

CONTENTS

Preface	III
What is Physiotherapy?	IX
Can examine and assess deficits of neurological & musculoskeletal systems.	XVII
Can maintain rich communication with related consultant surgeons & physicians & follow their order	XXXV
Can give psychological support to the patients and their relatives	XXXVII
Chapter-1 BASICS OF PSYCHOLOGY	1
Basics of intelligence, personality and learning.....	8
Basics of Sensation, Attention and Perception.....	11
Basics of health Psychology	14
Chapter-2 BASICS OF BIOMECHANICS & KINESIOLOGY, EXERCISE THERAPY & ELECTROTHERAPY	18
Definition of Biomechanics.....	18
Axis and Planes.....	23
Kinematics.....	30
Kinetics.....	33
Gravity.....	36
Centre of gravity	40
Line of gravity	42
Base of support	45
Equilibrium.....	47
Fixation and stabilization	50
Forces and type of forces.....	57
Levers of the body and their mechanical advantage	64
Pulleys	69
Springs.....	71
Elasticity.....	75
Muscle contraction and types	78
Range of muscle work.....	80
The Group actions of muscles	83
Spurts and shunt muscles	90
GAIT	92
Posture.....	97

Joint structure and functions of all joints of the body type, articulating surface, Osteo-kinematics, Arthrokinematics, Patho-mechanics	101
Physics and Basic Electrical Components, electromagnetic radiation, conductors and non-conductors of electricity, Transmission of heat, Physical effect of heat, static electricity, electric shock, earth shock.....	106
Electromagnetic Radiation (EMR).....	112
Conductors and Non-Conductors Of Electricity	114
Transmission of Heat.....	118
Physical Effects of Heat	119
Thermal Energy	121
Methods of heating the tissue.....	130
Paraffin Wax Bath.....	134
Hot Pack	136
Moist Packs.....	139
Infra-red (IR) rays	142
Ultraviolet (UV) rays	145
Low frequency currents.....	148
Faradic current	151
Galvanic current.....	154
SD Curve.....	157
Pain Gate Theory	158
Iontophoresis.....	159
Tens	162
IFT.....	164
Cryotherapy	165
Medium Frequency current.....	167
High Frequency currents	169
SWD (Shortwave Diathermy).....	171
MWD (Microwave Diathermy)	172
US (Ultrasound Therapy)	174
Laser.....	176
Mechanical traction and CPM	178
CPM	181
Lumbar and Cervical traction	182
Massage therapy (Soft tissue manipulation).....	188
Chapter-3 GENERAL ANATOMY & PHYSIOLOGY (CYTOLOGY, HISTOLOGY, OSTEОLOGY & ONLY BASICS OF ALL ORGAN SYSTEMS OF BODY)	193

General orientation about parts of human body, various terms used in anatomy, total number of bones, their names and location, basic idea about organization of body, from cell to organ system.....	193
Structure of animal cell, cell organelles and their function	211
Human tissue, types, structure and function	213
Osteology: Names, Location, Identification And Basic Details Of All Bones, Identification And Basic Details	217
Each Bone Has a Unique Shape, Size and Function	217
Bones are Classified Into Five Types: Long, Short, Flat, Irregular, And Sesamoid	217
Bones Provide Support, Protection, Movement and Blood Cell Production....	217
Joints connect bones, allowing for movement and flexibility.....	217
Joints: types, basic structure and functions.....	223
Hinge Joints	224
Ball and Socket Joints	224
Condyloid Joint (also known as a Condylar Joint or Ellipsoidal Joint) are.....	229
Pivot Joint.....	229
Gliding Joint	230
Saddle Joint.....	231
Skin and appendages	232
GIT- location, gross structure, various parts and their functions	235
Ingestion	236
Digestion	236
Absorption	237
Respiratory tract location, gross structure, various parts and their functions ...	238
Urinary tract location, gross structure, various parts and their functions	242
Male reproductive system- gross structure and functions of different parts....	245
Female reproductive system- gross structure and functions of different parts and explain menstrual cycle.....	247
Endocrine system- Hormones secreted by Pituitary, Thyroid, parathyroid, Pancreas, Adrenal cortex, Adrenal medulla, Gonads and functions of different hormones	250
Gross structure of brain and Spinal cord	253
Blood composition and functions	263
Gross structure and functions in detail of Sensory organs.....	267
Basic gross structure of heart,.....	280
Vessels opening into heart and leaving the heart	280
Lymphatic system structure and function.....	285

Immune system - Components and various mechanism of defence.....	288
Chapter-4 ONLY BASICS OF RELEVANT PATHOLOGY, PHARMACOLOGY & MICROBIOLOGY.....	293
Basic steps of Acute and chronic inflammation.....	293
Basic of Neurosis and Apoptosis	297
Basics of Shock.....	302
Basics of disorders of Blood coagulation system	320
Disorders of Immune System of body.....	324
Modes of disease transmission and prevention of infection	330
Sterilization and methods of Sterilization used in hospitals	333
Basic idea about types of Bacteria, Virus and Fungi.....	339
Fungi	343
Routes of drug administration.....	344
Adverse effects and side effect of drugs.....	350
Basic idea of Analgesics Opioid and NSAIDs and Skeletal muscle relaxants..	351
Basic idea of drugs uses in Cough and expectorant	358
Basic idea of drugs used in B asthma and COPD	360
Basic idea of drugs used in GIT	363
Basic idea of Anti Microbials	365
Chapter-5 DETAILED ANATOMY OF BONES, MUSCLES, JOINTS, NERVES OF BODY.....	380
General structure of long bones, flat bones (Histology and gross)	380
Detailed Histology and Physiology of skeletal muscles, Ligaments and Tendon	383
Ligaments	385
Tendons	386
Details of bones of Pectoral Girdle	387
Details of bones of upper Limb	387
Details of bones of Pelvic Girdle	391
Details of bones of Lower Limb	393
Details of bones of vertebral column	398
Details of Rib and Sternum.....	399
Details of muscles of Upper Limb	401
Details of muscles of Lower Limb.....	407
Details of muscles of Abdomen and Pelvic floor.....	415
Details of muscles of Neck.....	417

Details of Shoulder Girdle, Shoulder, Elbow, Wrist, Hip, Knee and Ankle, Subtalar joints and common joint problems	420
Details of basics of other joints of body	441
Details of brachial, sacral and lumbar plexus	450
Details of spinal and cranial nerves.....	454
General structure of Arteries, veins, capillaries	458
Arterial and Venous tree of body	466
Chapter-6 HAND HYGIENE.....	513
Basic Life Support (BLS) & Cardio-Pulmonary & CODE BLUE	513
Hand hygiene & method of Hand washing.....	513
Prevention of cross infection	516
Code Blue	521
REFERENCES	523