



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

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SYLLABUS

DIPLOMA IN PHYSIOTHERAPY

FIRST YEAR

➤ **1) Anatomy :**

(Marks 05)

(a) Anatomy

- Histology-cell tissue of the body, epithelium, connective tissue, cartilage, bone, blood, lymph, muscles, nervous system.
- Osteology- formation, classifications, functions, growth and repair of bones.
- Embryology- Ovum, Spermatozoa, Fertilization, organogenesis, Development of various systems.
- Blood Vascular system –arteries, capillaries, veins, lymphatic system.
- Respiratory System –anatomy of larynx, trachea and bronchi, the pleura, the lungs.
- Digestive system
- Urogenital system
- Surface Anatomy.

(b) Neuro-Anatomy

- Microscopic and gross study of
- Peripheral Nerves
- Neuromuscular Junction
- Sensory Organs
- Spine Cord- Segment & Areas
- Brainstem
- Cerebellum
- Inferior colliculi
- Superior Colliculi
- Diencephalon
- The Hypothalamus

- The Hypothalamus
- The thalamus
- The Cerebral Hemispheres
- The Corpus Striatum
- The Rhinencephalon
- The Lateral Ventricles
- The Meninges
- The Blood supply of the Brain

➤ 2. Human Physiology

(Marks 5)

- Structure of Human Cell
- Elementary tissues of Body
- Blood , composition, function , Grouping Blood Disorders.
- CVS (Cardio Vascular System) Structure of Heart, Cardiac cycle, Hypertension Cardiac disorders reference to Physiology.
- Digestive System –Physiology anatomy, Process of digestion, organs of digestion and disorders.
- Respiratory system –structural Physiology process of respiration
- Excretory system; detailed structure of kidney , function, disorders,
- Elementary knowledge of structure and function of organ of taste, smell, eye and skin.
- Endosionology ; All the endosine glands in detail
- Reproductive system; physiology /Anatomy
- Introduction to pathology
- Repair and inflammation
- Pathological terms
- Pathology of various organs
- Role of pathology in physiotherapy
- Review of pathology changes of various organs and their treatment
- Drugs action on central nervous system. Anesthetics, alkaloids , narcotics, analgesics,
- antipyretics, sedatives, anticonvulsants,
- Drugs action on cardiovascular System, neuromuscular system, respiratory system.
- Drugs acting with Peripheral Nervous system
- Chemotherapy
- Hormones and drugs effecting Endocrine functions
- Vitamins
- Metallic and other Inorganic compounds
- Immunological agents
- Diagnostics.

➤ 3. Exercise therapy & massage

(Marks 10)

- Mechanical anatomy of motion and posture
- Exercise of the shoulder and hip and evaluation
- Exercise of the Foot and Hand evaluation

- Exercise of the Knee and elbow and evaluation
- Vicarious motion
- Joint motion assessment
- Manual muscle examination
- The therapeutic gymnasium
- Exercise based on Neuro Physiological Principles
- Crutch and cane exercises
- Gait training
- Principles of therapeutic exercise
- Postures
- Exercises for healthy persons
- Activities of daily living
- Exercise of spine
- Massage
- Suspension therapy
- Neuro muscular co-ordination
- Starting postions
- Cryotherapy.

➤ 4. Electro therapt & actino therapy

(Marks 20)

✚ UNIT – I (Medical Electronics)

- Electrical fundamentals
- Electron tubes
- Power supplies
- Amplifiers
- Oscillators
- Cathocde ray tubes
- Transistors
- Recorders
- Transducers
- Radiation
- Principles of designs and circuits of infrared and ultra violet generators, shortwave
- Diathermy, microwaves, ultrasonics and electrical stimulators
- Signal processes
- Display devices and indicators
- Magnetic tape recorders
- Data transmission and processing

✚ UNIT – II

- Physics of heat
- Thermometry
- Biophysics of diathermy
- Physiology of heat and cold
- Thermal radiation, pain and injury
- General principle of thermotherapy
- Conducting heating
- Luminous and infra-red heating

- High frequency instrumentation
- Short wave diathermy
- Microwaves
- Ultrasound therapy
- Instrumentation of electrotherapy
- Therapeutic electro stimulation
- Iontophoresis
- Electrosleep Therapy and anaesthesia
- Instrumentation for ultraviolet therapy
- Physiological effects of Ultraviolet radiation
- Low frequency currents
- T.N.S.
- Interferential therapy
- Wax Therapy

UNIT – III (Electro-Physiology)

- Electric potential generated by cell
- Electrogenic membrane response
- Chemoresponsive electrogenic system
- Propagation of nerve impulse
- Neuromuscular Junction
- Synapse
- Muscle Electronic
- Electrophysiology of CNS
- Chronaxy
- Strength duration curves
- Electromyography
- Electrical duration curves
- Nerve conduction studies
- Microneurography
- Reflex Physiology Monosynaptic and Polysynaptic reflexes
- Spinograms
- Cerebral evoked potentials.

➤ 5. Psychology

(Marks 05)

- Definition and scope of psychology in relation to occupational therapy Physiotherapy.
- Methods of studies in Psychology.
- Psychological Development of human individual from conception to birth to old age.
- Special needs, characteristics and problems of the various groups of Handicapped.
- Learning, factors affecting learning, disabilities techniques to deal with implications of
- various handicaps in the learning process. Principles of learning for various
- handicapped groups, Techniques of motivating the handicapped children.
- Adjustment, criteria of mental health, adjustment problems faced by handicapped

- children, counseling and guidance with special reference to the physically and mentally handicapped.
- Interaction with the family, community and poor groups Communication pattern,
- specific problems faced by handicapped, development of social skills and sensitivity
- training.
- Role of Psychologist in Rehabilitation of the handicapped.

SECOND YEAR

➤ **1. Medicine**

(Marks 10)

- ✓ **General Medicine including Respiratory Diseases**
 - Infection and antibacterial agents.
 - Infections and Diseases
 - Poisons and Venoms
 - Chemical and Physical agents carrying diseases
 - Diseases of Metabolism.
 - Deficiency Diseases
 - Diseases of Endocrine Glands.
 - Diseases of Digestive System.
 - Diseases of Lymphatic System
 - Diseases of Blood
 - Diseases of Cardio-vascular system, Circulatory failure, Ischemic heart disease, Hypertension Pulmonary Heat Diseases, Congenital heart Disease, Peripheral vascular diseases, Embolism and Thrombosis, Collagen diseases.
 - Diseases of the Respiratory System-the trachea, the bronchi, the lungs, the diaphragm, the pleura.
 - Diseases of the Kidney
 - Diseases of the Skin sensory disorders, Pigmentary Anemias, vasomotor, Disorders, Dermatitis, Coccal Infections, Fungus Infections, Cutaneous, Tuberculosis, Virus infection, Parasitic infections, Erythematous conditions, Scleroderma of the Hand Tropical skin diseases.
 - Psychiatry:
 - Definition and introduction to Psychiatry in relation to OT & PT
 - Concept of normal and abnormal
 - Behavior disorders:- Causes & management
 - Psychoneurotic disorders
 - Psychotic disorders
 - Psychosomatic disorder
 - Techniques of Therapy
 - Psycho Therapy:
 - Group Therapy
 - Psychodrama
 - Behaviour modification

➤ 2. Surgery

(Marks 10)

a) **General surgery and cardio-vascular and thoracic surgery.**

- Surgical wounds, haemorrhage, shock, water and Electrolyte Balances, Burns.
- Surgery of head and neck , alimentary systems and genitor-urinary system x
- Neuro Surgery
- Cardio-Vascular and Tghoracic surgery
- Gynaecology and obstetrics: pelvic inflammatory conditions, complications during and following pregnancy prolapsed uterus.
- ENT

b) **Orthopaedics**

- Postural defects anteroposterior and lateral curve of the spine, the feet genu valgum
- genu varum.
- Back pain
- The spine, the intervertebral disease, osteoporosis, Ankylosing spondylitis, spina
- bifida, toriticollis, tuberculosis of the spine and sacro- illac joints
Osteomyehtis,
- Tumours.
- The Hip congenial dislocation , coxa vara, tuberculos bursits
- The knee- injuries to medial ligament, lateral ligament, Semulunar cartilages,
- cruciate ligament, chronic strain , chondromalacia patella, locking rheumatoid Arthritis
- The Foot and ankle painful feet, pesavus, halux, valus gout, painful heel, the ligaments
- of the ankle tuberculosis,
- The foot and ankle painful feet, pesavcus hallux valgus Gout painful heel the
- ligaments of the ankle, Tuberculosis, stress fracture
- The shoulder grirdle pain the shoulder, cervical spondylosis, carpal Tunnel syndrome,
- cervico Brachial Junction Recurrent dislocation of the shoulder, Tuberculosis.
- The elbow tennis elbow, myositis ossificans, ulnar palsy, tuperculosis.
- The wrist and hand tenosynovitis, tuberculosis ganglion, rupture of tendons
- contractures.
- Pyogenic infection
- Tuberculosis
- Chronic aerthritis rheumatoid and osteoaetrghritis
- Diseases of nervous system, ploliomtyelitie, cerebral Palsy
- Common fractures o spine and extremities.
- Trauma Therapy
- Play thereaphy
- Drug Therapy
- E.C. T.
- The role of psychiatrist in dealing with the problems of mental health

- Paediatrics.
- Geriatrics
- Nursing and Bandaging

C)

- Disorders of functions in the context of Pathophysiology & Anatomy
- The Cranial Nerves
- Infections of the Nervous System
- Disorders of the Cerebral Circulation
- Demyelinating diseases of the nervous system
- Extropyramidal syndrome
- Tumours and the nervous system
- Conventional and degenerative disorders
- Disorders of the spinal Cord and Cauda Equina
- Toxic disorders
- Metabolic disorders
- Deficiency disorders
- Disorders of the peripheral nerves
- Disorders of the Muscles
- Disorders of autonomic nervous system
- Psychological aspects of neurology.
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➤ 3. Physical therapy in Medical Conditions

(Marks 20)

a) Physical therapy in neurological conditions

- Examination of Neurological disorder and principles of treatment
- Hemiplegia, paraplegia, cerebral palsy, Tabes dorsalis, cerebellar ataxia, extrapyramidal lesions.
- Disseminated sclerosis, muscular atrophy, amyotrophic lateral sclerosis, progressive
- muscular atrophy, syringomyelia, sub acute combined degeneration of cord
- Peripheral Nerves lesions
- Neuritis and Neuralgia Brachial sciatica and facial palsy
- Infections-Poliomyelitis, Meningitis, Encephalitis, Polyneuritis
- Myopathies
- Paediatrics and Geriatrics

b) Pathological conditions:

- Review of pathological changes and principles of the treatment by physiotherapy of:
- Inflammation acute, chronic and suppurative.
- Oedema Traumatic, Obstructive, Paralytic, Oedema due to poor muscle and laxity of the
- fascia.

✓ II. Arthritis and Allied conditions:

- Osteoarthritis generalized, degenerative and traumatic, spondylosis and disorders

- Rheumatoid arthritis, stills disease, infective arthritis
- Spondylitis, Ankylosing spondylitis
- Non articular Rheumatism Fibrositis, Myalgia, Bursitis, Periathritis etc
- ✓ **III. Diseases of the Respiratory System:**
- Mechanism of Respiration
- Examination of chest of patient and principles of physiotherapy treatment.
- Bronchitis, Asthma, Lung Abscess, Bronchiectasis, Emphysema
- Pleurisy and Empyema, Pneumonia
- Bacterial Disease-Tuberculosis
- Tumors
- ✓ **IV. Common conditions of Skin:**
- Alopechia, Psoriasis, alopecia, Leucoderma, Leprosy etc.
- ✓ **V. Common Cardiac Disorders:**
- Thrombosis, Embolism, Buerger's disease, Arteriosclerosis, Thrombophlebitis, Phlebitis,
- Gangrene, Congestive Cardiac failure, Hypertension, Rheumatic fever etc.
- ✓ **VI. Deficiency Diseases:**
- Rickets, Osteomalacia etc.

➤ 4. Physical Therapy in Surgical Conditions

(Marks 20)

UNIT – I (Orthopaedic and fractures)

- Fractures and dislocations
- Types of displacement
- Classification
- Immediate , late signs and symptoms
- Changes at fracture site and its surrounding tissues
- Reasons for union, non-union , delayed union
- Healing of fractures and factors influencing it
- Common fractures of upper and lower extremity and their complications
- Methods of reduction and fixation
- Corrective surgery
- Arthroplasty, Arthrodesis, Osteotomy, Tendon, Transplant, Soft Tissue release, Grafting.
- Physiotherapy treatment as applicable to above conditions.

UNIT-II (Injuries)

- Soft tissue injuries: synovitis, Capsulitis Volkmann's ischemic contracture etc
- Crush injuries
- Repair of injured tendon and nerves
- Injuries of semilunar cartilage and cruciate ligaments knee: Physical Therapy treatment as applicable to above conditions.
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UNIT - III. (Deformities) :

- Congenital, torticollis, Cartilage and cruciate ligaments knee: Physical Therapy Treatment as applicable to above conditions

- Acquired: Scoliosis, Kyphosis, Lordosis, coxa vara, Genu Valgum, Genu varum and pervurvatum, Planus and other common deformities.
- Other miscellaneous Orthopaedic conditions commonly treated by Physiotherapy.
- Physical therapy treatment related to above conditions.

UNIT - IV. (Amputations) :

- Traumatic, elective, common sites of amputation in Upper & Lower extremities
- Advantages and disadvantages physical Therapy treatment as applicable to care of
- Prosthetic training with emphasis on Lower extremity.
- Complications common to all operations: pre and post operative physiotherapy.
- Wounds, local infections, ulcers Surgical porocedures related to peripheral vascular
- disease.
- Burns –Degree, Grafting of skin.
- General abdominal surgery and obstertrics and Gyneaecology.

✓ **Thoracis Surgery**

- Thoracis incisions pre and post operative treatment and later rehabiltitation of the patent.
- Lobectomy, pneumonectomy, Thoracotomy, Thoracoplasty
- Operations on Chest Walls
- Common complications with emphasis to altectasis Peneumothorax,
- bronchopulmonary fistula, pre and post operative physiotherapy related to Cardiothoracic surgery
- Operations on Precardium and Heart, Chronic Constructive pericarditis, valvular in competence and Stasis, mitral, valvotomy, tetrology of Fallot.

✓ **Ear, Nose and thorat conditions:**

c) Neuro surgery otitis simusites vaso motor, Rhimorrhoea, tonsillitis physiotherapy it above conditions.

- Cranial Surgery:
- Head Injury, intra cranial abscess, Intracranial Tumours.
- Surgery of spinal Cord and Couda Equina, spina Bifida and its complications, infections
- of the spine , Epidural Abscess, Tuberculosis, pre and post operative physiotherapy
- laminctomy, treatment related to above conditions.
- Surgery of peripgheral Nerves , peripheral nerve injuries , pre and post operative
- physictherpy treatment related to above conditions.

➤ **Pre and Post Operative Physiotherapy, related to Plastic Surgery:**

- Tendon transplantation in Leprosy, Polio etc. Pre and Post operative Physic therapy treatment related to above conditions.

➤ 5. Bio-Mechanics and Kinesiology

(Marks 05)

- General Principles
- Force, axis, planes, center of gravity levers
- Classification of force systems
- The linear force system resultant force equilibrium
- Parallel forces in one plane
- Concurrent and general force system
- Friction
- The fundamental principles of motion
- Locomotion.

➤ 6. Disability prevention and Prehabilitation (10 Marks)

- Introduction
- Definition concerned in the phase of disability process
- Definitions concerned with cause of impairment, functional limitation and disability
- Rehabilitation and disability prevention
- Present rehabilitation services
- Reservation & Legislation for rehabilitation services for the disabled
- Community and Rehabilitation
- Basic principles of Administration, Budget, Approach Personnel and Space etc.
- Contribution of Social worker towards rehabilitation
- Vocational evaluation and goals for disabled.
- Rural rehabilitation in-corporated with PHC's
- Principles of Orthotics & Prosthetics:
 - Lower Extremity orthotics/Upper extremity; orthosis
 - Spinal Orthotics
 - Upper extremity prosthetics
 - Lower Extremity Prosthetics
- Principle of Communication: Impairment
 - Speech Production
 - Communication disorders secondary to Brain damage
 - Aphasia and its treatment
 - Dysarthria and its treatment
 - Non-aphasic language disorders
- Code and Conduct
- Ethics and Management:
 - a) Principles in Management of Social Problems:**
 - Social needs of the patient
 - Rehabilitation centre Environment
 - The Social worker as a Member of the Rehabilitation Team
 - Community Resources
 - b) Principles in Management of Vocational Problems:**
 - Vocational Evaluation
 - Vocational goals for the disabled
- Mental Sub normality:
 - Identification and assessment of the mentally subnormal

- Classification of the Mentally subnormal
- Common characteristics of different categories of the mentally subnormal
- Training of the mentally subnormal
- Definition Scope and importance of A. D. L.
- Goals of Self Help Devices
- Teaching A. D. L. in the following areas:-
 - Wheel Chair Activities
 - Bed Activities
 - Self Care Activites
 - Toilet, Eating Dressing, Miscellaneous Hand Activities.
- Principles of design materials used
- A. D.L Form
- A. D. L. Room
- Relationship of ADL to occupational Therapy and Physiotherapy
- National Health Programmes
- Bio-Medical Waste.