

SCHEME OF STUDIES AND EXAMINATION  
DIPLOM IN PHYSIOTHERAPY

I St YEAR

SL NO	SUBJECT	THEORY		PRACTICAL		TOTAL	
		Hours	Marks	Hours	Marks	Hours	Marks
	PART-A						
	1. Communication Skill in English	245	75	65	25	245	100
	2. General foundation course (computer applications)	150	50	95	25	245	100
	PART-B						
	1. Anatomy	160	50	85	25	245	75
	2. Physiology	160	50	85	25	245	75
	3. psychology	160	50	85	25	245	75
	4. physiotherapy	160	50	85	25	245	75
	PART-C						
	1. On the job training (project work)			245	50	245	50
		1035	325	745	200	1715	550

II nd YEAR

SL NO	SUBJECT	THEORY		PRACTICAL		TOTAL	
		Hours	Marks	Hours	Marks	Hours	Marks
	PART-A						
	1. Communication Skill in English	245	75	65	25	245	100
	2. General foundation course (computer applications)	150	50	95	25	245	100
	PART-B						
	1. Medical and Surgical Condition	160	50	85	25	245	75
	2. Physiotherapy-II	160	50	85	25	245	75
	3. Physiotherapy-III	160	50	85	25	245	75
	4. Abnormal Psychology	160	50	85	25	245	75
	PART-C						
	1. On the job training (project work)			245	50	245	50
		1035	325	745	200	1715	550

**SYLLABUS FOR DIPLOMA IN PHYSIOTHERAPY**

**Ist YEAR : Ist Paper**

**ANATOMY : THEORY**

(50 Marks)

1. Human Anatomy

Note: - Emphasis to be placed on topographical skeletal, neuromuscular and joints. Students must take part in dissections to identify various structures,

**General introduction**

1. Human parts and subdivisions
2. Plan of the human body
3. System of the body
4. The unit of structure and functions of cell

**Osteology:-**

1. Terminology: Anatomical position, planes, surfaces, relationship of parts of the body proximal distal etc.
2. Bones: Type of bones, formations, functions, growth and repair, structure of long bone, vertebral column, type of vertebral bones of extremities and bony landmarks.
3. Liver: Anatomy and Anatomical Regions  
Bio-mechanics, Levers and leverage Introduction to kinesiology and mechanics

**4. Arthrology:-**

1. Classifications of joints
2. Construction of joints
1. Motions of joints
2. Articulations- Particular surfaces, types of joints, motions of upper and lower extremities trunk head

**5. Myology :-**

1. Types of muscle tissue and facie.
2. Muscle of upper extremity, lower extremity, trunk, eye, face .....origination nerve supply and actions, chief muscles and facia

**6. Cardio System:-**

1. Blood Lymph, tissue fluid-characteristics, composition .....
2. The heart-main arteries and veins, capillaries
3. Lymph circulation

**7. Nerves System :-**

1. Division and functions of the nerves system
2. Nerve lissue-neuron, nerve, fibres, enderganis etc
3. Spinal cord, brain-their structures, divisions (Gross .....
4. Peripheral and Cranial nerve and their distribution, spiral emphasis on news supply voluntary muscles segm..... Distribution
5. Cerebrospinal fluid
6. Sensory endorgans and sensations
7. Autonomic nervous system-sympathetic, Para sympathetic

**8. Respiratory system:-**

Anatomy of respirator organs-sir passages, kings bronchial tree, etc Relatich with diaphragm and thoracic cage

**9. Digestive System:-**

1. Anatomy of digestive organs Esophagus stomach
2. The digestive glands.

**10. Urinary System:-**

Anatomy of urinary organs, kidneys, urethra, urinary bladder etc, Emphasis on typos of bladder in paraplegics

**11. Endocrine System:-**

Glands, secretion, enzymes, hormones – very simple outline.

**12. Reproductive system:-**

Male and female reproductive organs

**13. Special Sensory Organs and Sensations:-**

Emphasis on skin, ear and eye, Less detail on well and testes

**Practical Work:-**

Identification and description of all anatomical structures and surface working

**Ist Year: Ist Paper**  
**ANATOMY: PRACTICALS**  
**(25 Marks)**

**Practical Work:-**

Identification and description of all anatomical structures and surface working

1. Demonstration of parts of body and bony landmark on the surface.
2. Identification of cells and basic tissues
3. Skeletal System, Identification of bones and joints
4. Demonstration of respiratory system and pleurae
5. Demonstration of Thorax with organs in situ
6. Demonstration of heart and great vessels
7. Demonstration of Identification of various organs within the abdomen
8. Demonstration of Spleen, Pancreas and parts of urinary system

9. Male genital system
10. Female genital system
11. Various reproductive organs
12. Central nervous system, spinal level and peripheral level nervous system
13. Surface anatomy of important organs

Note: - Practical May be by,

1. Demonstration of specimens
2. Drawing diagrams and labeling
3. Demonstration of models and skeletons

**Ist Year: 3<sup>rd</sup> PAPER**  
**Psychology; Theory**  
 (50 marks)

**HUMAN PSYCHOLOGY:-**

**Theory,**

1. What is psychology?
2. Scientific study of behavior
3. Intelligence
4. Aptitudes
5. Motivation
6. Emotional motivation
7. Personality
8. The learning process
9. Remembering and forgetting
10. Thinking
11. Attending and perceiving
12. Physiological psychology
13. Mental mechanism
14. Review

**Ist YEAR: 3<sup>th</sup> PAPER**  
**Psychology: Practicals**  
 (25 Marks)

1. Demonstration and study pathological slides and specimen relating to the subjects taught in theory
2. Smear making in case of leprosy at all levels

**Ist YEAR : 4<sup>th</sup> PATER**  
**Physiotherapy-I:Theory**  
 (50 Marks)

**PHYSIOTHERAPY:-**

1. Introduction of Physiotherapy-Role of Physiotherapy General Considerations of treatment Methods and effects.
2. Principles of body Structure and their requirements for health Nature and causes of disease. Inflammation Infection Immunity, Effects of Inflammation on body structure.
3. Principles of massage on various parts of the body in various physical conditions.
4. Evaluation of the patient and its comparison with the normal date.
5. Exercise therapy and movements in all joint of the body
6. (one outline and application of electric medical apparatus)  
 Thermal components and chemical effects of direct and low frequency currents-properties and physical effects of high frequency current-Distribution of electrical energy sufficient for understanding of earth shock-light and power circuits safety devices Nature and properties of sound waves

**Ist Year : 2<sup>nd</sup> Paper**  
**Physiology : Teory**  
 (50 marks)

### **Human Physiology: Theory**

1. The regulation of the constancy of the intermit environment the cell body water and body water and body fluid the cerebra spinal fluid.
2. The Blood: A general idea about the compositions of blood plasma proteins and formed elements of blood coagulation of blood (basic concept) blood groups.
3. The heart and circulation: Structure and properties of the heart muscle. Cardiac cycle (general idea) Heart sounds, Heart rate-role of nerve supply-physiological variation Blood pressure, Regulation of blood pressure regional circulation in muscle and skin.
4. Respiration: Mechanics of breathing and lung volumes respiratory centre The carriage of oxygen by the blood carbon dioxide transport in the body anoxo cyanosis Dysphnea
5. Neuro-muscular Systems Structure of the striated muscle properties of the voluntary muscle Basic ideas about thermal chemical and electrical changes during muscular contraction Tone phenomenon of fatigue changes in the body during exercises. Structure and functions of nervous tissue neurons synapse classification of nerves myoneural junction Degeneration and regeneration of nerves reaction of degeneration
6. Central nervous system Reflex are spinal cord motor and sensory pathways cerebellum hypothalamus thalamus basal ganglia and cerebral cortex postural movements. Movements of the Basic idea about autonomic nervous system
7. Metabolism of various food stuff viz. Carbohydrates, fats proteins
8. Excretory system: A general idea about the human excretory mechanism including the functions of the kidney. Physiology maturation skin and temperature regulation
9. Endocrine glands: brief outline of the functions of the pancreas pituitary adrenals thyroid and parathyroid glands.
10. Reproduction: Basic idea about the physiology of reproduction including menstruation ovulation pregnancy, Lactation and production of male and female hormones

**Ist Year: 2<sup>nd</sup> Paper**  
**Physiology: Practical**  
(25 Marks)

1. Phenomenon of fatigue in human beings
2. Determination of Mechanical efficiency during different grades of exercise
3. Study of microscope
4. Making of blood film and recognition of cell
5. Differential leucocytes count
6. Hemoglobin estimation, Color index, Bleeding and dotting time blood groping and demonstration of ESR
7. Artificial respiration
8. Blood pressure, pulse rate and effect of exercise
  
4. Spinal cord
5. Peripheral nerve
  - (ii) Cerebral circulation and its disorders (including hemiplegia).coma
  - (iii) Infections and inflammations  
Meningitis:  
Encephalitis and encephalomyelitis  
Intracranial abscess  
Poliomyelitis
  - (iv) Extra paramedic syndromes
  - (v) Syphilis and its neurological complications
  - (vi) Demyelization and degenerative disorders
  - (vii) Deficiency disorders, Intoxication's and metabolic disorders
  - (viii) Disorders of peripheral nerves  
Disorders of spinal cord  
Including paraplegia  
Disorders of muscle
  - (ix) Paraxial and convulsive disorders  
Physiotherapy in neurological diseases  
Wasting of small muscles of hand dropped foot
1. Surgery (Basic Knowledge about etiology and management of the following diseases with particular reference to physiotherapy for the treatment of these diseases
1. Acute infections

- Inflammatory fever - Bacteria
  - Septicemia
  - Pyloria
  - Toxemia
  - Specific types - Cellulites
  - Lymphangitis
  - Abscess with special
  - Reference to hand
  - Infection
  - Carbuncle
2. Specific type's cont
    - Tetanus
    - Gas gangrene
    - Hospital infection-cross infection with modes of spread and prevention
  3. General survey of chronic inflammations
    - Syphilis (reference to other venereal diseases)
    - Leprosy
  7. Exercise therapy and Massage: Introduction to and use of apparatus. Starting Position joint movement and range measurement of movement-active and passive movements, normal breathing-suspension exercises-pulleys sliding board parallel bar uses-crutch walking-and use-raisted climbing-coordination exercises.
    - Terminology and classification of soft tissue manipulate physiological effect of each manipulation-
    - Demonstration practice of all manipulations-special techniques-tissue massage-deep transverses friction-muscles in action and muscle testing in movement and muscle power

**Ist Year: 4<sup>th</sup> PAPER**  
**Physiotherapy-I: practical**  
 (25 Marks)

1. Orientation
2. Visits to Institutions
3. Concept of Rehabilitation
4. Use of B.P. Aspiration/Stethoscope
5. Noting of Medical case History/Social history
6. Basic understanding of patient's problem

**SECOND YEAR**  
**2<sup>nd</sup> year: Ist PAPER**  
 Medical & Surgical Condition: Theory

Medical and Surgical Condition:

1. Basic general pathology
2. Medical and surgical Conditions:
  - Medicines: (Basic knowledge about etiology and management of following disease with reference to physiotherapy for the treatment of these diseases)
  - 1. Infectious diseases
  - 2. Nutritional disorders
  - 3. Respiratory diseases
  - 4. Cardiovascular diseases
  - 5. Endocrinal disorders
  - 6. Urinogenital disorders
  - 7. Metabolic disorders and liver affections
  - 8. General affection of joints(Polio arthritis)
3. **Neurology:**
  - (i) Introduction-approach to neurological case
    1. Pyramidal tract
    2. Extra pyramidal tract
    3. Cerebellum
    - .....
    4. Surgical tuberculosis
    5. General survey of trauma pathology and clinical features wound repair-primary secondary and tertiary

6. Clear wounds, contaminated wound and infected wounds. Principles of treatment-survey of factors, affecting wound healing. Ulcers and gangrene
7. Post operative complications after abdominal surgery-specifically chest, wound infection edema
8. Breast-survey
9. Burns as a specific type of survey trauma and skin grafting as an example of plastic procedures Types of skin grafting-healing of grafting
10. Outline of surgical disorders of skull and brain, head injury
11. General survey of surgical disorders of spine and spinal cords problem of paraplegia
12. Malignancy-spread and its behavior.
13. Various incisions bad Drainage tubes, Catheters and trice tubes.
14. Ward demonstrations, for an hour a day for a period of one week
15. Anesthesia  
P.T.Demonstrations  
Medical condition

## 2. Orthopedics:

Introduction, Orthopedic surgery, Definition and scope, Brief history

Sprains and dislocations-causes, Types, Principles treatment

Fractures-types, Displacement, General symptoms, Healing principles of treatment, Union, Delayed non-union complications

Injuries to the hand-types, Principles of treatment, Injuries to the phalange, sprains, Dislocation of MP and IPe joints

Fractures of the Phalanges, metacarpals

Bennet's fracture, mallet finger, stenosing, tenosynovitis, Trigger finger, Decurven's disease

Wirod-dislocations, sprains, injuries to carpal scaphoid, Ganglis-collis fracture, displaced epiphysis etc.

Fractures of forearm bones greenstick fractures, Fraction injury, Adult forearm fractures, Principles of treatment, Men toggia fracture, Dislocation

Injuries to the elbow, Traumatic synovitis, Sprain, Dilocates, Myosites, Ossifecans, and Tennis elbow. Principles of treatment of elbow, Fractures involving the elbow joint

Supracondylar fracture-displacement of lateral humeral physis medical condyle injury & Shaped fractures.

Fractures of the head of the radius, Fractures of the electanon

Boby car fracture dislocation and reference to Volkman's contracture

Fractures of the shaft of humerus, Principles of treatment injuries to main nerves medical lunar and radial

Injuries to the shoulder fractures of the upper and of the humerus shoulder cufflesions, Dislocations fracture dislocation, recurrent dislocations, perarthritis

Fractures of the clavicle acromioclavi ular and stemoclavionlar dislocations Fractures of the scapula

Vertebral injuries, Muscular processes, kummels disease, Neural arch vertebral body

Injuries to the cervical spine, atlanto-axial injuries, Hypereamia dislocation, brachian plexus injuries

Injuries to the pelvis, Injuries to the leg, Epiphysical injuries, Dislocations of the hip joint, Sciatic nerve injury

Fractures of the neck of femur, Coxa Vara, Fractures of the femur, Supracondylar fracture

Injuries to the knee joint contusion haemarthrosis Quabriceps mechanism, Ligamentous injuries, cartilage tears, fracture of the knee joint Dislocations

Epiphysical injuries to the knee, Fractures of the upper tibia and fibula eateral popliteal nerve injury

Principles of treatment of fractures of the tibia and fibula

Injuries to the ankle sprain subluxation, dislocation, dislocation of tendears

Congenital elevation of scapula, Brevicollis

Cleidoeranian dysostosis, Superior radio ulnar

Synestesis, Madilung's deformity, Stcmomastoid tumour

Cor..... wry neck, Cervical spondylosis

Kyp..... , lordosis, Scoliosis-primary and secondary idiopathy to spina bifida, Meningocoele

My.....

Coxa varma (congenital opiphysical) C.D.H.

C.D.H. deretation varus osteotomy, Salter Operation, Denis Brown splint, Lornze position or plaster immok of C.D.H.

Genu-Valgum, gonuvarum, genu-recurvatum

Qua..... Contracture, Talipes

Flat..... and foot wear

Hallu..... rigidus, metatarsalgia etc

Nerve injuries

Paraplegia, hemiplegia, quadriplegia

Infections of the bones acute and chronic

Diseases of the joints, Rheumatoid arthritis, osteo-arthritis, backache, disc lesion, skeletal tuberculosis  
 Principles of treatment T.B. of shoulder, elbow, wrist  
 T.B. of hip knee, ankle and foot  
 Metabolic diseases, rickets, osteomalacia, osteoporosis, scurvy etc  
 Tumors of bones and soft tissues  
 Poliomyelitis-recovering and late stages, Rehabilitation in the recovery phase, charting  
 Tendon lengthening, tenderness, tendon transplants, stabilization problems shortlimp and equalization,  
 Amputations-types sites, ideal stump, complications  
 General principles, upper extremity and lower extremity

**2<sup>nd</sup> Year-Ist PAPER**  
**Medical & Surgical : Condition Practical**  
 (25 marks)

1. Case history of each patient
2. Understanding the disease and its complications
3. Planning the treatment programme
4. Therapeutic rapport with the patient
5. Observing the treatment

**2<sup>nd</sup> Year Paper-II**  
**Physiotherapy-II Theory**  
 (Marks 50)

**Physiotherapy-II**

Introduction to clinical application of therapeutic techniques  
 The physiotherapy as sets of medical and surgical conditions  
 (Outlines above) will be covered

1. Electrotherapy (Theoretical introduction and essential knowledge should be given) Electric shock passage of current through out the body galvanic current theory of electrolysis, surfaces of current effect on the body medical use.

Electrical stimulation galvanic faradic test intensity curve, High frequency currents, short wave diathermy micro wave diathermy a consideration of apparatus effects on the body practical application use of infra-red and ultra violet, including a description of their sources effects on the body and practical application, paraffin wax bath ultra sonic-theoretical aspects affects on the body and practical application.

2. Hydrotherapy: Introduction to Hydrotherapy-theory and practical both
3. Therapeutic uses of exercises: muscle testing and muscle re-educations limitation of joint movements and methods of copy actions recording joint range gait analysis and abdominal grip walking reduction, Volume length measurement relaxation progressive resistance exercises
4. Physiotherapy and Rehabilitation:

Conclusion of instruction in the physiotherapy for medical and surgical condition emphasis on the use of selected passes and active techniques to form a balanced and progressive treatment programme hope programme activities of daily like cooperation with allied rehabilitation workers the philosophy of rehabilitation

**2<sup>nd</sup> Year paper-II**  
**Physiotherapy-II Practicals**  
 (Marks -25)

1. Massage Treatment
  2. Gym knowing about all the equipment
    1. Various Rehabilitation equipment and its knowledge
    2. Assisting the qualified Physiotherapist
- Prosthesis and prosthetic service  
 Orthopedic splints  
 Orthopedic Appliances

## **6. Theraeia (Surgery)**

1. Proliminary anatomy relating to cardio-thoracic surgery
2. Thoracic surgery, thoracotomy lobectomy, phenumonectomy, thoracoplsty mitral va..... Etc
3. Resuscitation and cardiac arrest
4. Cardio-thoracic diseases, especially those common in India.
5. Outline of cardio thoracic operations Clinical demonstration
6. Obstretics and gynaecology:
  1. Anatomy and physiology of the female reproductive organs
  2. Menstruation and pregnancy
  3. Various stages of labor and clinical management
  4. Infections of the female general tract
  5. Prolapsed uterus and rectum

## **7. Pediatrics:**

1. Introduction to handling of children
2. Spasticity in children
3. Normal neuro-muscular development
4. Polio
5. Pediatric aspect of chest conditions
6. Clinical demonstration

## **8. E.N.T.**

1. introduction to diseases of W.N.T.
2. Mastoid surgery
3. Larynx and associated functional paralysis with tracheotomy and core tracheotomy

## **9. Ophthalmology:**

1. Common inflammations and other affections of the eye
2. Ptosis defects of the extra ocular muscles
3. Hysteric blindness
4. Orbicularis oculi paralyses

## **10. Dermatology:**

1. Characteristics of a normal skin
2. Various abnormal changes
3. Conditions dermatitis, Eczema, allergies, acne, psorises, leucederma, alepaecea, Venereal disorders and tuberculosis of the skin
4. Leprosy
6. Assisting to qualified Physiotherapist
7. Clinical physiotherapy

**2<sup>nd</sup> Year Paper-IV**  
**Abnormal Psychology-Theory**  
(Marks-50)

### **Abnormal psychology:**

1. Social Behavior
2. Individual Differences
3. Frustration and conflicts
4. Causes of Abnormal behavior
5. Personality disorders
6. Psychoneurotic disorders and Psychophysiology disorders
7. Functional psychosis
8. Child adolescent psychiatry
9. Geriatric psychiatry
10. Alcoholism and Drug addiction
11. Mental Retardation
12. Acute and Chronic Brain disorders
13. Modem methods of diagnosis understanding, treatment and prevention
14. Menopause-syndrome

**2<sup>nd</sup> year paper-IV**  
**Abnormal Psychology-Practicals**  
(Marks – 25)

### **Abnormal Psychology:**

1. Intelligence Evaluation a historical perspective concept of intelligence I.Q. development of intelligence test, Binet scales, Binet simon, stanford, Binet scales
2. Various Intelligence test: Wechsler Intelligence scales, kamaths & Bhatia's tests, Nancy Bailey developmental Scale, Vineland social Maturity scale
3. Personality evaluation (a) Projective methods, Rorschach, T.A.T.C.A.T.Human Figure Test Drawing, Painting & play (b) Personality inventories MMPI
4. Neuropsychological evaluation: Wechsler memory scale Bender Castalt

**Clinical Physiotherapy:**

Students will be required to attend full time clinical physiotherapy. No candidate should be al..... to appear in the final examination without attending clinical practice at prescribed .....

**2<sup>nd</sup> Year Paper-III**  
**Physiotherapy-III-Theory**  
(Marks – 50)

- 1 Introduction Difference between low frequency and high frequency current and heat production in tissues
2. Principles of production of High frequency currents Circuit diagram and principles of working, Common methods of current regulation, Interference with Ratio communication and principles of stabilizing frequency and eliminations of Harmonics, Physiological and therapeutic effects.
- 3 Application of short wave Diathermy, condenser field and inductotheny methods. Heating of the tissues in series and parallel. Uniety of various in treating various types of tissues in tissues in Body-coplannar, contraplannar various types of coil methods, Size spacing of electrodes, position of electrodes and various types of coils. Deep heating and superficial heating
- 4 Technique of application of S.W.Diathermy to various parts of body in various conditions by suitable methods to achieve maximum effect Doses dangers and precautions
- 5 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
6. Ultra-sonic Therapy:
  1. Definition of sound and ultra sound and its physical properties velocity, density and characteristic impendence, Reflection, Transmission, absorption, Cavitations and half valve thickness.
  2. Preduction of Utrta sound, Physiological and therapeutic effects of ultra sound-Micromessage and thermal effect, Biological effects, Chemical and electrical effects.
  3. Principles of Treatment-Technique of application, and contraindications Dangers and precautions.

Infra-red and Ultraviolet Radiation

Introduction and Physical properties

Production

Physiological and Therapeutic effects

Techniques of application, doses dangers and precaution

Special techniques of Ultraviolet radiation i.e. Indolent wounds, sporasis etc

**2<sup>nd</sup> Year Paper-III**  
**Physiotherapy-III Practicals**  
(Marks – 25)

1. Description of exercises therapy equipments and its use
2. Details of electro –therapy equipments its knowledge it operation.
3. Treatment of dummies
4. Assessments like muscle testing, joint range of portion sensations etc.
- 5 understanding the treatment principles.

**9. INPUTS FOR THE COURSE**  
**(PHYSIOTHERAPY AIDS REQUIRED)**

1. Wheelchair
2. suspension sting table
3. evaluating table

4. shoulder wheel
5. Quadriceps stool.
6. bicycle
7. supination –pronation Board
8. outrigger for finger
9. Ankle exerciser
10. Wheel exerciser
11. Quadriceps table
12. cervical traction
13. Lumbar traction
14. wall bar
15. Parallel bar
16. Invalid walker
17. set up exercise
18. Aluminum walker
19. Sitting table
20. Rope and Pulleys
21. Electrical Stimulator .Muscle Stimulator
22. Walker
23. Crutches
24. Wax bath
25. Tubes( for hydrotherapy)
26. Infrared
27. Ultrasound ( used for pain relief)
28. Cervical Collar
29. Splints
30. Crepe bandage( different sizes)
31. Electro therapy equipment
32. electrician nerve Stimulating

#### ON THE JOB TRAINING

##### OJT SITE:

General Hospital  
Private Nursing homes  
Special Hospitals  
Special rehabilitation centers  
Leading clinics  
The clinic attach to the college  
NGO dealing with the handicapped  
National and state level institutes for the rehabilitation of the handicapped.