hemorrhage, insect bite etc.	15
8.	ORS, Breast Feed, Healthy Foods – Factors effecting growth and development, physical, social and psychological development of children. Nutritional requirements – Assessment, exclusive breast feeding, complimentary feeding, problems related, breast feeding counselling	10
9.	Child Psychology – Child development and corresponding normal behavior, theories of development. Environmental factors influencing effecting child's development and hence behavior.  Childhood Problems – Problems relating to development, behavior, habit disorders (especially toilet training) and discipline. Child counseling and guidance.	20
<b>Reference Books</b>		
1.	An Introduction to Community Health Nursing	Dr. Mrs. Kasturi Sundar Rao B.I Publications
2.	Treatise on Hygiene and Public Health	Ghosh B.N. A. Scientific Publishing
<b>Lab</b>		
1.	Visit to water purification plant	
2.	Visit to dairy farm	
3.	Visit to primary health center	

4.	Visit to panchayat office
5.	Visit to slaughter house
6.	Visit to sewage disposal
7.	Visit to block development office

#### **Paper IV : Pharmacology**

<b>Sr. No.</b>	<b>Topics</b>	<b>Hrs.</b>
1.	Pharmacology – Meaning, importance. Terminologies involved	05
2.	Pharmacokinetics – Basic concepts, drug –administration (enteral routes and parenteral routes), absorption (biological, physicochemical factors effecting), distribution (compartments, protein binding, apparent volume of distribution), metabolism and excretion	10
3.	Pharmacodynamics – Basic concepts, mechanism of action, organ system effects, adverse drug reaction, drug-receptor interactions, combined drug action	10
4.	Pharmacological Classification of Drugs – Drugs Acting on CNV (Central Nervous System) - General anaesthetics, sedatives and hypnotics, analgesic antipyretics and non-steroidal, anti-inflammatory drugs, anti-rheumatic and anti-gout remedies, centrally acting muscle relaxants etc., local anesthetics. Drugs acting on autonomic nervous system. Cholinergic drugs, anticholinergic drugs, anticholinesterase drugs. Adrenergic drugs and adrenergic receptor blockers. Neuron blockers and ganglion blockers. Neuromuscular blockers.	10
5.	Cardiovascular Drug – Cardiotonics, antiarrhythmic agents, anti-anginal agents, antihypertensive agents, peripheral vasodilators and drugs used in atherosclerosis	10
6.	Drugs Affecting Blood Formation – Coagulants and anticoagulants, antithrombotic & antiplatelet drugs, haematinics, haemostatic, blood substitutes and plasma expanders.	10
7.	Respiratory System Drug – Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents.	10
8.	Drugs Affecting Renal Function – Diuretics and antidiuretics, urinary antiseptics, cholinergic and anti-cholinergic,	10

	acidifiers and alkalanizers	
9.	Drugs for Hormonal Disorders – Insulin & oral hypoglycemic, thyroid supplements and suppressants, steroids, anabolics, uterine stimulants and relaxants	10
10.	Contraception and other Pregnancy Drugs Oral contraceptives, other estrogen-progesterone preparations, corticotrophine & gonadotropines, adrenaline, prostaglandins, calcitonins, calcium salts.	10
11.	Digestive System Drugs – Anti-emetics & emetics, purgatives, antacids, cholinergic & anti-cholinergics, fluid and electrolyte, anti-diarrhoeals, histamines	10
12.	Drugs for Microbial Infections – Penicillin, streptomycin, tetracyclines and other antibiotics, anti-fungal agents, anti-viral drugs, anti-leprotic drugs	10

#### Reference Books

1.	Essentials of Medical Pharmacology	K. D. Tripathi	Jaypee Brothers
2.	Essentials of Pharmacology for Nurses	Paul Barber & Deborah Robertson	Tata Mc Graw Hill

#### Lab - Pharmacology

1.	To study the effect of potassium and calcium ions, acetylcholine and adrenaline on frog's heart.
2.	To study the effect of acetyl choline on rectus abdomens muscle of frog and guinea pig
3.	To study the effect of spasmogens and relaxants on rabbits intestine.
4.	To study the effect of local anaesthetics on rabbit cornea
5.	To study the effect of mydriatics and miotics on rabbit's eye.
6.	To study the action of strychnine on frog.
7.	To study the effect of digitalis on frog's heart.
8.	To study the effect of hypnotics in mice.
9.	To study the effect of convulsants and anticonvulsant in mice or rats.
10.	Taming and hypnosis potentiating effect of chlorpromazine in mice/rats.
11.	To study the effect of diphenhydramine in experimentally produced asthma in guinea pigs.



