UNIVERSITY OF JAMMU

1st Prof BPh.T SYLLABUS

Transcript Hrs.1550

S.No.	Subjects	Didactic Hours	Practical/Demonstration/Clinical Orientation Hours	Total Hours
1	Anatomy	220 Hrs.	250 Hrs.	470 Hrs.
2	Physiology	200 Hrs.	200 Hrs.	400 Hrs.
3	Movement manipulation & Biomechanics	150 Hrs.	200 Hrs.	350 Hrs.
4	Pathology & Bacteriology	180 Hrs.	-	180 Hrs.
5	Biochemistry	100 Hrs.	50 Hrs.	150 Hrs.

The scheme of examinations shall as under:-

				Marks	Time
(i)	Human Anatomy:				
	Theory	i)	One written paper	80	3 Hrs
		ii)	Internal Assessment	20	
	Practical	i)	University Examination	50	
		ii)	Internal Assessment	50	
			Total	200	
(ii)	Human Physiology:				
	Theory	i)	One written paper	80	3 Hrs
		ii)	Internal Assessment	20	
	Practical	i)	University Examination	50	
		ii)	Internal Assessment	50	
			Total	200	
(iii)	Movements Manipulations and Bio-mechanics				
	Theory	i)	One written paper	80	3 Hrs
		ii)	Internal Assessment	20	
	Practical	i)	University Examination	50	
		ii)	Internal Assessment	50	
			Total	200	
(iv)	Pathology & Bacteriology:				
	Theory	i)	One written paper	40	2 Hrs
		ii)	Internal Assessment	10	
			Total	50	
(v)	Bio-Chemistry:				
	Theory	i)	One written Paper	40	
		ii)	Internal Assessment	10	
			Total	50	

Course: BPHT Ist Prof **Maximum Marks: 200**
Title: Human Anatomy **Theory: 80 Internal Assessment: 20**
Course No: 1BPHT101 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40)

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**
b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

Section-I: General & Systemic Anatomy

General Anatomy

1. Introduction: Scope of Anatomy
   Anatomical Terms, Anatomical positions of the body.
2. Connective tissues, fibrous, tissue, tendon, apponeurosis, cartilage.
3. Muscles: Voluntary and involuntary muscles, short description of the structure of different muscles.
4. Muscles: Classification of voluntary muscles origin and insertion tendon, isometric and isotonic contractions of the muscle.
5. Bones: Hard connective tissue, composition and functions, classification of bone according to Morphology and development, various terms as ridge, tuberosity and tronchanter.
6. Bones: Development of bones, parts of long bones and blood supply of bones, general remarks about the bones of skull, thorax, vertebral column and extremities.
7. Cartilages: Hyaline cartilage, Elastic cartilage, Fibro cartilage.
8. Joints: Definition, classification of joints, structure of fibrous and cartilaginous joints.
9. Joints: Structure of synovial joints, movements of joints, blood supply of bones and joints.
10. Joints: Radiological joints.
11. Nervous system: Nerve cell, synapse and reflex arc, organization of central Nervous system. Spinal and Nerve endings with demonstrations on various parts.

Systemic Anatomy

1. Cardiovascular system: Blood as a connective tissue, function in short, gross anatomy of heart with demonstrations and surface anatomy.
2. Cardiovascular system: Arteries, veins, capillaries, collateral circulation, nervous control of blood circulation with demonstration and surface anatomy.
3. Respiratory system: General; outline of Respiratory passages, gross anatomy of lung, pleura with demonstration and surface anatomy.
4. Respiratory system: Bronchopulmonary segments, intercostals muscles and mechanism and Respiration.
5. Digestive system: General idea or outline of Gastro-Intestinal tract and associated glands, demonstration of organs.(Brief concept)
6. Excretory system: Structure and function of kidneys, general outline of ureters, urinary bladder and Urethra, demonstration of organs.(Brief concept)
7. Reproductive system: General outline of Male and Female genital organs, detail in female and brief in male.(Brief concept)
8. Endocrines: Definition, structure in general, control of secretion of a Pituitary, Thyroid, Adrenal Pancreas with demonstration.(Brief concept)
9. Lymphatic system: Lymph circulation, lymph nodes and lymphoid tissue in details.
10. General embryology (in brief).

Section II: Muscle: Skeletal and Neuro anatomy

1. **Superior extremity:**

Osteology: Clavicle, scapula, humerus, radius, ulna, carpals, metacarpals.
Soft parts: Breast, pectoral region, axilla, front of Arm, back of arm, cubital frossa, front of foream, back of forearm ,nerves and vessels of arm and forearm, palm dorsum and palmar aspect of hand, shoulder girdle, joint of hand, T.M joints Atlanta occipital joint,
Surface and radiological anatomy practicals.

2. **Inferior extremity:-**

Osteology: Hip, femur, tibia, fibula and patella tarsals and Metatarsals.
Soft parts: Front of thigh-Femoral triangle, Femoral canal and femoral hernia, adductor canal, medial compartment of thigh, Gluteal region, back of thigh, popiteal fossa, anterior compartment of leg, posterior compartment of leg. Sole of feet, arterial supply,lymphatic drainage of thigh and leg, venous drainage of thigh and leg, hip joint, knee joint, ankle joint, tarsal joint, Metatarsophalangeal joints, sacroiliac joint.

3. **Trunk:** Vertebral column ligaments and muscles acting on it and movements.
   Osteology: Cervical, Thoracic, lumbar-vertebrae, sacrum, coccyx and Ribs.
   Soft Tissue: Inter vertebral joints, costo-vertebral joints, inter-vertebral disc, ligements and muscles.
   Thoracic cage: with muscle and movements.
4. **Head neck face region:** Bones, muscles, nerves of face and neck.
   Joints: Temporo mandibular, Atlanto-occipital joint.
5. **Practical:** Dissection of Extremities and Demonstration of dissected parts of trunk, brain, thoracic and abdominal contents.

Neuro-Anatomy: in details with applied and clinical aspects with demonstration of brain and spinal cord.

i) Sulci and Gyri and various areas of cerebral hemispheres.
ii) Thalamus, Hypothalamus, Basal Ganglion
iii) Cerebellum

iv) Pons; Medulla
v) Spinal Cord-with ascending and descending tracts in details.
vi) Clinical application of knowledge of the tracts.
vii) Autonomic nervous system.
viii) Vestibulo chochlear system
ix) Nervous control of urinary bladder and bladder dysfunction.
x) Cranial nerves.

Lecture demonstration:

1. Muscles of the whole body-during dissection and demonstration.
2. Demonstration of organs in Thorax and abdomen during lecture.
3. Surface marking in living body , lung, pleura, fissures and lobes of lungs, heart, abdominal vicera.
4. Identification of body prominences on inspections and palpation in the body especially of extremities.
   Points to palpate nerves and arteries, Identification of muscles.

Special senses

1. Extra ocular muscles and salient points about eye ball, visual tract with optic nerve.
2. Ear, specially the internal ear.
3. Skin as a sense organ.

Special attention to be given to applied anatomy.

BOOKS RECOMMENDED

1. An introduction to Fundamental Anatomy by David finclair (Blackwell Publication)
2. Primary Castes Anatomy by Besmagion (Williams and Williams co. Baltimore)
3. Gray's Anatomy.
4. Cunningham's Mannual of Practical Anatomy.
5. Anatomy and Physiology by Smout 7 Maconald (Edward, Arnold)
6. Kinesiology by Katherine Walls (Saunders & Co).
7. Clinical Kinesiology by Signe Brunnstroms.
8. Human Embryology by Hamilton, body and Mossman.
9. Kinesiology and applied by Resch Burke
10. Applied Anatomy and Kinesiology by W. Bower & H. shone (Lea & Febigar)
11. Limbs by Dr. Kadasne
12. Primary Anatomy by Basimajin J.
13. B.DChaurasia-all 3 volumes.
14. Neuro Anatomy-Inderbir Singh
15. Anatomy by Inderbir Singh
16. Histology by Inderbir Singh
17. Embroyology by Inderbir Singh
18. Snell's Clinical Anatomy

Course: BPhT Ist Prof **Maximum Marks: 200**
Title: General Physiology **Theory: 80 Internal Assessment: 20**
Course No: 1BPHT102 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40)

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**
b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12), with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

Section-I: General Physiology

General Physiology

1. Cell structure and organelles.
2. Body fluid compartments

BLOOD

1. Composition of blood, plasma, proteins formation and their function.
2. Structure formation and functions of RBC
3. Structure formation and functions of WBCs and platelets.
4. Coagulation and its defect, bleeding, clotting time.
5. Blood groups and their significance Rh factor, blood transfusion.
6. Reticulo endothelial system, jaundice structure and function of spleen.
7. Hemoglobin and ESR.

Cardiovascular System

1. Structure, properties of heart muscle and nerve supply of Heart, structure and function of Arteries, artereoles, capillaries and veins.
2. Cardiac cycle and heart sounds.
3. Cardiac output, measurement, factors affecting cardiac output.
4. Heart rate and its regulation, cardio vascular reflexes.
5. Blood pressure its regulations and physiological variation
6. Hemorrhage.
7. E.C.G
8. Cardiovascular changes during Muscular exercises.

Respiratory System

1. Mechanism of respiration, intra-pleural and intra pulmonary pressure.
2. Lug volumes and capacities.
3. O2 and Co2 carriages and their exchange in tissues and lungs.
4. Nervous chemical regulation of respiration-respiratory centers.
5. Respiratory states anoxia, asphyxia, cyanosis, acclimatization.

Digestive System

1. General outline and salivary digestion
2. Gastric secretion and its mechanism of secretion and functions.
3. Mechanism of secretion of mucus, entericus and pancreatic juice and its functions.
4. Structure and secretions and functions of liver.

Endocrines

1. Anterior pituitary
2. Post pituitary and parathyroid.
3. Thyroid
4. Adrenal cortex.
5. Adrenal Medulla, Thymus.
6. Pancreas and Blood sugar regulation

Reproduction System

1. Male sex hormones and their functions, spermatogenesis.
2. Female sex hormones and functions, menstrual cycle ovulation and contraception.
3. Pregnancy, functions and placenta.

Excretory System

1. Structure and functions of kidney, renal circulation, auto regulation, GFR
2. Reabsorption of substances by Renal tubule, counter current hypothesis.
3. Renal function tests.
4. Physiology of Micturation.

Section-II: Neuro Muscular Physiology

Muscle and Nerve

1. Types of Muscle, Microscopic structure of Muscle, Properties of muscle, comparison of various types of muscle.
2. Sarcomere, Mechanism of muscular contraction.
3. Thermal and chemical changes during muscular contraction.
4. Starlings law, isotonic, isometric contractions, chronaxia, Rheobase.
5. Action potential.
6. Motor units and its properties, clonus, tetanus, fatigue, summation, all or non law, beneficial effect.
7. Electromyography applied aspects.
8. Nerve fibers classification, spread of impulse.
9. Velocity of nerve conduction, factors affecting velocity.
10. Salutatory conduction, Neuromuscular junction, drugs acting on it. Myasthenia gravis, atrophy, hypertrophy.
11. Degeneration and regeneration of Nerve fiber, wallerian degeneration, Electrotonus, Pfluger's law.

Exercise Physiology(Basic Concept)

Basal Metabolic rate and Respiratory Quotient, Fatigue, Oxygen Debt, Cardiovascular and Respiratory changes during Exercise.

Effect of exercise on muscle power, strength, endurance.

Nervous system

1. Types and properties of receptors, types of sensations.
2. Structure of synapse, reflex are and its properties accommodation, summation,subminimal fringe etc.
3. Sensory tracts of spinal cord.
4. Motor tracts, pyramidal and extra pyramidal.
5. Hemisection and complete section of Spinal Cord upper and lower motor neuron paralysis.
6. General cortex, areas and functions, E.E.G
7. Structure connections and functions of cerebellum and hypothalamus.
8. Basal ganglia and thalamus, connection and functions.
9. Reticular formation tone, posture and vestibular apparatus.
10. Autonomic nervous system.

Special senses

1. Broad features of by errors of refraction, lesions of visual pathways.
2. Speech and its disorders.
3. Ear.

Practical and demonstrations

A. 1. Haemoglobinometer and total R.B.C count.
   3. Total W.B.C count.
   4. Preparation and staining of blood smears, determination of differential W.B.C count.
   5. Blood grouping.
   6. Erythrocyte Sedimentation Rate.
   7. Bleeding and clotting time.

B. 1. Artificial Respiration
   8. Pulmonary function tests.

Human physiology Experiments

C. Heart sounds, Radial pulse, tracing basal metabolic rate.
   1. Arterial blood pressure in men
   2. Cardiac efficiency test.
   3. Recording and study of electrocardiogram.

D. 1. Testing of peripheral sensations and cranial nerves.
   2. Superficial and deep reflexes.
   3. Study of special senses.

Animal Physiology experiments:

Varieties of stimuli, electrical apparatus for animal physiology experiment.

Frog's nerve muscle preparation and demonstration of the following experiments on it
Sample muscle twitch
Effect of load. Temperature and fatigue of muscular contractions.
Frog's normal cardiogram.
Effect of following on normal cardiogram of Frog.
Temperature.
Extrasystole.
Stimulation of Vagosympathetic Trunk.
Stannius ligature.

Books Recommended

1. Text book of Medical Physiology by Gyton, Arthurc and Hall
2. Human Physiology by Chatterjee, CC.
3. Concise Medical Physiology by Chaudhari, Sujit K.
4. Text book of Physiology by A.K Jain.
5. Manual of Practical Physiology for MBBS by A.K Jain.
6. Essentials of Medical Physiology by Sembulingum.K.
7. Text book of sports and exercise physiology by Dey,Swapan Kumar.
8. Human Physiology and Biochemistry for Physical therapy and Occupational therapy by A.K Jain.
9. Essentials of Exercise Physiology by McArdle , William D.

Course: BPhT Ist Prof **Maximum Marks: 200**
Title: Movement Manipulation& Biomechanics **Theory: 80 Internal Assessment: 20**
Course No: 1BPhT103 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40)

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

Section-I : Movements, Manipulations and Biomechanics.

Analysis of joint movement and muscle action and Biomechanics of Muscle.

i) Definition and terminologies: Mechanics (Static and Dynamic), Biomechanics, Kinetics and Kinematics (Osteo and Arthrokinematics), Open and Closed chain Kinematics.
ii) Normal joint range and variations within normal limits.
iii) Types of muscles-Anatomical and Physiological, Types of Muscle fiber, motor unit
iv) Stability and mobility of muscle, factors effecting muscle function.
v) Muscle action-agonist, antagonist, fixators ,synergist, Spurt and Shunt muscles
vi) Isotonic and Isometric contractions.
vii) Group action of muscles.
viii) Active and Passive insufficiency.

Analysis of Movements

i) Fundamental positions and their uses lying sitting standing, kneeling and hanging.
ii) Derived positions of moving limbs, back trunk and head.
iii) Analysis of pattern of movement-BOS, Gravity and Muscle work related to rolling, lying to sitting, sitting to standing walking.
iv) Development sequences of movement from baby to adult.
v) Classification of Movements-Definition, Classification, Principles, Effects and Uses of Active, Assisted, free ,Assisted-Resisted, Resisted and Passive Movements)

Massage Manipulations:

i) Definitions, classification indications, contra indication and effect of massage in general and specific.

ii) Preparation of the patient and lubricants.

iii) Techniques of different manipulations of massage on different parts of body.

a) Effluerage and stroking.
b) Petrissage-kneading, picking, wringing.
c) Frictions.
d) Percussions, clapping, beating, pounding.
e) Vibration, shaking.

Testing procedures

Goniometry- Definition, Types, Principles, Uses and Techniques for individual joints.

Suspension therapy-Types, Suspension apparatus, Principles, Techniques, Uses

Section-II: Biomechanics & Kinesiology.

1. Gravity, centre of gravity, line of gravity, equilibrium, base and balance.
2. Friction, levers, axis of movements, range of movement and planes, movements, linear angular, velocity, acceleration.
3. Nature and effects of forces, Newton's law and inertia, acceleration, reaction. Force and Force system- linear, parallel and concurrent.
4. Composition and resolution of forces, related to muscle forces, angle of pull, leverage etc.
5. Prevention of postural strain and occupational hazards, correct use of body mechanics at home, at school, at work and recreation.
6. Introduction to Joint biomechanics-Classification of Joints, Osteo and Arthro Kinematics. Concave- Convex rule, Joint Function, Kinetics and Kinematics of-Vertebral Column, Shoulder, Elbow, Wrist and Hand Complex, Hip , Knee and ankle Joint, TMJ joint.

7.Biomechanics of normal human locomotion in detail-Gait cycle, Measurable parameters, Kinetics and Kinematics of Gait, Determinants of Gait.

Books recommended:

1. Biomechanics of human motion by Williams lessuer (W.D.S under co)
2. Kinesiology by Wells and Luttgens (W.B. Saunders co).
3. Massage principles and Techniques by Getuude Board and Elazabeth (W.B. Saunders Co).
4. Massage for therapist by Margret Hollis.
5. Principles of Exercise Therapy by Dean Gardiner (G. Ball and Sons)
6. Exercise in water by H.H. Duffield (Billier Tindall & Cassell)
7. Massage, manipulations and traction by Elexabath (Light Fountain) street, U.S.A)
8. Connective tissue massage by Maria Enar (E&s livingstone)".
9. Theory and practice of massage by Goodall & Copostain.
10. Muscle testing and function with posture and pain by Kendall.
11. Muscle "Testing (Techniques of Manual Examination) by Divids, Williams and worthingam (D. Saunders Co).
12. Musle testing techniques of manual examination by Hislop.

13. Measuring and recording of joint motion by American academy of Orthopaedic Surgeons
14. Kinesiology and applied anatomy by Raseb & durk (lea and fabigers).
15. Therapeutic Exercise (Kinesio therapy) by Leenard huddlestron (F.A. Davis).
16. Massage Therapy by A.GK Sinha.
17. Peripheral manipulation-3rd Edition GID Maitland. Butterworth.
18. Gait analysis and introduction, Michael Whittle.
19. Functional anatomy of the spine- (9) Jean, Butterworth.
20. Exercise Therapy by Colby and Kisner (J P Publication).
21. Joint structure and Function by Norkin , Cynthia.
22. Brunnstrom Clinical Kinesiology by Smith, Laura K.
23. Physiology of Joints 3 volumes by Kapandji.

Course: BPhT Ist Prof **Maximum Marks: 50**
Title: Pathology & Bacteriology **Theory: 40 Internal Assessment: 10**
Course No: 1BPhT104
Duration: 2 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of twenty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I(General Pathology and Bacteriology)
Pathology

1. Aims and objective of study of pathology, meaning of the terms etiology. Pathogenesis, lesions and disease.
2. Various causes of disease and an approach to laboratory study and diagnosis of process of disease.
3. Brief outline of sick cells, degenerations, necrosis, gangrene etc.
4. Inflammation-definition, vascular and cellular, phenomenon, tissue changes, exudates and pus formation, Inflammatory cells and mediators. Differences between acute and chronic inflammation. Chronic inflammation causes types, Non specific and Granulomatos with examples.
5. Wound healing by primary and secondary union ,factors promoting and delaying healing .Healing at various sites (bone, nerves and muscles),Regeneration and repair.
6. Circulatory disturbances with emphasis on oedema, ischemia thrombosis, embolism, infarction, gangrene, shock -their effect, sites, types and etiopathogenesis. Chronic venous congestion-Lung ,Liver.
7. General approach to bacterial and viral infection. Emphasis on tuberculosis, syphilis, leprosy, fungal infections.
8. General approach to immune system organization-cells antibodies regulation of immune response. Hypersenstivity, Secondary immune deficiency such as HIV, Basic concept of autoimmune disease (emphasis on SLE, RA).

9. Pathalogic changes in Vit Defficiency.
10. Growth disturbances- Atrophy, Hypertrophy, Hypoplasia, Metaplasia, Angenesis, Dysplasia. Neoplasia-Benign, Malignant tumor, its spread, carcinogenesis.

Bacteriology

Classification of Micro- organisms, Bacterial anatomy, Sterilization, Disinfection

Culture media, Gram staining, ZN staining.

Innate and Acquired immunity, structure and function of immune system. Antigen, Antibody, Antigen-Antibody reaction, Hypersensitivity, Autoimmunity.

Section II (Systemic Pathology and Bacteriology)

Pathology

11. CVS- Atherosclerosis-Ischemic heart Disease-Myocardial infarction, Hypertension, CCF, Rheumatic heart disease, Congenital Heart disease, Peripheral vascular disease.(Brief Concept)
12. Respiratory-COPD, Pneumonia, Lung abscess, T.B, Plueritis, Lung collapse, Occupational lung diseases, ARDS.(Brief Concept)
13. GI System-Gastric and duodenal ulcer, Chirosis of liver(Brief concept)
14. Endocrine-Hypo and Hyper Thyroidism, Diabetes (Brief concept)
15. Anemia and types (Brief concept)
16. Neuromuscular system- Nervous tissue reaction to ischemia, injury and infection, Meningitis payogenic and viral, Cerebrovascular disease, Infarction, Hemorrhage, hydrocephalus, ICP, Leprosy, Parkinsonism. Muscular dystrophy, Myasthenia gravis.
17. Bones and Joints- Osteomylitis, Arthritis degenerative and inflammatory (RA, Ankylosing Spondylitis, Gout),Joint T.B, Bone tumors Osteoblastoma, Osteosarcoma, Ewings sarcoma(Brief Concept)
18. Ionizing radiations and Medical genetics(Brief Concept)

Bacteriology

19. Infection caused by gram positive cocci-Streptococci, Infection caused by gram negative cocci-Gonococci.
20. Classification of Myco bacteria
21. Morphology, cultural characteristics, pathogenesis, laboratory diagnosis, treatment of Myobacterium tuberculosis and Laprae.
22. Fungi and its classification –Candidiasis, Dermatophytes and Cryptococcosis (Brief concept)
23. Introduction to general properties of DNA and RNA Virus-Hepatitis and HIV (Brief Concept)
24. Introduction to Protozoa and Helminthes and Classification of Parasites.(Brief Concept)

BOOKS RECOMMENDED:

1. Basic Pathology by Robbins
2. Text book of Pathology by Harsh Mohan
3. Text book of pathology for applied health sciences by Ramdas Nayak.
4. Pathology basis of Diseases, Introduction to human diseases by Crowley, Leonard V.
5. Short text book of Microbiology by Satish Gupta.
6. Text book of Microbiology by Ananthanarayan and Panikar.
7. Text book of Microbiology for Physiotherapist by Wani, Imtiyaz.

Course: BPhT Ist Prof **Maximum Marks: 50**
Title: Biochemistry **Theory: 40 Internal Assessment: 10**
Course No: 1BPhT105
Duration: 2 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of twenty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I

1. Biochemical characteristics of living matter.
2. Biochemistry morphology of cell-Physiology.
3. Chemistry of functions
   (a) Carbohydrates
   (b) Lipids
   (c) Proteins
4. Proteins and nucleic acids.
5. Enzymes
6. Hormones
7. Vitamins

Section II

8. Metabolism(Brief Concept)

(a) Carbohydrates
(b) Lipids
(c) Proteins
(d) Vitamins

9. Physiology
10. Water ,electrolyte ,Acid and Base Balance

11. Chemistry of biological materials
    (a) Blood
    (b) CSF
    (c) Milk
12. Digestion and absorption
13. Common procedures used in biochemistry.(Brief Concept)

BOOKS RECOMMENDED:

1. Harper's Illustrated Biochemistry by Murray, Robert K.
2. Biochemistry by Satyanarayan.
3. Text book of Biochemistry by Vasudevan and Sreekumari.
4. Text book of Biochemistry by Ramarao
5. Biochemistry by AC Deb

UNIVERSITY OF JAMMU
2nd Prof BPh.T SYLLABUS

Transcript Hrs.2120

S.No.	Subjects	Didactic Hours	Practical/Demonstration/Clinical Hours	Total Hours
1	General & Social Psychology	120 Hrs	-	120 Hrs
2	Exercise Therapy	150 Hrs	200 Hrs	350 Hrs.
3	Medicine	200 Hrs	350 Hrs	550 Hrs.
4	Surgery	200 Hrs	350 Hrs	550 Hrs.
5	Pharmacology	150 Hrs	-	150 Hrs.
6	Medical electronics & Electrotherapy	150 Hrs	250 Hrs	400 Hrs.

The scheme of examinations shall as under:-

			Marks	Time
(i)	General & Social Psychology			
	Theory	i) University Examination	40	2 Hrs
		ii) Internal Assessment	10	
		Total	50	
i)	Exercise Therapy:			
	Theory	i) one written Paper	80	3 Hrs
		ii)Internal Assessment	20	
	Practical			
	i)	University Examination	50	
	ii)	Internal Assessment	50	
		Total	200	
	iii)	Medicine		
		Theory i)One written paper	80	3 Hrs
		ii)Internal Assessment	20	
		Practical		
		i) University Examination	25	
		ii) Internal Assessment	25	
		Total	150	
	iv)	Surgery:		
		Theory i) one written Paper	80	3 hrs
		ii) Internal; assessment	20	

	Practical			
		i) University Examination	25	
		ii) Internal Assessment	25	
		Total	150	
v)	Pharmacology:			
	Theory	i) University Examination	40	2 hrs
		iii) Internal Assessment	10	
		Total	50	
vi)	Medical Electronics and Electrotherapy:			
	Theory	i) one written Paper	80	3 hrs
		ii) Internal assessment	20	
	Practical			
		i)University Examination	50	
		iii) Internal Assessment	50	
		Total	200	

Course: BPhT IInd Prof **Maximum Marks: 50**
Title: General & Social Psychology **Theory: 40 Internal Assessment: 10**
Course No: 2BPhT106
Duration: 2 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of twenty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I :GENERAL PSYCHOLOGY

1. (a) Nature of Psychology-Behavior and experience, conscious, sub-conscious and unconscious mind.
   (b) Fields of Psychology, introspective ,clinical and experimental methods.
   (C)Schools of Psychology, Associationism, Psycho-analytical theory, behaviorism, Gestalt Psychology, structuralism and functionalism.

2. Heredity (chromosome theory), environment-physical, Psychological, social and spiritual environment

Motivation- Principle of Homeostasis: Need and its relation to structure and environment.

Kinds of motion-Physiology, psychological, social conscious motions: life goals and levels of aspirations, interest and attitudes as motivational forces.

Motion, its nature and relationship with autonomic nervous system, James-Lange theory of emotion, Modougalls' theory of emotion, sentiments and feeling pathological and functional disorders of emotion, emotional hygiene.

Conflict and frustration, common defensive mechanism, identification, regression repression, projection, sub limitation and rationalization.

Learning-Role of learning in human life, types of learning (a) Theories-trial and error learning (b) Associative (conditioning) learning, practical applications of conditioning technique as in mild fever, compulsion to attend and other neurotic behavior in eliminating under control behavior (c) learning by Gestalt learning, Kohkor's experiments on animal learning and transfer of learning.

Memory - types of memory-recall, recognition on causes of forgetting, retroactive-inhibition, disorders of memory-amnesia, par amnesis, hyperamnesis.

Attention and perception-nature of attention, factors determining attention. Nature of perception, principles of perceptual grouping, occlusions.

Intelligence-definition, intelligence tests and their uses. How the test is standardized, intelligence emotions. General intelligence and special intelligence, meaning of precaution.

Personality-definition, type approach and trait approach. Measurement of personalities-interview, questionnaires, eating, performance, projective methods factors contributing towards development of personality-biological, psychological, social and cultural, spiritual factors.

Section II: SOCIAL PSYCHOLOGY

1. Nature and scope of social psychology.
2. Social interaction-primary and social stimulation.
3. Psychological groups and their classification.
4. Socialization of the individual.
5. Social control (social heredity)-moves, customs, fashion propaganda and its techniques.
6. Leadership (personal and social control function, role and qualities of a leader).
7. For Senility-culture and personalities.
8. Attitudes and prejudices-classification of attitudes, causes of prejudice. How to change attitudes of prejudice.
9. Crowds and public opinion.
10. Social change and progress.

Reference books

1. Psychology in Physiotherapy Practice by Srivastava.
2. Abnormal Psychology by Mangal S.K.
3. Girishbala, Mohanty. Text book of General Psychology.
4. Robert A. Baron, Nyla R. Social Psychology.
5. A. Sharma. Textbook of General and Social psychology.
6. Morgan King. Introduction to Psychology

Course: BPhT IInd Prof **Maximum Marks: 200**
Title: Exercise Therapy **Theory: 80 Internal Assessment: 20**
Course No: 2BPhT107 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40)

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION I: THERAPEUTIC EXERCISE

Students should have basic knowledge of the assessment and evaluation of the patients for selecting the techniques and methods for maximum functional restoration including indications and contraindications.

1. **Basic Principles.**

Structure and properties of Connective tissue, Types of Muscle and Muscle fiber.
Concept of Power, Strength and Endurance and factors effecting them.
Strengthening techniques to achieve optimal function, depending upon -
Principles- Overload, Intensity, Motivation, Learning, Duration, Frequency, Reversibility, Specificity, Determinants.

2. **Strength: Muscle and increasing endurance**

Introduction and Principles of Aerobic and Resisted exercises.

i) Associated active exercise, exercises in suspension and in water.
ii) Free active exercise-involving line of gravity, friction and levers.
iii) Resisted exercises normal, slow reversal, repeated contractions etc.
iv) Mechanical PRE using weights, springs and pulley's body weight, thera bands.
v) Endurances-High repetition, low resistance exercises.
vi) Core strengthening exercises , Plyometrics, Isokinetic exercise.
vii) Types of training cross training, interval training, circuit training.

3. **Relaxation**
   i) Standard physical tension.
   ii) Local and general physical tension
   iii) Methods of teaching and reaction
   iv) Shavassan (dead pose).
4. **Stretching**
   Definition, Types, Principles, Techniques, Individual muscle stretching.
5. **Re-education of posture, balance and co-ordination**

i) Types of posture correct and incorrect posture and cause.
ii) Postural deformities.
iii) Postural exercise based on causes.
iv) Balancing exercise-progressed from most stable to difficult position, relaxed to condition of patient.

6. **Breathing exercise**

i) Normal breathing patterns
ii) Mobilization of thorax, localized breathing and exercising to develop respiratory muscle and improve vital capacity.
iii) Postural drainage and pre-and post-operative breathing exercises.

SECTION-II

LOCOMOTION AND HYDROTHERAPY

9. Reduction of hyper tonicity and rigidity and initiation and stimulation of muscle contraction:

1. Maximum sensory stimulation with appropriate example, touch, brushing, tendon, tapping etc.
2. PNF-Introduction, Principles and Techniques for Upper and Lower Limb. Respiratory and Facial PNF.
3. Spasm, spasticity, support and positioning (including reflex in inhibitory positions, shaking movement-for example the body reflexes.)
   Rigidity: Methods of facilitating movement
   Re-education of gait:
   i) Normal human locomotion
   ii) Causes of gait deviation.
   iii) Exercises and methods to improve gait.
   iv) Uses of crutches and crutch walking.

10.Hydrotherapy

i) Physical and therapeutical effects of exercises in warm water.
ii) Principles of treatment-buoyancy assisted, buoyancy as support, buoyancy resisting.
iii) Starting positions.
iv) Dangers and precautions.
v) Pool, tank and accessory equipment.

11.Some techniques of exercise therapy

i) Group therapy-individual and mass.
ii) Recreational therapy
iii) Sports therapy and injury management.
iv) Yoga therapy-Philosophy of yoga, basic postures, therapeutic yoga.
v) Pre and post natal exercises muscle testing.

vi) Introduction to Muscle energy technique , Mayo facial Technique, Pilates(Brief concept)

12. Manual Muscle Testing-Principles, Techniques , Group and Individual Muscle testing of Upper limb, Lower limb, Trunk and Face.

13. Joint mobilization-Principles, Techniques, Types ,Grading system, Indication and Contraindications Of Upper Limb, Lower Limb, Vertebral Column and TMJ.

BOOKS RECOMMENDED

Principles of exercise priscription by Bhutkar. .

Therapeutic exercise (Kinesio Therapy) by Hyddlestone (F.A. Davis Co).

Poprioceptive Neuromuscular Facilitation by Margaret Knott and Dorothy Voss

Suspension therapy in rehabilitation by Hollis and Hopar.

Textbook of Therapeutic exercise by S.Lakshmi.

Principles and practice of therapeutic massage by AG.K.Sinha.

Handbook of Clinical massage by Hudson.

Massage therapy research by Chaitow,Leon.

Breathing exercises 2nd postural drainage by J.R. Shah.

Pool exercise by Booton and Coolwin

Yoga by Kawalynand

Adult hydrotherapy and hydrotherapy in pediatrics, by Margaret Reid Campion, Butterworth.

Therapeutic exercise foundations and technique. Carolyn Kisner, Lynnallen Colby.

Principals of Exercise therapy by Deena Gardener.

Practical Exercise Therapy by Margaret Hollis, Phylflethcer-Cook.

Fascial manipulation for musculoskeletal pain by Basmajain, Johan V.

Course: BPhT IInd Prof **Maximum Marks: 150**
Title: Medicine **Theory: 80 Internal Assessment: 20**
Course No: 2BPhT108 **Practical: External: 25 Internal: 25**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40).

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION-I: General Medicine (Basic Concept in following conditions)

1. **Diseases of cardiovascular system:** Ischemic heart diseases hypertensive heart disease, rheumatic heart disease, congenital heart disease, Infective endocarditis, Thyrotoxic heart disease, Syphilitic heart disease, Vascular disease, thrombosis, embolism.
2. **Rheumatic disease:** Rheumatoid arthritis, Osteoarthritis, still's disease, Collagen disease, Ankylosing Spondylitis, SLE, Polymyositis and dermatomayosistis.
3. **Diseases of endocrine system:** Emphasis on Diabetes mellitus and outline of Hypopituitarism, Goiter, Hyperthyroidism and Hypothyroidism,Hypo and Hyper adrenalism.
4. **Disease of respiratory system:** Diseases of lung, bronchitis, bronchial asthma, bronchiestasis in pulmonary embolism, pulmonary tuberculosis, Lung abscess, Emphysema. Diseases of Pleura-Pleurisy, Empyema, Pleural effusion. Bronchogenic carcinoma, Cystic Fibrosis, Sarcoidosis, Asbestosis.
5. **Diseases of digestive system:** Gastric and duodenal ulcers, haemtemesis, Jaundice (Brief concept), Chirosis of liver, Amoebic abscess, Acute appendicitis and pancreatitis, Constipation (Brief Outline of all these diseases) etc.
6. **Deficiency disease:** Rickets, Osteomalacia, Protein deficiency etc.
7. **Hematology:** Anemia- its types, Iron defficency, B12 deficiency, Thalasemia, Pernicious, Sickle cell anemia(Brief outline of all these diseases). Lukemia (Brief outline of all diseases)
8. **Renal diseases:** UTI, Acute and Chronic Renal failure, Glomerulo nephritis (Brief outline of these diseases)

9. **Skin Diseases:** Leprosy, elementary knowledge of skin and venereal diseases and infectious diseases.
10. **Poisoning:** Opiod, Salicylate and Paracetamol (Brief Outline of all these conditions)
11. **Infectious diseases:** Pyrexia of Unknown origin, Hepatitis, Enteric fever, Gastroenteritis, Diarrhea, Cholera, Tetanus, Rabies, AIDS, Syphilis, Gonorrhea, Malaria, Dengue, Roundworm and Tapeworm infections (Brief outline of all these conditions)

SECTION-II: NEUROLOGY

1. General principles of neurological diagnosis.
2. Vascular disorders of brain.
3. Space occupying lesions within the skull tumors, hematomas and abscess.
4. Acute infection of nervous system: Encephalitis, meningitis, poliomyelitis.
5. Common affections of peripheral, spinal and cranial nerves.
6. Injuries to brain and spinal cord.
7. Vertebral disc lesions and low back pain.
8. Cerebral palsy, hydrocephalus, spinal bifida, and myopathies.
9. Introduction to degenerative neurological conditions: syringomyelia, Parkinson disease, sub-acute combined degeneration. Disseminated sclerosis, lateral sclerosis, hereditary familial ataxias.
10. Headache and Epilepsy(Brief outline of these conditions)

BOOKS RECOMMENDED

1. Principles and Practice of Medicine by Davidson .
2. Principals of Internal Medicine by Harrison's.
3. Clinical Medicine by Kumar and Clark.
4. Diseases of nervous system by Walshe.
5. Brain and Bannister Clinical Neurology.
6. Clinical methods in medicine by Hutchinson.
7. Correlative neuro-anatomy and functional neurology by Joseph G. Cushid.
8. A.P.I Text book of Medicine Vol I & II.

Course: BPhT IInd Prof **Maximum Marks: 150**
Title: Surgery **Theory: 80 Internal Assessment: 20**
Course No: 2BPhT109 **Practical: External: 25 Internal: 25**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40).

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION-I : General Surgery

1. Description of events frequently accompanying surgery in general anesthesia, blood transfusion and physiological response of the body to surgery.
2. **Common pre and post operative complications:** Clinical picture treatment and prevention.
3. Haemorrhage, Shock classification and treatment, Water electrolyte imbalance(Brief concept)
4. **Wounds, sinuses and ulcers, cellulites:** incisions, healing and principle of treatment.
5. **Major abdominal surgery:** Management and complications.(Brief Concept)
6. **Thoracic and cardiac surgery**: Thoracotomy , Tubectomy and Pneumonectomy, Thoracoplasty, Mitral Valvotomy, CABG ,Peripheral vascular disease, Mastectomy
7. Hernia surgery precaution and complications.
8. **Neurosurgery:** Surgery of peripheral nerves and outline of cranial and spinal cord surgery.
9. **Plastic surgery:** Principles of tendon transplant, cosmetic surgery, types of grafts, surgery of hands with emphasis on the management of traumatic and leprosy hand.
10. **Burns:** Classification, early and late complication, and management and reconstructive surgery.
11. **Opthalmology:** Errors of refraction, conjunctivitis, trachoma, corneal ulcers, Iritis, cataract, retinitis, detachment of retina. Glaucoma, ptosis, defects of external rectus and hysterical blindness.
12. **E.N.T:** Sinusitis, Rhinitis, Otitismedia, Otosclerosis, Epistaxsis, Tonsilitis, Pharyngitis, Vertigo and Nystagmus, Functional aphonia and Deafness.
13. **Gyanae and Obs:** Incontinence-Stress incontinence, Urge incontinence, Prolapsed uterus
    Pelvic inflammatory conditions and other infections and carcinoma related to female genitalia.

Disorders of Menstruation (Brief Concept)
Antenatal and Post Natal Period, Complications of pregnancy, Labor and Delivery (Brief Concept)

SECTION-II ORTHOPAEDICS

Fractures, dislocation and Soft tissue injuries.

a) Pathology of fractures and repairs of bones, reasons for Union, Non-union, Delayed union, Fibrous union, Excess callus and myositis, general principles of treatment, common fracture of upper extremity, lower extremity and fractures of the vertebra.
   Newer methods of fracture stabilization, special references to postoperative exercises and prevention of joint stiffness. Spinal exercises for prevention of deformities.
b) Dislocation of shoulder, elbow, hip, knee and spine.
c) Soft tissue injuries, rupture, contusion and sprains and strains of muscle, tendons and ligaments.

Deformities:

a) Common Congenital deformity-Pes planus, Pes cavus CTEV. Congenital Torticollis, Cervical rib, Spina bifida, CDH, Sprangel's Shoulder.
b) Acquired: Scoliosis, Kyphosis, Lordosis, Coxavara, Genuvalgum and varum, Genu recruvatum, Metatarsalgia,Plantar fasciitis, Hallux valgus, Claw hand, Dupuytren's contracture, Mallet finger,Ganglion, Carpal tunnel syndrome, Periarthritis Shoulder, Supra spinatus tendinitis, Rotator cuff injury.
c) Operative procedures and orthopedics appliances

Common Orthopedics Procedures

a) Reconstructive operations, Arthroplasty, Arthrodesis, Tendon repairs and transfers, bone graft, bone cement
b) Amputations: Common sites of amputations, advantages and disadvantages, amputation of upper and lower extremities.

Inflammatory diseases and other infections of bones:

a) Bones-Osteomyelitis, Septic arthritis, Gouty arthritis, Osteoarthritis, Psoriatic arthritis, T.B. Bone
b) Joints osteoarthritis, Rheumatoid arthritis, Ankylosing spondylitis, T.B. Joints, Synovitis.
c) Tendon sheath and Bursitis, Tenosynovitis.
d) Osteomalacia, osteoporosis, Rickets.
   Neoplasia of Bones- Brief out line of Bone tumors and types.

BOOKS RECOMMENDED

Surgery for nurses by Baily & Love .
Short practice of surgery by Baily & Love .
Manipal Manual of Surgery by Shenoy,Rajgopal
Textbook of Surgery by Das.
Textbook of surgical short cases by Das,Somen.
Outline of Orthopedics by Adams (Livingstone).
Outline of fracture by Adams (Livingstone).
Illustrated review of fracture treatment by Liebolt lange
Essential Orthopedics by Maheshwari.
Textbook of Orthopedics by Ebnezer, John.
Textbook of Gaynecology and Obstetrics by DC. Dutta.

Course: BPhT IInd Prof **Maximum Marks: 50**
Title: Pharmacology **Theory: 40 Internal Assessment: 10**
Course No: 2BPhT110
Duration: 2 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of twenty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I

1. General action of drugs
2. Drug allergy and idiosyncrasy
3. Drug toxicity
4. Metabolic fate of drug
5. Methods of administration
6. Chemical character of drug
7. Drugs acting on central nervous system-anesthetics, alcohol, alkaloids, narcotics, antipyretics, hypnotics, sedatives, anti convulsive, stimulants, psychotherapeutics.
8. Drugs acting on peripheral nervous system-stimulating and inhibiting cholinergic and adrenergic activity.
9. Drugs acting on neuromuscular junction and muscles.

Section II

10. Drugs acting on cardio vascular system
11. Drugs acting on respiratory system
12. Chemotherapeutic agents.
13. Hormones and drugs affecting on endocrine functions.
14. Metabolic and other inorganic compound.
15. Vitamins.
16. Immunologic agents.
17. Diagnostic agents.

18. Dermatological Drugs-Scabies, Psoriasis, Local antifungal.
19. Anti Tubercular and Anti leprosy drugs, Anti viral drugs.

BOOKS RECOMMENDED

Goodman and Gilman's The pharmacological basis of Therapeutics.
Essentials of Medical Pharmacology by Thripathi
Textbook of Pharmacology by Seth
Pharmacology and Pharmaco therapeutics by Satoskar
Lippincott's Illustrated reviews: Pharmacology by Harvey, Richard.

Course: BPhT IInd Prof **Maximum Marks: 200**
Title: Medical Electronics & Electrotherapy **Theory: 80 Internal Assessment: 20**
Course No: 2BPhT111 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40).

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION I : FUNDAMENTAL OF ELECTRICITY

1. **Physical Principles:**

1. Structure and properties of matter-solids, liquids and gases-cohesion, adhesion, surface-tensionm, viscosity, density and elasticity,
2. Structure of atom, molecules, elements and compounds.
3. Electron therapy, static and current electricity.
4. Conductors, insulators, potential, resistance, intensity.

2. **Rectifying devices**: Thermionic valves, semiconductors, transistors, amplifiers and oscillator circuits, capacitance, condensers and D.C. and A.C. circuits.

3. **Effect of current electricity:**

1. Chemical effects: Ions and electrolytes, ionization, production of an EMF by chemical actions
2. Magnetic effects, molecular therapy of magnetism, magnetic fields, electromagnetic induction. Milli ammeter and voltmeter, transformers and choke coil.
3. Thermal effects-Joule in bast and float production.
   Pain-Physiology of pain , its types ,assessment, treatment

ELECTROMAGNETIC RADIATION

1. **Electromagnetic waves**

Electromagnetic spectrum, physical properties of Electromagnetic radiations-reflection, Refraction, Absorption, Penetration, Grothus law, Cosine law, Inverse square law, Arndt Schultz Law, Law of Grothus Drapper Law and its practical applications.

2. **Principles of production of U.V.R**

Mercury vapour lamps

Effects of UVR

Structure of skin, penetration and absorption of UVR

Erythema, different degrees of erythema.

Test dose, techniques to find out the last dose and its importance.

Techniques of application of UVR in local and general irradiation, specific conditions like psoriasis, acne alopecia, indolent wounds.

Techniques of applications using accessories, Filters, sensitizers.

Dangers and contra-indication.

3. **Infrared rays**

Production, Luminous and non luminous generators

Effects of infra red rays.

Techniques of application

Dangers and contra indications

4. **Laser Therapy**- Physiological and therapeutic effects ,techniques and methods of applications, effect and uses, indications and contraindication, Test doses and Dangers.

SECTION II: LOW AND MEDIUM FREQUENCY CURRENTS

1. **Low frequency currents**

i) Direct and A.C. currents

ii) Production of direct current: Physiological and therapeutic effects of constant current anodal and cathodal galvanism. Ionization and application in various conditions.

iii) Modified direct current various pulses, direction and frequency and their affect on nerve and muscle tissue. Production of interrupted and surged direct current, circuit diagram and principles of working.

iv) Physiological and therapeutic effects-their application and techniques in various conditions.

v) Acupuncture and its therapeutic applications and their techniques.

Main supply-Brief cutline of mains distribution, dangers short circuits, shocks, precautions, safety devises, earthing, fuses etc.

2. **Electrical reactions and electro diagnostic tests**

1. Electrical stimuli and normal behavior of nerve and muscle tissue to these stimuli.
2. Types of lesion and development of reaction of degeneration.
3. Faradic –I.D.C Test
4. Nerve conduction test.
5. S.D. Curve and its interpretation.
6. Pulse ratio
7. Chronaxie and Rheobase, Myasthenic and Myotonic reactions.
8. Elements of FES,TCDNS(Trans cranial direct nerve stimulation) (Brief Concept)

3. **T.E.N.S**

Definition, Types, Physiological and Therapeutic effects, Indication and Contraindications, Techniques and Types of Application.

4. **Medium Frequency Currents**

a.IFT- Definition, Types, Physiological and Therapeutic effects, Indication and Contraindications, Techniques and Types of Application.

b. Russian Currents, Rebox current.

HIGH FREQUENCY CURRENT

1. **Introduction**
2. Difference between low frequency and high frequency current and heat production in tissues.
3. Principles of production of high frequency currents, circuit diagram and principles of working. Common methods of current regulations. Interference with ratio communication and principles of stabilizing frequency and eliminations of harmonics Physiological and therapeutic effects.
4. Application of short wave diathermy, condenser field and inductothermy methods, heating of the tissues in series and parallel. Unity of various methods in treating various types of tissues in body of planner, contra planner various types of coil methods. Size and spacing of electrodes, position of electrodes and various types of coils. Deep heating and superficial heating.
5. Technique of application of SW Diathermy to various part of body in various conditions by suitable methods to achieve maximum effect.
6. Application of microwave in general and in specific conditions in various parts of body. Microwave diathermy: Principles of production (elementary knowledge): specific physiological and therapeutic effects. Application of microwave in general and in specific conditions to various parts of body.

2. Ultra-sonic therapy

1. Definition of sound and ultrasound and its physical properties, velocity, density and characteristic impedance, reflection, transmission, absorption, cavitations and half valve thickness.
2. Production of ultrasound: physiological and therapeutic effects of ultrasound, micro massage and thermal effect, biological effects-chemical and electrical effects.
3. Principles of treatment-technique of application, close indication and contra-indications, dangers and precautions.
4. Basic concept of Long wave therapy

3. Infrared and ultraviolet radiation

Introduction and physical properties and production.
Physiological and therapeutic effects
Techniques of application, dosage, dangers and precaution.
Special techniques of ultraviolet radiation i.e. indolent wounds, psoriasis etc.

4. Electrotherapeutic wound care

Types of wound, Application of therapeutic currents, Ultrasound and Laser.

5. Role of Electrotherapy in Rehabilitation.

Concept of Biofeedback, NCV and EMG-Principles, Methods, Uses.

6. Practical application of Electrotherapeutic modalities in important musculoskeletal and neurological conditions.

BOOKS RECOMMENDED:

1. Clayton's electrotherapy: Theory and practice by Foster,angela.
2. Clayton's electrotherapy by Kitchen, Sheila.
3. Electrotherapy Explained: Principle and Practice by Low and Reed.
4. Textbook of Electrotherapy by Singh Jagmohan.
5. Basics of Electrotherapy by Khatri Subash.
6. Preliminary and practical electro therapy for PTS by Benda savage .
7. Therapeutic Electricity and ultraviolet by Sidney Licht .
8. Electro diagnosis and electromyography by Sidney .

9. Both the use of high frequency currents by Staffed Caborne .
10. Principles and practice of diathermy by Bryan Scott.
11. Electronics in physical medicine by Hightingle.
12. Therapeutic heat and cold by Sidney Licht .
13. Ultrasonic techniques in Biology and Medicine by B. Brown and D. Gredon .
14. Bio-medical electronic, by Howard Yanof (F.A. Davis).
15. Cold Therapy in rehabilitation by Jerfiner Miss Lee and Maragaret P.

UNIVERSITY OF JAMMU
3rd Prof BPh.T SYLLABUS

Transcript Hrs.1500

S.No.	Subjects	Didactic Hours	Practical/Demonstration/Clinical Hours	Total Hours
1	Physiotherapy in Medical Conditions	150 Hrs	400 Hrs	550 Hrs
2	Physiotherapy in Surgical Conditions	150Hrs	400Hrs	550Hrs
3	Rehabilitation Medicine	100Hrs	50Hrs	150Hrs
4	Applied Mathematics statistics & Research Methodology	100 Hrs	-	100Hrs
5	Psychiatry	100Hrs	50Hrs	150Hrs

The scheme of examinations shall be as under:-

1.	Physiotherapy in Medical Conditions		Marks	Time
	Theory :	i) University Examination	80	3 Hrs
		ii) Internal Assessment	20	
	Practical :	i)University Examination	50	
		ii) Internal Assessment	50	
		Total	200	
2.	Physiotherapy in Surgical Conditions:			
	Theory	i)University Examination	80	3 Hrs
		ii) Internal Assessment	20	
	Practical			
	i)	University Examination	50	
	ii)	Internal Assessment	50	
		Total	200	
3.	Rehabilitation Medicine			
	Theory	i)University Examination	40	2 Hrs
		ii)Internal Assessment	10	
		Total	50	
4.	Applied Mathematics statistics & Research Methodology:			
	Theory	i)University Examination	40	2 Hrs
		ii)Internal Assessment	10	
		Total	50	
5.	Psychiatry:			
	Theory	i) University Examination	40	2 hrs
		ii)Internal Assessment	10	
		Total	50	

Course: BPhT IIIrd Prof **Maximum Marks: 200**

Title: Physiotherapy in Medical Conditions **Theory: 80 Internal Assessment: 20**
Course No: 3BPhT112 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40).

a) Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).

b) Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION-I: PHYSIOTHERAPY IN ARTHROLOGY AND CARDIOPULMONARY CONDITIONS

1. **Pathological changes**

1. Review of pathological changes and principles of the treatment by physio-therapy of:
   - i) Inflammation-acute, chronic and suppurative.
   - ii) Oedema-Traumatic, obstructive, paralytic oedema due to poor muscle and laxity or the fascia.

2. **Arthritis and allied conditions (in details)**

i) Osteo-arthiritis- Generalized degenerative , Spondylosis.
ii) Rheumatoid arthritis, Still's diseases, Infective arthritis.
iii) Spondylitis- Ankylosing spondylitis.
iv) Non-articular rheumatism-Fibrositic myalgia, Paniculitis, Bursitis.
v) Metabolic and Harmonal disorders

3. **Diseases of the respiratory system**

1. Pulmonary anatomy,Mechanism of respiration.
2. Examination of chest of patients and principles of physiotherapy treatment.
3. Bronchitis, Asthma, Lung abscess, Bronchietasis, Emphysema, Cystic fibrosis
4. Pleurisy and Empyema, Pneumonias, Hydropneumothorax, Atelactasis.
5. Bacterial diseases-Tuberculosis.
6. Carcinoma of respiratory tract.
7. Adjunct therapy-Nebulisation, Humidification, PEEP, Bronchial Hygiene therapy.

8. Pulmonary Rehabilitation
9. Investigations in Pulmonary conditions.
4. **Common conditions of skin-** Psoriasis, Hyperhidrosis, Acne, Alopecia, Leucoderma, Leprosy
5. **Common cardiac disorders.**
   1. Anatomy and physiology of Cardiac system
   2. Thrombosis, Embolism, Burger's disease, Arterio-sclerosis, Thrombophlebitis, Phlebitis, Gangrene, Atherosclerosis, Varicose veins
   3. MI, Angina, Congestive cardiac failure, Hypertension, Rheumatic fever, Infective endocarditis, Congenital Heart diseases.
   4. Investigation in Cardiac conditions.
   5. Cardiac Rehabilitation.
   6. Basic ICU Evaluation and Techniques
6. Deficiency disease: Rickets, Osteoporosis, Vit A and D deficiency.

SECTION-II: PHYSIOTHERAPY IN NEUROLOGICAL AND GERIATRICS CONDITIONS

Neurological Conditions

1. Examination of neurological disorder and principles of treatments
2. Hemiplegia, paraplegia, Cerebral palsy, Down Syndrome,Hydrocephalus, Tabes dorsalis, Cerebellar Ataxia, Extra pyramidal lesions, Dyskinesis and its types .
3. Disseminated sclerosis,G B Syndrome, Peroneal, Limb Girdle, Beckers, Duchene's muscular atrophy, MND, Amytrophic lateral sclerosis, Progressive muscular atrophy, Syringomyelia, Sub-acute combined degeneration of cord.
4. Peripheral nerve and Cranial nerve lesions, Tumors of Peripheral nerve.
5. Neuritis and Neuralgia-Brachial, Sciatica and facial palsy.
6. Infections-Poliomyelitis, Meningitis, Encephalitis, Polyneuritis.
7. Brain abscess, Brain tumor.
8. Myopathies ,EMG and NCV, Motor learning Theory

Pediatrics and Geriatrics

1. Special problems of elderly and children related special conditions to which they are prone.
2. Treatment as modified to their particular needs of each age group.
   Osteoarthritis, Osteomalacia, Rickets, Alzheimer's disease,ARDS

RECOMMENDED BOOKS

Cash Textbook all volumes i) Neurology ii) Chest and cardiac iii) PT Medicine and Surgery iv)Orthopedics and Rheumatology by Downie and Patricia.

Adult Hemiplegia by Berta, Bobath.

Neurological Rehabilitation by Caar, Janet and Shepherd.

Physiotherapy in Neurology by Raj, Glady Sameul

Neurological Rehabilitation by Umphered, Dracy A.

Treatment of Cerebral palsy and Motor Delay by Sophie,levitt.

Physical Rehabilitation: Assessment and treatment by O'Sullivan,Susan.

Tidy's Physiotherapy by Thompson,Ann

Goel's Physiotherapy.

Physiotherapy in Pediatrics by Shepherd , Robert B.

Principles of Geriatric Physiotherapy by Multani Narinder Kaur

Cardiopulmonary Physical therapy by Iawin Scott.

Cardio Respiratory Physiotherapy by Smith, Mandy and Ball

Course: BPhT IIIrd Prof **Maximum Marks: 200**
Title: Physiotherapy in Surgical Conditions **Theory: 80 Internal Assessment: 20**
Course No: 3BPhT113 **Practical: External: 50 Internal: 50**
Duration: 3 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of forty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry forty marks (Marks-40).

a) **Will consists of ten very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. Two questions will carry two marks (2) each, whereas, the rest of the eight questions will carry one and a half (1½) each with total weight- age being sixteen marks (16).**

b) **Will consists of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidate is required to attempt any two out of four. Each question will carry twelve marks (12) , with total weightage being twenty four marks (24) and total weightage of the part shall be forty marks (40).**

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry forty marks (Marks-40)

Will consists of short answer questions with answer to each question up to two pages in length. Twelve questions will be set by the examiner and the candidate is required to attempt any Eight out of twelve. Each question will carry five marks (5) each with total weightage of the part shall be forty (40) marks.

SECTION-I: PHYSIOTHERAPY MANAGEMENT IN GNERAL, CARTIOTHORACIC, ENT, PLASTIC GYNAECOLOGY AND OSTETERICS SURGERY

1. Complications common to all operations: pre post operative physiotherapy.
2. Wounds, local infection, Ulcers, surgical procedures related to peripheral vascular diseases.
3. Burns, degrees of burns, Skin grafting.
4. **General abdominal surgery and Obstetrics and Gynecology**.
   - i) Abdominal incisions: its pre and post operative physiotherapy.
   - ii) Operations on stomach, intestines, appendectomy, spleenectomy, cholecystectomy.
   - iii) Operations on abdominal wall, hernia.
   - iv) Operation of genito-urinary system, prostatectomy, nephrectomy.
   - v) Prolapsed rectum.
   - vi) Antenatal and Post natal training
   - vii) Complications of pregnancy
   - viii) Labor and Delivery
   - ix) Incontinence-Stress incontinence, Urge incontinence
   - x) Prolapsed uterus
   - xi) Weak abdominal and pelvic floor muscles
   - xii) Special points related to pelvic surgery.
   - xiii) Pelvic inflammatory conditions and other infections and carcinoma related to female genitalia.
   - xiv) Disorders of Menstruation
   - xv) Surgery of the breast radical mastectomy, physiotherapy related to above conditions.

5. Thoracic Surgery

i) Pulmonary Surgery:Thoracic incisions, pre and post operative treatment and later rehabilitation of the patients.Lobectomy, pneumonectomy, thoracotomy, thoracoplasty, Thoracic trauma and its complications.

ii) Operations on chest wall, ICU Evaluation and physiotherapy techniques.

iii) Injuries to chest wall and common complications with emphasis to Atelectasis., Pneumothorax, brochcopulmonary fistula, Pre and post operative physiotherapy related to surgica. Pulmonary conditions. Pulmonary investigations, Pulmonary rehabilitation.

iv) Cardiac Surgery:Operations or pericardium and heart, Chronic constructive pericarditis, vulvular incompetence and stenosis, mitral volvotomy, congenital heart defects, patent ductus arteriosus, tetrology of fallat.

v) CABG, Angioplasty, Cardiac transplant, Exercise stress testing ,6 min walk test, Shuttle walk test, MET, FITT Principle,Cardiac Investigations, Cardiac Rehabilitation.

vi) Peripheral vascular diseases:DVT, SVT, Varicose Veins, Pulmonary embolism, Atherosclerosis, Burgers Disease, Raynaund's disease, Gangreen, Lymphoedema.Post surgical PT treatment in these conditions.

ENT

Ear, nose and throat conditions: Otitis media, Sinusitis, Vasomotor rhinorrhoea, Adenoids, Tonsillitis, Vertigo, Nystagmus , Epistaxsis and physiotherapy related to these conditions.

6. Neuro-surgery

i) Cranial surgery: Head injuries, intracranial abscess, intracranial tumours.

ii) Surgery of spinal cord and cauda equina. Spina Bifida and its complications. Infections of the spine. Epidural abscess, Tuberculosis, Spinal tumors, lumbar disc herniation, cervical disc herniation, laminectomy. Pre and post operative physiotherapy treatment related to above conditions.

iii) Surgery of peripheral nerves, peripheral nerve injuries, Tumors of Peripheral nerves pre and post operative physiotherapy treatment as applicable to above conditions.

iv) Hydrocephalus.

v) Pre and post operative Physiotherapy, relating to plastic surgery.
Tendon, transplantation in leprosy, syphilis. Poliomyelitis, etc pre and post-operative physiotherapy related to above conditions.

SECTION-II: PHYSIOTHERAPY IN TRAUMATOLOGY AND ORTHOPAEDIC CONDITIONS

Orthopedics and Fractures

1. Fractures and dislocations
2. Classifications
3. Types of displacement
4. Immediate and late sign and symptoms
5. Changes at fracture site and in surrounding tissues.
6. Reasons for union, non-union, delayed union
7. Methods of reduction and fixation.
8. Healing of fracture and factors influencing.
9. Common fractures of upper and lower extremity and their complication.
10. Physiotherapy for each fracture.

a. During immobilization period.
b. During mobilization.

11. Dislocation with possible complications.
12. Corrective surgery:

a. Arthroplasty, Arthrodesis, Osteotomy, Tendon transplant, Soft tissue release, Grafting.
b. Physiotherapy treatment as applicable to above condition.

13. Soft tissue injuries: Synovitis, Capsulitis, Bursitis, etc, Volkman's ischemic contracture.
    1. Crush injuries, Repair of injured tendon and nerve, Injuries of Semilunar cartilage and Cruciate ligaments of knee: Physiotherapy treatment as applicable to above conditions.
14. Deformities:

1. Congenital: Torticollis, Cervical rib, Sprenglers shoulder, Coxa vara, Hallux vulgus, Pes cavas, Pes planus, CTEV, DDH and other common deformities.
2. Acquired: Scoliosis, Kyphosis, Lordosis, Cox-vara, Genu valgum, Genu varum and Genu recurvatum, Pes planus and other common deformities.
3. Regional conditions of Upper and Lower limb: P A Shoulder,Supraspinatus tendinitis,Rotator cuff injury, Ganglion, Tennis Elbow, Trigger finger, Metatarsalgia, Plantar fasciitis, Chodromalacia Pattela etc.
4. Physiotherapy treatment related to above conditions.

15.Amputation: Traumatic, Elective, common sites of amputation in upper and lower extremities. Advantages and disadvantages. Physiotherapy treatment as applicable to care of prosthetic training with emphasis on lower extremity.

16. Bone Tumors (Brief Concept)

Note: Emphasis should be or the assessment of disability with the selection of treatment based on these. Where possible treatment should be related to the activities of daily living and patient's occupation and directed towards the development of self confidence and independence.

RECOMMENDED BOOKS

Cash Textbook all volumes i) Neurology ii) Chest and cardiac iii) PT Medicine and Surgery

iv) Orthopedics and Rheumatology by Downie and Patricia.

Physical Rehabilitation: Assessment and treatment by O'Sullivan, Susan.

Tidy's Physiotherapy by Thompson, Ann

Orthopedic Physical therapy by Donatelli, Robert A.

Essential of orthopedics for Physiotherapist by Ebenezer.

Essentials of Orthopedics and applied physiotherapy by Joshi, Jayanti and Kotwal.

Physiotherapy in Obstetrics and Gynaecology by Mantle,Jill.

Textbook of Physiotherapy for Obstetrics and Gynaecological conditions by Madhuri

Physiotherapy in Obstetrics and Gynaecology by Polden.

Orthopedic Physical Assessment by Magee,David.

Vestibular rehabilitation by Herdman,Susan J.

Neurological Rehabilitation by Caar, Janet and Shepherd.

Physiotherapy in Neurology by Raj, Glady Sameul

Neurological Rehabilitation by Umphered, Dracy A.

Cardiopulmonary Physical therapy by Iawin Scott.

Cardio Respiratory Physiotherapy by Smith, Mandy and Ball

Course: BPhT IIIrdProf **Maximum Marks: 50**
Title: Rehabilitation Medicine **Theory: 40 Internal Assessment: 10**
Course No: 3BPhT114
Duration: 2 Hrs

Instructions for Paper Setters: Each Question paper will consists of two parts ie; Part I and Part II. Each Part will be of twenty marks.

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I

1. National and International Definition of Health, Role of Socio Economic, Cultural and Environmental factors in health and disease.
2. Epidemiology-Definition and scope. Uses with relation to physiotherapy.
3. Health care delivery system in India, National health Programs, Role of WHO.
4. Primary Health Care-Definition Principle and Elements and application.
5. Disability-evaluation, types, prevention, Handicap, Impairment and various factors affecting them.
6. Rehabilitation-definition, types. National policies for rehabilitation The Philosophy and need of rehabilitation. Principles of Physical Medicine, Basic principles of Administration and organization. The evaluation process and treatment planning, Principles of prescription writing.
7. Rehab team work. Role of physiotherapy.
8. Community based rehabilitation strategies in Urban health centre and Primary health centre.

Section II

1.Basic Concept of Communicable, Non Communicable and Nutritional diseases.
2.Objectives of National Family Programs.
3.Child Health and growth monitoring.

4.Women and Geriatric Health: Social issues and their impact on physical health, Legal rights and benefits related to health, Role of NGO's in their health. Basic health issues for women and old age person in communities and role of rehab team in education of women and old age people.
5.Industrial health: Various environmental stress in industrial area, Physical, Chemical and Mechanical hazards and disability management among industrial workers.
6.Introduction and basic concept of Disaster management.
7.Principles of orthotics and Prosthetics: Lower extremity orthotics,Upper extremity orthotics,Spinal orthotics. Lower extremity prosthetics, Upper extremity prosthetics.
8.Communication problems. Principles of management of Communication problems. Social problems, Vocational problems and vocational placement and Vocational Rehabilitation.Disability Percentage.

RECOMMENDED BOOKS

Textbook of Rehabilitation by Sunder S
Community based rehabilitation of person with disabilities by Pruthvish S.
Park's Textbook of preventive and social medicine.
Essential of community medicine by Baride and Kulkarni.
Text book of community health for physiotherapist Bhaskar Rao.

Course: BPhT IIIrd Prof **Maximum Marks: 50**
Title: Applied Mathematics statistics & research methodology **Theory:40 Internal Assessment:10**
Course No: 3BPhT115
Duration: 2 Hrs

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

SECTION-I: Mathematics and Statistics

General Mathematics: General algebra, Logarithms, use of logarithmic tables. Representations of data by Graphs-Linear and semi-log graphical solution of quatros, computation of length, volume, centre of gravity and moment of inertia.

Statistics: Frequency distribution, normal distribution curve, histogram, measures of central value-mean, median, mode. Measures of variability-range, semi-inter-quartile range (SIQR) standard deviation, variance, co-efficient variation. Finding percentile norms, percentile rank by interpolation in cumulative distributions.

Correlation-product-moment, coefficient of correlation, ranks difference correlation.

Reliability and significance-standard error of a mean and its interpretation role reliability of a difference between means.

SECTION-II: Statistics and Research Methodology

Research Fundamentals: Define measurement, Measurement framework, Scales of measurement, Pilot Study Types of variables, Reliability & Validity, Drawing Tables, Graphs, Master chart

Writing a research proposal: Defining a problem, Review of Literature, Formulating a question, Operational Definition, Inclusion & Exclusion criteria, Methodology-Forming groups Data collection & method for analysis, Informed Consent Steps of documentation –Title to Scope of study.

Importance of Ethics in Research: Main ethical issues in human subjects' research, Main ethical Principles that govern research with human subjects, Components of an ethically valid informed consent for research.

Overview of Study design: Observational- Descriptive-Case study/ series, Cross sectional, Normative, Correlational , Analytical; case control, cohort. Experimental- True & quasi experimental

Sampling: Random and Non Random Sampling, Various methods of sampling.

Concept of Probability and probability distribution.

Test of Significance: Basics of testing of hypothesis – Null and alternate hypothesis, type I and type II errors, level of significance and power of the test, p value.

Tests of significance (parametric) - t – test (paired and unpaired), Chi square test and test of proportion, one way analysis of variance. Repeated measures of analysis of variance.

Tests of significance (non-parametric)-Mann-Whitney u test, Wilcoxon test, Kruskal-Wallis analysis of variance. Friedman's analysis of variance.

Correlation and Regression: Pearson's and Spearman's

Research Report: Overview, Types and Publication.

BOOKS RECOMENDED

Research Methods for clinical therapist by Hicks.

Statistical methods by Gupta, S.P.

Methods in Biostatistics-B.K. Mahajan

Fundamental of Mathematical Statistics by Gupta S C and Kapoor V K.

Research Methodology and Bio statistics (exclusively designed for BPT students) Bais, Vinod Kumar.

NCERT Mathematics book for Secondary and Higher Secondary Level.

Course: BPhT IIIrd Prof **Maximum Marks: 50**
Title: Psychiatry **Theory: 40 Internal Assessment: 10**
Course No: 3BPhT116
Duration: 2 Hrs

Part-I: To be set by External Examiner from Section –I of the prescribed course and will carry twenty marks (Marks-20)

a) Will consists of five very short answer questions with answer to each question up to five lines in length. All questions will be compulsory. One question will carry two marks (2), whereas, the rest of the four questions will carry one and a half marks (1½) each with total weightage being eight marks (8).

b) Will consists of essay type questions with answer to each question up to five pages in length. two questions will be set by the examiner and the candidate is required to attempt any one out of two. Each question will carry twelve marks (12), with total weightage of the part shall be twenty marks (20).

Part-II: To be set by Internal Examiner from Section –II of the prescribed course and will carry twenty marks (Marks-20)

Will consists of short answer questions with answer to each question up to two pages in length. Six questions will be set by the examiner and the candidate is required to attempt any four out of six. Each question will carry five marks (5) each with total weightage of the part shall be twenty (20) marks.

Section I

1. (a) Mental Health
   (i) Normal Mental Health
   (ii) Criteria of normality or matured personality
   (iii)Factor contributing to normal mental health
   (iv) Self actualizing individual
   (b) Study of abnormal personality: Neurotic, hysterical, psychotic, paranoid, schizoid, psychopathic etc.

2. Mental Retardation: i) Definition ii) Etiological factors, prenatal, postnatal, infective, hormonal congenital

   i) Types of mental retardation clinical types-microcephaly, hydrocephalus, mongolism, phenylketonuria etc.
   ii) Symptomatology of various grades of retardation, differential diagnosis and treatment.

Child Psychiatry: Behavior disorder: nail biting enurosis, thumb sucking, speech difficulties, pica, vomiting, anorexia, delinquency.

Section II

2. General etiological factors: Hereditary, genetical, constitutional, required traumatic, infective, toxic, degenerative, social and environmental including pathogenic family patterns, precipitating causes, frustration and conflicts.
   Symptomatology and treatment of:

a) Psychosis:
   iii) Educational: Functional schizophrenia, reaction group, simple paranoid, catatonia, hebephrenic paranoid, state Paranoid, juvenile schizophrenia, autistic thinking, dementia.
   iv) Organic: Toxic confused states, senile psychosis, arteriosclerotic, degenerative G.P.I.

b) Affective disorders: Dynamics of mania, hypomania, chronic mania, M.D.P. Involutional depression, senile depression, postpartum depressive reactions, reactive and neurotic depression, anchgenosis depression, suicide.

c) Epileptic disorders: Epileptic psychosis.

Neurosis: Symptomatology, diagnosis and treatment and psycho dynamics of anxiety state, hysteria, conversion reaction, dissociative reaction, dual personality obsessional neurosis, phobias, hypochondriasis, neurasthenia and mental fatigue.

Introduction to the dynamics of psychological disorders:
Asthma, skin rashes, hypertension, bowel disorders.

Introduction to treatment in Psychiatry i) ECT ii) Insulin therapy iii) Drug Therapy-tranquillizers, mood elevators hypnotics and sedatives iv) Psychotherapy- deep and superficial individual and group expressive suppressive environmental manipulation , reductive v) Psychodrama vi) Psychoanalysis vii) Play therapy viii) Physiotherapy and occupational therapy

BOOKS RECOMMENDED

Physiotherapy in Psychiatry- D.M. Hare
Short text book of Psychiatry – Neeraj Ahuja
Short text book of Psychiatry- M.S. Bhatia
Textbook of Child adolescent Psychiatry-Wiener, Jerry
Psychiatry made easy-Anbu