HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

F.SC PHYSIOTHERAPY TECHNOLOGY

CURRICULUM 2013

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

F.SC PHYSIOTHERAPY 1ST YEAR

S.No	Subject/Papers	Course	Marks	
1.	English – II	According to BISE Peshawar	Theory 100	Practical Nil
2.	Urdu – II	According to BISE Peshawar	100	Nil
3.	Pak Study	According to BISE Peshawar	50	Nil
4.	Basic Medical Sciences Anatomy & Physiology	Teacher Lecture Notes	75	25
5.	Applied Sciences Physics & Chemistry	Teacher Lecture Notes	75	25
6.	Physiotherapy Techniques –I	Teacher Lecture Notes	75	25
		Grand Total=	**475 + 75 = 550**	

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- APPLIED SCIENCES (PHYSICS & CHEMISTRY)

Physics

1. The nature of Science, Divisions of Science, and Scientific method
2. The Measurement – Metric System, scientific notation, units of mass, length and volume
3. Mechanics – force, equation of motion, laws of motion
4. Gravity – speed, velocity and acceleration, center of gravity, weight and mass
5. Work, Power, Energy
6. Simple machines-principles of machines, friction, levers
7. Density, specific gravity, Archimedes's Principle
8. Pressure – Definition, pressure in hydrostatic fluids, pressure in flowing liquids
9. Gas Laws – Boyle's and Charles laws, gas laws applicable to respiratory process effects of changes in atmospheric pressure on physiology of the human body
10. Heat – nature and measurement, effects of heat, methods of transfer
11. Light – Transmission, reflection and refraction of light, lenses
12. Sound – how it is produced, characteristic, transmission, reflection of sound, echoes, ultrasound
13. Electricity – Atomic structure, free electrons, conductor and insulators, Definition of current, P.D., Resistance, Resistance laws, Ohm's law, circuit, series circuit, parallel circuit, Power and energy.
14. Magnets and Magnets – Properties, magnetic field, magnetic lines of force, electromagnet, magnetic effect of electric current, Motor and generator effect of current, magnetic and electric induction, Transformer.
15. Charge - Coulomb's law, capacitor and capacitance, capacitor in series and in parallel
16. A.C. Definition, RMS value, peak value Sine wave
17. Electromagnetic Radiation – Spectrum, ionization, excitation, Inverse Square law frequency, wave length, terms and their definitions

Practical Physics

a. To find the unknown force
b. To find the center of gravity of an irregular shape
c. To verify the law of reflection
d. To find the path of light passing through a prism
e. To find the focal point of a lens
f. Determine the critical angle of glass using a glass prism
g. Determine the focal length of convex lens
h. To find the reflective index of a liquid using a concave mirror
i. Determine the speed of sound at a room temperature

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- APPLIED SCIENCES (PHYSICS & CHEMISTRY)

Chemistry

1. Composition of Substance – Atoms and molecules, symbols, formulae, Elements and compounds, chemical formula
2. Chemical Reactions and Equations
3. Water – Physical and Chemical properties, Deliquescent, efflorescent, hygroscopic substances, solvent properties, Hydrolysis, Water cycle, impurities, hard and soft water
4. Solution – Terms, Solubility, Concentrations, dilutions, properties of solution
5. Acid, Bases, and Salts
6. pH Scale and buffer system
7. Electrolytes and electrolysis
8. Amines and amides
9. Proteins – compositions, properties of amino acids, classifications
10. Carbohydrates
11. Lipids

Practical Chemistry

1. How fitting up a wash bottle is prepared?
2. To pacify the given sample of impose naphthalene crystallization
3. To pacify the given sample of naphthalene by sublimation
4. To determine the melting & boiling point of organic compound
5. To prepare the standard solution of acid or base
6. To prepare a standard solution of exotic acid and with its help standardize a solution of NaoH
7. To prepare approximates N/10 solution of H_2SO_4 determine its exact normality by titrating it against standard N/10 NaoH?
8. To standardize a given solution by direct method
9. To standardize a given solution by indirect method

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- BASIC MEDICAL SCIENCES (ANATOMY & PHYSIOLOGY)

Anatomy

The depth of the subject will only be diagram and labeling of the diagram

Introduction

The study of human cell and functions of organelles, Nucleus, DNA helix, RNA, genetic code, Chromosomes
Cell Division
Mitosis and Meiosis of cell

BASIC TISSUES

- Different Types of tissues
- Connective tissues
- Epithelial tissues
- Muscle tissues
- Nervous tissues
- Blood tissues

The circulatory system-Structure of heart. Different chambers of heart, main arteries arising from the heart and main veins of the heart, branches of arch of aorta, Thoracic aorta, abdominal aorta, main vessels of upper and lower limbs.

Lymphatic System

The Gastro Intestinal Systems

- Mouth
- Pharynx
- Esophagus
- Stomach
- Small Intestine
- Large Intestine
- Accessory Organs (Liver, Spleen, Pancreas & Gall Bladder)

Respiratory Systems

1. Organs of respiration
2. Upper respiratory tract
3. Lower respiratory tract

The Skin

1. Epidermis
2. Dermis
3. Sebaceous glands
4. Nails

The Nervous System

1. CNS central nervous system
2. Peripheral nervous system
    i. Different parts of nervous system
    ii. Structure of cerebrum, mid brain, cerebellum, Pons and medulla oblongata, spinal cord and
    iii. Autonomic nervous system

The Endocrine Glands

Short Description and position of:-

a. Pituitary gland
b. Thyroid gland
c. Parathyroid gland
d. Adrenal gland
e. Hormones of Testis
f. Prostate
g. Ovaries
h. Pancreas and Thymus

The urinary system

Structure of kidney, urethra, urinary bladder, prostate gland and ureter. Difference of right and left kidneys.

The Reproductive System

a. Male reproductive system
b. Female reproductive system
c. Different organs of male reproductive system, structure of testis, the scrotum, seminal vesicles, prostate gland, the penis and urethra
d. Different organs of female are reproductive system, Mammary glands, structure of ovaries, uterus, cervix and vagina.

The Skeleton

Different bones of skull. Bones of upper limbs, lower limb, thorax, pelvis and vertebral column, Structure of individual bones, scapula, humorous, radius, ulna, femur, tibia and hip bones, hands, foot, ribs, sternum, clavicle, sacrum, thyroid,, hyoid cricoids.

The Joints

All joints and their movements
Main muscles of body

The Special Senses:

Brief anatomy of eye. Three coats of eye ball. Brief anatomy of ear Outer, middle and inner ear, nose-inner and outer, tongue, salivary glands, skin.

Recommended Books:

Foundations of anatomy and Physiology by Kathleen J.W.Wilson.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS BASIC MEDICAL SCIENCES (ANATOMY & PHYSIOLOGY)

Physiology

The Physiology of the following topics will consist of brief description of the function of part of the body.

The Cell and its Functions

1. Structure and Functions of a human cell
   The cytoplasm and its organelles
   Comparison with animal cell
   Functional System of the cell
2. Endocytosis & Phagocytosis
   Ingestion and digestion by the cell
   Functions/Structures of Golgi apparatus
3. Cell Division
   Mitochondria and reticulum
   Cell reproduction

Tissues and Fluids of Body.

Cardiovascular System (Heart and Circulation)

Description of Heart and vessels (arteries, vein and capillaries)
Cardiac cycle, diastole and systole
Functions of atria and ventricles
Functions of valves
Heart pumping (work output of heart)
Cardiac output, stroke volume etc
Heart sounds

Lymphatic System Function

Respiratory System

Basic mechanism of respiration
Inspiration expiration mechanism
Pulmonary capacities and pulmonary volumes
Respiratory rate and tidal volume definitions
Functions of respiratory pathways (Chemical & Neural Control)
Artificial respiration, mouth breathing
Transport of oxygen and carbon dioxide in the blood and body fluids

Gastro Intestinal Tract.

Ingestion of food, mastication (Chewing)/ Digestion and Swallowing
Functions of stomach
Storage function, mixing of food

Secretions of GIT

Saliva, Salivary glands functions of
Saliva, Gastric Section, Functions of
Pancreatic Secretion, Bile Secretion and its function

Secretions of the small intestine, secretion of large intestine, Digestion and absorption of food.

Metabolism

Introduction to fat and Protein Metabolism

Introduction to Carbohydrates Metabolism, Role of Glucose in Carbohydrate metabolism, Transport of glucose in body tissue, Lipid metabolism transport of lipids in the blood.

Transport from the GIT, and fat deposits, Proteins metabolism basic properties of protein, use proteins for energy, Vitamins and their metabolic role.

Endocrine Glands

Endocrine glands and their hormones
The pituitary hormones and their functions
The thyroid hormone, the adrenocortical hormones
Parathyroid hormones and their functions

Reproductive System

Functions of the male reproductive organs
Functions of the female reproductive system
Testosterone and other male sex hormones
Pregnancy, lactation and female hormones

Special Senses

Introduction to Sensory organs and their function
The eye functions and elements of eye, Sclera, Choroid retina. The eye as a camera, Sense of Hearing tympanic membrane and external ear, middle ear and vesicles internal ear and its functions.
Conduction of sound to the cochlea
The functions of Tongue and salivary glands
The Functions of Nose and Tonsils/Adenoids
The Functions of Skin and its appendages

Nervous System

General design of nervous system types and parts of nervous system Functions of brain, cerebrum spinal cord. Cranial nerves. Autonomic nervous system (Parts and Functions).

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- PHYSIOTHERAPY TECHNIQUES 1ST YEAR

ELECTRO MECHANIC AND ELECTROTHERAPY

1. **CURRENT FOR TREATMENT:**
   - Sinusoidal and Faradic currents
   - High frequency current production
   - Low frequency currents
   - Interrupted direct current
   - Electro diagnosis
   - Inferential Therapy

2. Electro Checks/Electrical Shocks
3. Physical effects of heat and temperature. Transmission of heat wave length and frequency
4. Infra red rays and its sources
5. Ultraviolet ray and its sources choice of lamp for treatment
6. **Sound Waves:**
   Sound waves and their velocity, reflection and refraction of sound waves, characteristics of tone, resonance, interference of waves
7. Currents from cell and Main's supply, Ohm's Law: Electrical Units. Resistance in series and parallel. Chemical effects of currents

ELECTROTHERAPY

(APPLICATION OF ELECTROMECHANICS TO ELECTROMEDICAL WORK)

1. **Technique and application of Galvanic Current.**
   Its effects and Uses
   Indications and Precautions
2. **Technique and application of Faradic current**
   Its effect, uses, dangers, indications and contra-indications
3. **Short Wave Diathermy**

   - Introduction and general consideration
   - Heating of Tissues
   - The machine circuit
   - The patient circuit
   - Physiology effects of SWD
   - Therapeutic effects of SWD
   - Dangers in SWD

A) CONDENSER FIELD METHOD

i. Cross fire ii) Through & Through

ii) Co Planar iii) Mono Planar

i. Cable method V) Disk Method
ii. Pads Methods

B) CABLE METHOD:

Special Techniques: Dangers and precautions. Contra-indications

4. **Infra Red Rays**
   - Physiological effects of Infra-Red Rays
   - Therapeutic effects of Infrared rays
   - Technique of irradiation
   - Dangers and precautions
5. **Ultrasonic:**
   - Introduction
   - Characteristics
   - Physiological effects
   - Physical effects
   - Therapeutic effects
   - Technique of application

PRACTICALS OF ELECTROTHERAPY

LOW FREQUENCY CURRENTS

Electrical Stimulation

1. Types of current used – low or high
2. Apparatus – Developing diagram, identification of main parts, electrodes, connections etc.
   a. Low frequency currents – types like TENS etc
   b. Indications for use like Bell's Palsy
   c. Methods of use
   d. Safety precautions for self and for patients
3. Study of electrodes and their application
4. Study of methods to avoid electric shock
5. Study of the situations in which burns may occur
6. Study of different faults in the system and their effects

HIGH FREQUENCY CURRENTS

1. Study of short wave diathermy and types of currents used
2. Study of production of heat by low and high frequency currents
3. Study of movement produced by low frequency currents

4. Developing a general diagram of short wave diathermy and studying different parts at the machine available in the lab
5. Studying Pads, Disc & cable
6. Study of physiological effect of short wave diathermy
7. Study of therapeutic effects of SWD
8. Study of indications for use of SWD
9. Study of methods for avoiding burns and contraindications
10. Study of applications of SWD on soft tissues such as eyes

BIO – MECHANICS

1. Preliminary exercise on measurement, involving different geometrical dimensions
2. Force, measurements of force and its effects. Tensile & compressive forces
3. Moments, its kinds, Effects of opposite moment & principle of moments
4. Reaction or supporting forces of a horizontal beam & reaction at sacrum
5. Work done in Machines used for lifting, principle of work applied to a machine
6. Some simple machines
7. Power, power of engines & pumps its mechanical efficiency
8. Transmission of motion & power
9. The inclined plane and screw
10. Energy
11. Application of physical principles to body system
12. Mode of transmission of heat
13. Light
14. Wave motion, different kind of wave motion reflection & refraction of waves
15. Sound, factors necessary for production of sound. Sound as a energy. The nature of sound, propagation of sound in air, water & solid. Characteristics of sound
16. _____ principle

PRACTICAL

1. To find the centre of gravity of a irregular shape bodies
2. To verify the principle of lever load x load = Effort x effort area
3. To resolve the forces, of a weight rolling down on an inclined plane
4. To resolve the different forces sat different angle on a single joint and to find their net effect on that joint
5. To find the centre of gravity of a lever area place on a fulcrum under specific loading
6. Toe find the unknown reaction of a lever under a specific concentrated loading
7. Toe resolve an inclined force making an angle 0 with X-asis and to find the component forces of that inclined force by making use of trigonometric function.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

ELECTRO – MAGNETISM

WEEKS

1. Introduction to he course
2. The structure of the atom
3. Isotopes
4. Ionization and excitation
5. Electric charges
6. Electric introduction-electroscopes
7. Electric charge an electrical potential
8. Capacitance and capacitors
9. Electric current-ampere; volt, resistance
10. Resistance and ohms law
11. Circuit laws
12. Energy and power
13. The heating effect of electric current
14. Sources of electrical energy
15. Magnetism-introduction
16. The magnetic effect of electric current
17. Applications of magnetic effect
18. Electro – magnetic induction
19. Mutual induction and self-induction
20. Introduction of A.C
21. Transformer-theory
22. Transformer-practical aspects
23. Introduction A.C. Circuits
24. Reactance, resonance, impedance
25. Power factor-power in single-phase circuit
26. Single phase three phase, comparison and contrast
27. Electrical distribution system in Pakistan
28. Different supply systems
29. A.C. in three – phase system
30. Introduction to electrical machines
31. Generator-A.C. & D.C. Principle, working-main parts
32. Motor-Principle, main parts working
33. Electrical measuring instruments and measurements
34. Indicating instrument-types, Principle and working
35. Thermionic emission and P.N. Junction
36. Diode structures and working
37. Characteristic of diodes
38. Triode-its working and characteristics
39. Rectification
40. Introduction to amplification

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PHYSIOTHERAPY INSTRIMENTS

Physiotherapy equipment application of electrical technology in physiotherapy equipment. Control and operative component of the equipment like switches circuit breakers, relays and other details as follows.

1. Ultra Sonic Therapy Unit (Circuit Description, Dosage control, Constant and pulsed Operation).
2. Microwave Diathermy
3. Surgical Diathermy Machines
4. Preacautions to be used while using Physiotherapy Instruments
5. Baths all types
6. Exercise Machines – Types, Usage and Brief introduction to circuits.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

F.SC PHYSIOTHERAPY Technology 2ND YEAR

S.No	Subject/Papers	Course	Marks	
1.	English – II	According to BISE Peshawar	Theory 100	Practical Nil
2.	Urdu – II	According to BISE Peshawar	100	Nil
3.	Pak Study	According to BISE Peshawar	50	Nil
4.	Basic Medical Sciences Public Health & First Aid	Teacher Lecture Notes	75	25
5.	Applied Sciences Computer & Hospital Safety	Teacher Lecture Notes	50	25
6.	Physiotherapy Techniques –II	Teacher Lecture Notes	75	50
		Grand Total=	**450 +**	**100 = 550**

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPER:- APPLIED SCIENCES (COMPUTER SCIENCES & PATIENT SAFETY)

Computer Sciences

Note: This is an introduction to Computer Science. A brief description and definitions of terms will be taught to the students.

1. An over view of Computer System
2. The shapes of computer today-Super Computer, Main frame, minicomputer, works stations and PC
3. Input methods-Key board, Mouse
4. Alter native methods of input - hand devices, optical devices, Audio-visual input devices
5. Monitors and sound system –Monitors- PC. Projectors, sound system
6. Printer and brief introduction to its types
7. Transforming data into information representation, process, speed etc
8. CPU-types with definition
9. Types of storage devices – Magnetic and optical
10. Measuring drive information – access time, file compression, transfer rate, interface standard
11. Basic of operating system – interface, program, files hardware and software management
12. Definitions of Unix, DOS, Macintosh operating system, windows, OS / 2, windows NT, 95, 98, 2000, Linux
13. Words processing and Desk tope Publishing software
14. Spread sheet software
15. Presentation program
16. Presentation program
17. Data base management system
18. Networking basics – brief of use, structure, LANs, Media, Hardware and software
19. Internet basics
20. Accessing, connecting, working on internet, introduction to DICOM, PACS
21. Working with images
22. Graphics Software
23. Understanding multi-media
24. Creating and distributing media contents
25. Basics of information system- five phases-need, Design, development implementation, maintenance
26. Building information system – five phases – need Design, development, implementation, maintenance.
27. Creating programs-definitions of program and approaches
28. Programming language and system development life cycle
29. Ergonomics health and privacy issues
30. Brief of computer crimes, Viruses. Theft and computer environment

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPER:- APPLIED SCIENCES (COMPUTER SCIENCES & PATIENT SAFETY)

Patient Safety

ELECTRICAL HAZARDS

- Electrical current and body muscles
- Electric shock
- Defibrillators
- Pace makers
- High and low frequency electricity in medicine
- Classification of medical equipment
- Degree of protection in equipment
- Earth leakage current
- Maximum current limits and safety tests

FIRE AND EZPLOSION IN HOSPITALS

- Inflammable gases and liquids
- Static electricity
- Precaution against fire and explosion

SURGICAL DIATHERMY AND OTHER POSSIBLE HAZARDS IN HOSPITALS

- Surgical diathermy and precautions
- Mechanical hazards
- Heat and light hazards
- Chemical burns

RADIATION

- Non-ionizing radiation
- Ionizing radiation
- Microwave ovens
- Ultrasound therapy equipment
- Lasers

INFECTION IN HOSPITALS

- The hospital environment
- Pathogenic, non-pathogenic microorganisms
- Modes of spread of infection
- Kinds of infection
- Cross-infection
- Precautions and prevention

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- BASIC MEDICAL SCIENCES (PUBLIC HEALTH & FIRST AID)

Public Health

Introduction: To health field, definition of health, preventive, social, community and family medicine.

Health care organization in Pakistan.

i. General introduction to federal, provincial, divisional and district level organizational structure.
i. Role of Paramedics in hospitals

AIR

Composition and functions-Pollution and pollution indicators-impurities in air cleaning methods (an over view)

WATER

Sources of water with special reference to Pakistan. Impurities-Safety Purification, Natural and artificial methods.

VENTILATION

Objectives and merits. Over crowing and its effects on human body. Natural ventilation and artificial ventilation.

WASTAGE

Introduction-refuse and its collection. Methods of collection and disposal of refuse-Excreta-Methods of collection and disposal of Excreta.

INFECTION AND DISINFECTING

Introduction-Terminology-Methods of disaffection
Sources of infection-routes of transmission i.e., air water and food

COMMUNICABLE DISEASES

Introduction-EPI and diseases related to it, vaccination schedule.
Communicable diseases like T.B, diphtheria, tetanus, polio, whooping cough and measles
Epidemiology and prevention methods for above diseases.

FAMILY PLANNING

Need and objectives-general methods.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPERS:- BASIC MEDICAL SCIENCES (PUBLIC HEALTH & FIRST AID)

First Aid

1. **First Aid**
   Definition, Principles, Actions at emergency
2. Dressing + Bandages
3. Short structure & function of respiratory system
4. Asphyxia
5. Assisted respiration
6. Short stricter and function of C.V.S
7. Shock (Circulatory failure) Patho-Physiology
8. Cardiogenic shock Treatment
9. Hypo-volume shock (Hematologic) with treatment other condition
10. Anaphylactic Shock Signs, Symptoms, Treatment
11. Septic Shock
12. Neurogenic shock
13. Cardiopulmonary resuscitation principles practical demonstration
14. Assessment of newborn
15. Resuscitation of new born
16. Short structure & function of locomotive, sprains and strains
17. Fractures, First Aid Management
18. Burns, Scalds causes and First Aid Management
19. Wounds cuts stabs and management
20. Management of Bleeding from wound/Nose/Mouth/Misc
21. Drowning – first aid management
22. Road traffic accidents (First Aid Management
23. Transport of injured persons especially spinal are
24. Care of Coma/Stupor unconscious victim
25. Poisonings-swallowed persons and first aid management
26. Poisonings inhalation poisonings first aid management
27. Bites Stings management human, cat dog insect
28. Snake bite and first aid management
29. Phyla tic Shock and its management
30. Choking (Foreign body in airway)
31. Abdominal pain (First Aid)
32. Sport injuries
33. Safety at home precautions/safety
34. Precautions at kitchen to avoid accidents
35. Precautions at bathroom
36. Precautions in living room
37. Precautions at stairs and at terraces

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

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- Microwave ovens
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INFECTION IN HOSPITALS

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- Kinds of infection
- Cross-infection
- Precautions and prevention

HAFEEZ INSTITUTE OF MEDICAL SCIENCES PESHAWAR

PAPER:- PHYSIOTHERAPY TECHNIQUES - II

SPECIAL PHYSIOLOGY

1. Physical principles of resting membrane potential in nerve & muscle, action potential and Physiology of nerve impulse Synaptic Transmission
2. Sympathetic and parasympathetic system
3. Sensory system various types of sensations, their pathways and brain centers
4. Special senses
   Eye, car, taste, olfaction
5. Motor system pyramidal and Extra pyramidal
6. Cerebellum RAS, Sleep, higher brain functions, EEG
7. Functions of Hypothalamus
   Physiology skeletal muscle, smooth, cardiac muscle Neuromuscular Physiology EMG, mayo neural junctions
8. Physiology of respiration, cardiovascular system, Endocrine GIT, urinary system, blood, immune system
9. Physiology of bones and Ca ++ metabolism
10. Physiology of Exercise
11. Metabolism: Diet & Nourishment especially in handicapped & paralyzed individuals
12. Electrolyte physiology, water & Electrolyte balance PH regulation

SPECIAL ANATOMY

SKELETAL SYSTEM

1. Classification and general features of bones & joints
2. Bones of upper limb
3. Bones of lower limb
4. Joints of upper & lower limbs, classification of joints and bones
   a. Essential features of each type
5. Kind of move permitted in joint institution of movements structure of each joint chief relations
6. Skull: general features, bone and position of bone
   a. Vertebral column
   b. Sternum & Ribs
   c. Foot
   d. Description of corpus metacarpus and phalengeal bones and their movements
7. Muscles: General anatomy of muscles, their classification and action. Nerve supply & actions of various limbs & bondy muscles including diagrams, their nerve supply with

speial emphasis on their group action as against antagonist, synergist. Mechanism and action of muscles acting on joints and movements they produce.

8. C.N.S: General Orientation of CNS
    a. Brain & Spinal Cord
    b. Sympathetic & Para Sympathetic system
    c. Cranial and peripheral nerves
    d. Distribution of 5, 7, 10, 11. Name & functions only of the other nerves
9. C.V.S. Heart – aorta, major arteries of limbs, head, neck, neck, brain, abdomen & thorax
    a. Veins of body
    b. Lymphatic
10. Digestive Sytem:
    a. Mouth
    b. Pharynx esophagus
    c. Gastrointestinal tract
    d. Associated glands, salivary glands, liver, pancreases
11. Endocrines Pituitary thyroid & parathyroid suprarenal etc

SURFACE ANATOMY

a. Knowledge of various bony and soft land marks on body
b. Correlation of theses marks with deep structures
c. Surface marking of various deep structures in body
d. Measurements in limbs – recognition of various parts in limbs, abdomen, thorax, head & neck

PRACTICAL

1. Excretory System/Uro-genital
   To demonstrate kidney, urinary bladder gonads, Urethra, genital system and reproductive system
2. Demonstration of all the above systems on
    a. Charts
    b. Equipments
    c. Slides/projectors
    d. Dummy's
    e. Skeleton i. Individual bones ii. Whole

KINESIOLOGY

1. **CLASSIFICATION OF PASSIVE MOVEMENTS**
    a. Relaxed Passive Movements
    b. Forced Passive Movements
    c. Its technique and effects
2. **CLASSIFICATION OF ACTIVE MOVEMENTS**
    a. Assisted active movement its technique and effect
    b. Resisted movement its technique and effect
    c. Free active movements technique and effect
3. **BREATHING EXERCISES**
    Its effect and technique
4. **POSTURE DRAINAGE AND CONTROL**
    Maintenance of correct posture
5. **SUSPENSION THERAPY**
    Introduction to suspension therapy. Simple methods of suspension effects and uses.
6. **PULLEY CIRCUITS**
    Introduction to pulley and weight circuits
    Effects and uses of pulley circuits
7. **DIFFERENT POSTURES:** Effects, uses and Muscle work;
    a. Standing
    b. Kneeling
    c. Sitting
    d. Lying
    e. Hanging
    f. Pelvic Tilt
8. **RELAXATION**
    a. Definition, Methods of promoting relaxation, effects and uses
9. **P.N.F. TECHNIQUES**
    a. Basic technique, its effects and uses
10. **RE EDUCATION OF WALKING / CAIT TRAINING**
    a. Without aids
    b. With Crutches
    c. Wheel Chair
    d. Stick and Braces

PHYSIOTHERAPY TREATMENT AND TECHNIQUE

NERVOUS SYSTEM

a. Classification of Nervous Diseases
b. Upper Motor Neuron Diseases
    a. Hemiplegic
    b. Cerebral Plasy
c. Lower Motor neuron diseases:
    a. Acute Aneroid Poliomyelitis
    b. Progressive Muscular Atrophy
    c. Chorea and Parkinsonism
    d. Peripheral nerve injuries
    e. Facial Paralysis
d. **DISEASES OF MUSCLES**
    a. The Dystrophies
    b. Myasthenia Gavis
e. **DISEASES OF JOINTS**
    a. Osteoarthritis
    b. Ankylosing Sodalities
    c. Rheumatoid Arthritis
    d. Septic Arthritis
    e. Gout
f. **DISEASES OF RESPIRATORY TRACT**
    a. Bronchitis
    b. Bronchi – lactases
    c. Pneumonia – Lobar
        i. Bronchial
    d. Tuberculosis
    e. Asthma
    f. Pleurisy
    g. PI. Effusion
g. **FRACTURES**
    a. Types, sites and its physiotherapy management
h. **DEFORMITIES**
    a. Acquired and congenital, General Principles of Physiotherapy Treatment
i. **GENERAL PRE OPERATIVE AND POST OPERATIVE CARE OF PATIENTS IN PHYSIOTHERAPY**
    a. Lobotomy

b. Premumonectomy
c. DVT (Deep Vein Therapy)
d. Implanted Patients (Total Hip joint Replacement)

j. **PHYSIOTHERAPY IN CHEST SURGERY**
   a. Lobotomy – Premumonectomy
k. **PHYSIOTHERAPY IN TRAUMATIC CONDITIONS**
   a. Joint Sprains
   b. Sinusitis
   c. Bursitis
   d. Tendinitis
l. **INTRODUCTION TO HYDROTHERAPY, OUTLINE OF METHODS USED, TECHNIQUES, TYPES OF BATHS EFFECTS AND USES**
   a. Introduction to paraffin baths, its application, effects and uses
m. **MANUALAL THERAPY:**

Post operative physiotherapy
Chest physiotherapy
Physiotherapy in orthopedics
Complications in manual therapy
Physiotherapy in peripheral nerve therapy
Physiotherapy for hemi-pelagic patient
Mobilization and gait training
Physiotherapy for paraplegic patients, exercises, bed positioning, complication, loss of sensations and management

WAX THERAPY

Uses of wax therapy
Combination, diagram of the tub and contraindication
Temperature setting and preparation of the patient
Alternative of wax therapy

MECHANICAL SYSTEMS IN PHYSIOTHERAPY

Study the diagram of pulley and rope system
Study and uses of Captain Wheel
User of ladders in gymnasium
Study with diagrams required in various exercises
Study with diagram of quadriceps drill, its uses and types of exercises

EXERCISE THERAPY

1. Study of design, apparatus, equipment for passive and active exercise therapy
2. Usage of manual exercise therapy

3. Indications or conditions for use
4. To study the role of exercises in hemiplegic and paraplegia
5. Conditions for use of massage
6. Contraindications of massage

CHEST PHYSIOTHERAPY

1. To study Conditions, effects and diagram showing trachea, bronchi and lungs
2. To study the effects of physiotherapy regarding expectoration and oxygenation
3. Applications in post-operative thorocotomy
4. Uses of chest therapy in ICU & CCU

TRACTION APPARATUS

1. Uses of traction apparatus
2. Study of manual traction
3. Advantages and disadvantages
4. Study of mechanical traction
5. Diagram for manual cervical traction
6. Design mechanical traction apparatus
7. Electrical apparatus diagram
8. Pre and post therapy precautions
9. Time and duration the treatment required

MYCOLOGY

- Demonstration of muscles (different groups with their function)
- Demonstration of ligaments
- Exercises - Physiotherapy of Sensory organs especially skin, briefly other organs , to demonstrate on flip charts or projectors
- Surface marking (surface anatomy / General anatomy)