



MEER SIR ACADEMY

MPT Entrance Examination Syllabus

Centre for Physiotherapy and Rehabilitation Sciences

Jamia Millia Islamia New Delhi

Programme	Master of Physiotherapy
Entrance session	2026 27
Syllabus basis	Bachelor of Physiotherapy curriculum followed by Indian universities
Coverage	Fourteen subject areas from basic sciences to clinical physiotherapy and research

The MPT entrance examination is based on the curriculum of BPT followed by various universities in India.

Syllabus Overview

The entrance syllabus covers foundational medical sciences, core physiotherapy subjects, clinical specialties, community rehabilitation, research, ethics and allied disciplines.

Unit	Subject Area
1	Human Anatomy
2	Human Physiology and Biochemistry
3	Microbiology Pathology and Pharmacology
4	Biomechanics Kinesiology Prosthetics and Orthotics
5	Exercise Therapy
6	Electrotherapy



7	Physiotherapy in Orthopedics and Rheumatology
8	Physiotherapy in General Medicine and Surgical Conditions
9	Physiotherapy in Sports Injuries
10	Physiotherapy in Cardiopulmonary Disorders
11	Physiotherapy in Neurological Disorders
12	Physiotherapy in Community Based Rehabilitation
13	Research Methodology Biostatistics and Ethics
14	Psychology Sociology Environmental Sciences and Business Administration

Unit 1 Human Anatomy

- Definition of anatomy, its sub-divisions, regions, cavities and systems of the body. Anatomical positions and anatomical terms. Cell & Tissue (Histology): Anatomical nomenclature, structure of cell, reproduction of cell, tissue, its types and functions.
- Osteology: Development and growth of bone, blood and nerve supply, bones: type and structure, surface anatomy. Osteology of skull, shoulder girdle upper limb, pelvis, lower limb and spine.
- Arthrology: Definition and classification, general features of all the type of joints. General description about movements at all the joints.
- Myology: Muscle and its classification, tendon, ligament, aponeurosis & fascia. Features, description of all the muscle types and various anatomical spaces
- Nervous system, cardiovascular system, lymphatic systems, respiratory system, digestive system endocrine system, urogenital system and human embryology.

Unit 2 Human Physiology and Biochemistry

- Functional system of the cell: Cell and its functions, functional morphology, extracellular fluid and intracellular fluid
- Membrane, nerve and muscle physiology, mechanism of contraction of skeletal muscle and smooth muscles.
- Physiology of nervous system, cardiovascular system, lymphatic systems, respiratory system, digestive system, endocrine system, urogenital system, reproduction, aviation, space and deep-sea diving physiology:
- Biochemical characteristics of living matter, vitamin and mineral metabolism
- Enzymes, carbohydrates, lipids, amino acids, proteins, hormones: Function and metabolisms.
- Metabolic homeostasis: Metabolic role of organs, homeostasis of carbohydrates, lipids and nitrogen, regulation of appetite, energy expenditure and body-weight, biochemical mediators of obesity, hypothalamic integration of hormonal signals
- Nucleic acids overview of the structure of RNA and DNA including nucleotides,



- Techniques in biochemistry: Principle and applications of gel, ion-exchange, thin layer and gas chromatography, HPLC, Electrophoresis, Homogenization, Differential Centrifugation PCR, Ligation and transformation, Western blotting, Enzyme Kinetics, ELISA
- Genetics: Introduction to genetics, principles and its application

Unit 3 Microbiology Pathology and Pharmacology

Microbiology

- Basic concepts and tools in microbiology: Spontaneous generation biogenesis, germ theory of diseases, Koch's postulates, themicroscopy (Light and electron) preparation and staining of specimens, bacterial morphology, taxonomy, nutrition, growth and control, bacterial size, shape, arrangement. Structures external to cell wall, structure and chemical composition of cell wall, bacteriological media, diseases caused by aerobic bacteria, anaerobic bacteria, viruses.
- Immunology: complement systems, immune response and hypersensitivity.

Pathology

- Classification of lesions, inflammation, cell injury, death and adaptation, tissue and cell repair. Haemodynamic disorders, blood and lymph disorders and neoplasm.
- Systemic pathology affecting the cardiovascular system, respiratory system, nervous system, endocrine system, alimentary system, urinary system.

Pharmacology

- General pharmacology: Pharmacokinetics, routes of administration, dosage forms and new drug delivery systems, mechanism of drug action, bioassay, drug toxicity, therapeutic index, factors modifying drug response, pharmacogenetics and teratogenicity, drug interaction, clinical examination of drugs, rational drug use, essential drugs and adverse drug reactions.
- Drugs acting on autonomic nervous system, central nervous system, respiratory system, cardiovascular system, renal system, gastro-intestinal tract. Non-steroidal anti-inflammatory drugs, antibiotics and chemotherapeutic agents and other drugs used in clinical management of various human diseases.

Unit 4 Biomechanics Kinesiology Prosthetics and Orthotics

Biomechanics, Kinesiology

- General biomechanics: kinematics, kinetics, planes, axis of human movements
- Muscle, tendon, bone, ligaments and other body component biomechanics
- Biomechanics of different joints of human body: Spine, upper limb, lower limb, thorax.
- Biomechanics of gait and posture

Prosthetics and orthotics

- Prescription of orthotics: upper limb orthosis, lower limb orthosis and spinal orthotics
- Prescription of prosthetics: upper limb orthosis, lower limb orthosis and spinal prosthetics



- Footwear modification, adaptive devices in rehabilitation and walking aids.

Unit 5 Exercise Therapy

- Mechanical basis of movement, skeletal basis of movement, musculoskeletal basis of movement
- and neuro physiological basis of movement
- Motor learning and motor control
- Fundamental and derived positions, classification of exercise: active movement, passive movements.
- Flexibility, relaxation, peripheral joint mobilization and soft tissue mobilization. Biomechanical modalities
- Goniometry, Manual strength and length testing methods: manual and mechanical, Muscle re-education, PNF, mat activities, Exercise Testing and Prescription, Therapeutic Gymnasium Strength and endurance: assessment and training
- Balance and coordination: assessment and training
- Gait and posture: Pathology and rehabilitation
- ADL, functional training.
- Traction
- Suspension Therapy
- Hydrotherapy

Unit 6 Electrotherapy

- Electrical activities in muscles and nerves, application of energy to the human body,
- Properties of electricity: AC and DC
- Electric components: Transformers, rheostat, semiconductors, conductors, capacitor etc.
- Electromagnetism, electromagnetic radiations
- Therapeutic physical modalities: Guidelines of application of electrotherapy, cryotherapy, LASER, infrared therapy, ultraviolet therapy, Faradic, Galvanic current, TENS, IFT, SWD, MWD, long wave diathermy, ultrasound therapy, combination therapy, shockwave therapy.

Unit 7 Physiotherapy in Orthopedics and Rheumatology

- Medical and surgical management in orthopaedic and rheumatological conditions.
- Physiotherapy orthopaedic assessment
- Role of Diagnostic tools
- General and specific physiotherapy approach towards trauma
- Classification of fractures and dislocations.
- Principles of treatment and complication management of fractures, dislocations and soft tissue injuries
- General Pre and postoperative assessment and management of common surgeries like: Arthrodesis and Arthroplasty, Osteotomy, Spinal stabilizations, Limb lengthening and reattachments, Tendon surgeries, Muscle surgeries, Nerve surgeries, amputation



- Developmental disorders of bone; Signs, symptoms, assessment and physiotherapeutic management of the following congenital deformities like: CTEV, CDH, Foot arch deformities, Limb deficiency, Arthrogryposis multiplex congenita, Spinal bifida, Sprengel's shoulder, Torticollis, Osteogenesis imperfecta, Spinal deformities, Coxa vara
- Signs, symptoms, common sites, assessment and physiotherapeutic management of Bone and joint infections like: Osteomyelitis, Tuberculosis, Leprosy, Septic arthritis.
- Signs, symptoms, common sites, assessment and physiotherapeutic management of the rheumatological conditions like: Osteoarthritis, Rheumatoid arthritis, Fibromyalgia, Gout, Psoriatic arthritis, Pseudo gout, Miscellaneous arthritis conditions
- Review of the condition, assessment, management and treatment goals and plans for the following conditions:
- Shoulder: Rotator cuff injury, Periarthritis, Adhesive capsulitis, Bursitis etc.
- Elbow; Tennis and Golfers elbow, Recurrent ulnar nerve slipping, Pulled elbow etc.
- Wrist and hand: Ganglion, Dequervian's syndrome, Trigger thumb and finger, CTS, Dupuytren's contracture, Flexor and extensor tendon injuries, RA hand, Burned hand, Mallet finger etc
- Hip: Slipped epiphysis, AVN, Hip OA etc
- Knee: Deformities, Osgood schlatter's disease, Loose bodies, Anterior knee pain, Chondromalacia patella, Bursitis, OA Knee etc
- Foot and Ankle: Anterior foot pain, Heel pain, Tarsal tunnel syndrome, Trophic ulcers
- Spine: Thoracic outlet syndrome, Torticollis, PIVD, Spondylolisthesis, Strain, Lumbar canal stenosis, Spondylitis, Ankylosing Spondylitis etc

Unit 8 Physiotherapy in General Medicine and Surgical Conditions

- Medical and surgical management in conditions other than in orthopaedics, neurology, and cardiopulmonary disorders.
- Etiology, symptoms and signs along with clinical and Physiotherapy management of the following condition
- Transplantation: Liver, Kidney etc
- Nutritional and metabolic disorders; Balanced diet, Protein caloric malnutrition, Diabetic mellitus, Obesity, Osteoporosis, Other nutritional disorders
- Physiotherapeutic techniques: Postural drainage, Manual techniques (percussion, vibration, shaking),
- Breathing exercises, forced expiratory techniques: coughing, huffing, supported coughing
- Etiology, symptoms and signs along with clinical and Physiotherapy management of the following conditions
- Dermatology: Assessment of skin condition, Psoriasis, Leprosy, Syphilis, Acne, Leukoderma, Alopecia etc
- Oncology; Classification and characteristics of common tumors- their complications and management, Mastectomy, AIDS etc
- Edema: Definition, types, factors controlling tissue fluid circulation, cause of edema, physiotherapy assessment and management of edema etc
- Inflammation: Signs of inflammation, stages and their physiotherapy management
- Gangrene: Types and their physiotherapy management
- Etiology, symptoms and signs along with clinical and Physiotherapy management of the following conditions



- Paediatrics: Brief overview of General growth pattern, Paediatric assessment and its normal parameters, Birth trauma, learning disorders (brief), Obesity, Diabetes, Bleeding disorders, Preterm babies with high -risk infants, Congenital and acquired structural deformities
- Pre and post physiotherapy management and complications and their management of the following surgeries.
- General surgery: General scheme of case taking, Incision and its types, Anaesthesia and its complications (brief overview), Hernia—its types and managements, Abdominal surgeries, Nephrectomy, Colostomy, Cystectomy, Colectomy, Prostatectomy
- Obstetrics and Gynaecology: Clinical anatomy of Pelvic floor, Prenatal and postnatal programs, Relaxation, Postural training, Pelvic floor stretching and strengthening exercises, Physiotherapy during labor, Postnatal exercise programme after normal labour/labour with invasive procedures, Uro-genital dysfunction, P.T. Management- Menopause Deconditioning, PT management- common gynecological surgeries, Role of PT clinical reasoning for application of electrotherapeutic modalities in obstetric and gynaecological conditions.
- Review of pathological changes and principles of pre and post-operative management by physiotherapy of the following conditions.
- Wounds: Normal wound healing, Abnormal wound healing and chronic wound, Examination, Evaluation, Diagnosis, Prognosis and Physiotherapy Intervention, Pressure ulcers
- Burns and Plastic Surgery: Skin anatomy and burn wound pathology, Classification of burn injury, Complications of burn injury, Burn wound healing, Medical and surgical management of burn, Physiotherapy management, Skin graft and flaps

Unit 9 Physiotherapy in Sports Injuries

- Medical and surgical management in sports injuries.
- Sports Medicine Team Members
- Nutritional Considerations- Significance of preventing meal and eating disorders
- Protective Sports Equipment- Relevance of protective equipments in sports
- Environmental Factors and Sports Performance- Climatic variations and sports performance
- Body Composition and Sports Performance: Concept and significance of various body composition techniques in sports
- Special Considerations- Female Athlete, Strength and endurance considerations for adolescent non athletic population
- Preventive Aspects of Sports Injury: Different causes for sports injury, principles of training, methods and exercise prescription
- Exercise consideration Special Population: Hypertension, Diabetes Mellitus and other lifestyle disorder Basic Concept of periodization in sports
- Preparticipation Athlete Evaluation: Therapeutic and preventive interventions- Taping, Sports Massage, Bandaging and wrapping techniques, Cryotherapy, etc.
- Emergency Care and On-field Injury Assessment and management
- Psychological Aspects of Sports Injury
- Sports Traumatology and Management: Spine Injury Patterns, Assessment and Management of common spinal injuries in sports, Shoulder Joint Complex- Rotator Cuff Injuries in throwing athletes, Fractures of GI Joint Complex- Conservative, Surgical Management and Return to sports criteria for different sports, Design of prevention models, etc.,



Elbow Joint, Wrist Joint and Hand Complex- Overuse Injuries, Biomechanical Errors, Conservative, Surgical Management and Return to sports criteria

- Hip, Pelvis and thigh, Knee Joint Complex- Ligamentous and meniscal injury patterns in different sports, Conservative, Surgical Management and Return to sports criteria for different sports injuries
- Foot and Ankle joint complex: Conservative, Surgical Management and Return to sports criteria for different sports
- Exercise and sports physiology: Cardiorespiratory function and performance, Cardiovascular control during exercise, Respiratory regulation during exercise, Cardiorespiratory adaptation to training
- Physical fitness: Concept of health and physical fitness, Assessment of coordination, speed, accuracy of performance, Ergogenic aids and performance

Unit 10 Physiotherapy in Cardiopulmonary Disorders

- Medical and surgical management in cardiopulmonary conditions
- Physiotherapy Techniques: Breathing exercises Inspiratory muscle training PNF respiration, Humidification and aerosol therapy
- Ventilators
- Airway clearance devices: Flutter, TheraPEP, Acapella, High frequency chest wall oscillation (HFCWO), Intrapulmonary percussive ventilation (IPV), Insufflation/exsufflation-assisted cough, IPPB
- Airway clearance techniques: Postural Drainage and Manual Techniques, ACBT, AD, Manual and Ventilation, Hyperinflation, Suctioning
- Selection of airway clearance technique
- Positioning and Mobilization

Cardiovascular Physiotherapy

- Assessment of cardiovascular system
- Investigative procedures
- Cardiac rehabilitation and secondary prevention
- Etiopathogenesis, clinical and physiotherapy management of the following conditions: Congenital heart diseases: ASD, VD, PDA, Fallot's tetralogy, Ischemic heart diseases, Cardiac failure, Rheumatic fever, Hypertension etc
- Pulmonary Physiotherapy: Assessment of pulmonary system, Pulmonary rehabilitation, Investigative procedures
- Etiopathogenesis, clinical and physiotherapy management of the following conditions: Obstructive pulmonary diseases, Infections, Neoplasm, Interstitial pulmonary diseases, Diseases of nasopharynx, larynx and trachea, Diseases of pleura, diaphragm and chest wall, Chest deformity etc
- Physiotherapy in Cardiovascular and Pulmonary Surgeries: Introduction, Types of incision, pre and postoperative assessment, management and complications of cardiothoracic surgery
- Cardiac surgery: Indication, contraindications, incision, pre and postoperative management and complications of the following: Valvotomy and valve replacement, Open heart surgery/cardiac bypass surgery, Surgery on pericardium, Operations of congenital disorders, Heart transplantation, Pacemaker implantation, Coronary angioplasty, Balloon angioplasty and vascular surgery, Surgery of arteries and veins.
- Thoracic surgery: Pre and postoperative management and complications of Rib fracture, Flail chest, Stove-in chest, Surgery of the pleura, Pneumothorax, Haemothorax, Lung contusion and laceration, Injuries to vessels and bronchus,



Lung transplantation, Intercostal catheters (chest tubes), Lobectomy, Pneumonectomy, segmentectomy, Thoracoplasty, Lung Volume Reduction surgery, VATS

- Physiotherapy in intensive care unit: Assessment of critically ill patient in the ICU, Monitoring and interpreting medical investigations, Mechanical ventilation: implications for physiotherapy, Respiratory failure. Physiotherapeutic techniques used in the ICU, Cardiopulmonary exercise testing and prescription

Unit 11 Physiotherapy in Neurological Disorders

- Medical and surgical management in neurological and psychiatric disorders
- Neurological Assessment and Neurophysiotherapy techniques: Assessment of CNS in adults and Children, Assessment of PNS and ANS
- Techniques in Neurological Physiotherapy: NDT, Roods, PNF, Motor relearning programme, Biofeedback, FES, Brunstrom approach
- Aetiopathogenesis, Clinical manifestations and physiotherapy management of neuromuscular diseases: Motor-neuron diseases, Disorders of peripheral nerves, Disorders of cranial nerves, Myopathies etc
- Infections Disorders of the Nervous system: Encephalitis, Meningitis, Poliomyelitis etc
- Demyelinating disorders of the CNS: Multiple Sclerosis etc
- Neoplasm of Nervous system: Brain Tumor and Spinal Tumors etc
- Congenital and Developmental anomalies of nervous system: Neural tube defects and hydrocephalus, Congenital Myopathies etc
- Metabolic, toxic and disorders of nervous system: Nutritional deficiencies, Toxin and drug induced nervous system damage
- Cerebellar Disorders
- Movement disorders
- Cerebrovascular accident
- Spinal cord injury
- Traumatic brain injury
- Cerebral Palsy
- Vestibular disorders
- Disorders of autonomic nervous system
- ICU management of neurologically impaired
- Pre and post-operative physiotherapy management of: Nerve repair, Tumour Surgery of the brain and spinal cord
- Nutritional deficiency affecting nervous system, toxins and Drug induced Nervous system Pathology, physiotherapy management of psychiatric patients.

Unit 12 Physiotherapy in Community Based Rehabilitation

- Community Medicine: Introduction to community medicine, Concepts of Health and Illness
- Health care system, Screening for a health condition



- Preventive medicine and Public Health practice: Communicable diseases, Maternal and child health (MCH), Geriatrics, disaster Management Concept and philosophy of public health Public health law and concept of social security, international health and role of international agencies.
- Health Education: Role of health education in rehabilitation services
- Community Rehabilitation: Disability and Rehabilitation, Multidisciplinary approach, Rehabilitation approaches, Socio-legal aspects, Rehabilitation, National and international agencies in rehabilitation, Barriers in rehabilitation, Community-Based Rehabilitation, Vocational Rehabilitation
- Rehabilitation in special cases: Visual, Speech, Communication and Hearing impairment, physically challenged. Mentally challenged, Psychiatry and De-addiction Syndromes, Behaviour and Learning problems. Role of Telerehabilitation and Assistive technology
- Occupational Health and Ergonomics: Occupational hazards. Occupational Stress and Work management,
- Returning the worker to productivity, Occupational Ergonomics

MEER SIR ACADEMY



Unit 13 Research Methodology Biostatistics and Ethics

- Importance of research in physiotherapy, Research ethics, Clinical issues in research, elements of informed consent, Structure of research proposal, Research methodology, Research problems, questions and hypotheses, Review of literature, Measurement, Principles of measurement reliability and validity, Experimental sampling and design, Descriptive research
- Collection of Data, Sampling methods, Variable: Discrete and continuous.
- Presentation of Data: Classification and tabulation.
- Diagrams and graphs: Bar, pie, Histogram, line graph
- Concept of statistical population and sample characteristics of frequency distribution.
- Measures of Central Tendency: Mean, Median, Mode and Weighted Arithmetic Mean
- Measures of Dispersion: Range, Quartile deviation, Mean deviation and Standard deviation
- Correlation and Regression.
- Test of significance: T-test, chi-square test, ANOVA
- Ethical principles applied to moral issues in healthcare
- Rules of professional conduct and scope of practice
- Relationship with the patient
- Relationship with the profession
- Confidentiality and responsibility
- Professional and government licensing, accreditation and education standards.
- Laws and legal concepts: Legal aspects related to rehabilitation, Medicolegal cases, Workman compensation, insurance facilities, other financial benefits available for the disability, Law protection from malpractice claim, Consumer protection act. Liability and documentation, Constitution and functions of the Indian Association of Physiotherapists, Functioning of the World Confederation of Physical Therapy (W.C.P.T. and its various branches), special interest groups, Role of WHO and WCPT, safety precautions in Physiotherapy.

Unit 14 Psychology Sociology Environmental Sciences and Business Administration

Psychology

- Nature, branches, and methods in Psychology
- Learning: Nature, Theories- classical and operant conditioning, insight learning.
- Emotions: Nature and relationship with autonomic nervous systems, Theories of emotions.
- Memory: Types, Forgetting, Causes, Attention and perception,
- Stress: Meanings, Physiological response to stress, Coping strategies.
- Intelligence: Nature, factor theories, process theory
- Altered state of consciousness: Dream, Hypnosis, Sleep
- Difference between normal and abnormal behaviors,



- Anxiety Disorders: Phobias, Panic disorder, generalized anxiety disorder, obsessive - compulsive disorder
- Somatoform Disorders: Conversion disorder, Somatization disorder
- Dissociative Disorders: Depersonalization disorder, dissociative amnesia, dissociative identity disorder
- Mood Disorders: Unipolar disorder, bipolar disorder
- Schizophrenias and Delusional Disorders
- Disorders of Childhood: Attention deficit / hyperactivity disorders, learning disabilities, mental retardation.
- Substance Abuse: Etiology of substance abuse and dependence, alcohol abuse, nicotine and Cigarette
- Old age and Brain Disorders: Delirium dementia
- Psychologically based therapies: Psychodynamic, behavior therapy, cognitive behavior, emotion therapy, humanistic-existential therapy.

Sociology

- Definition, Sociology as a science
- Basic concepts and social structure
- Institutions and Agencies
- Society, Culture and Health: Defining the concepts and approaches to health, the health Care System
- Major determinants of health, home treatment, beliefs and practices affecting therapy
- Health and Disability: Disability- a social perspective, gender and disability, access to public health care and livelihood
- Development and Social problems: Concepts and models of social developments, social problems of development

Environmental Sciences

- Environmental Pollution: Definition, causes, effects, and control measures of pollution air, water, soil, marine, oil, thermal, radiation, heavy metal, gases, particulate matter, pesticide, solid waste (urban and rural), solvents, drugs and noise.
- Absorption, Distribution, Elimination and Organ Toxicology: Membrane coefficient, Mechanism of absorption, Rate of penetration, Routes of absorption of toxicants in human (oral, pulmonary, dermal), Air- water, Octanol-water, Lipid-water, Particle-water partitioning, Renal, Hepatic, Respiratory. Alimentary, Dermal, Cellular, Sex linked elimination of toxicants, Target organ toxicity (Hepato, Neuro, Nephro,
- Reproductive)
- Bioaccumulation, biomagnification, biodegradative and non biodegradative substances, Acute and chronic toxicity, Dose- response relationship, LD 50 and LC 50, Environmental, Forensic, Food, Clinical toxicology, Food additives, Indoor and outdoor pollutants, Occupational hazard, biological warfare and chemical warfare, Infectious and medical waste, Drugs of abuse, pollutants in cosmetics, Additive, synergistic, Antagonistic effects.

Business Administration

- General Administration: Planning and organization, planning cycle, principles of organization charts, resources and quality management, planning change
- Financial issue including budget and income generation
- Hospital management: Hospital organization, Staffing, Information communication and coordination with physiotherapy, Services of hospital, Cost of service, Monitoring, Evaluation



- Self-Management: Preparing for first job, Time management, Career development, Sale of goods and services, Profession of services and advertising
- Administration of the Department: Describe methods of administration in a Physiotherapy department, records. e.g. attendance, statistics, inventory stock
- Maintenance of records, e.g. Methods of community and institutional-based department (CBR and IBR), referrals, purposes and types of referrals
- Store keeping materials, inventory records, purchase ordering petty cash accounting
- General maintenance of equipment, furniture, building costing, of splints/aids, equipment/articles, made in physiotherapy, types of correspondence, methods of filing, methods for care of equipment and materials, budgeting, including items for an annual budget.

Candidate Advisory

Candidates should study each subject at the Bachelor of Physiotherapy level and confirm the latest examination pattern, eligibility conditions, admission schedule and any syllabus revisions from the current official Jamia Millia Islamia admission notice.