

**Syllabus
for
MPT/Master in Respiratory
Theory (MRT) (SCQP21)**

Note:

- i. The Question Paper will have 75 questions.*
- ii. All questions will be based on Subject-Specific Knowledge.*
- iii. All questions are compulsory.*
- iv. The Questions will be Bilingual (English/Hindi).*

Physiotherapy (SCQP21)

ANATOMY

- Regional Anatomy: Thorax, Abdomen, Pelvis, Endocrine System
- Musculoskeletal Anatomy
- Neuroanatomy

PHYSIOLOGY

- General Physiology: Cell, and its Transport Mechanisms
- Blood
- Nerve Muscle Physiology
- Cardiovascular System
- Respiratory System
- Digestive System
- Endocrine System
- Special Senses
- Nervous System
- Renal System
- Reproductive System
- Exercise Physiology

BIOCHEMISTRY

- Nutrition
- Metabolism of Carbohydrate, Lipids, Proteins, Vitamins and Minerals
- Muscle Contraction
- Biochemistry of Connective tissue
- Hormone Action
- Acid-Base, water and electrolyte balance
- Clinical Biochemistry

SOCIOLOGY

- Definition and scope of sociology in relation to Physiotherapy
- Socialization and Social Groups
- Role of Social Worker
- Social Problems of disabled

INTRODUCTION TO YOGA- BASIC THEORY, SCIENCE AND TECHNIQUES

- Foundations of Yoga
- Yoga and Health
- Physiological effects of Yoga practices

GENERAL & CLINICAL PSYCHOLOGY

- Introduction to Psychology
- Growth and Development
- Sensation, attention and perception
- Motivation, Frustration and Emotions
- Intelligence and Learning
- Personality
- Social and Clinical Psychology

BIOMECHANICS AND KINESIOLOGY

- Basic Concepts in Biomechanics: Kinematics and Kinetics
- Joint structure and Function
- Muscle structure and function
- Biomechanics of the Thorax and Chest wall, Vertebral column, Peripheral joints, Temporomandibular Joint
- Analysis of Posture and Gait

PATHOLOGY

- General Pathology: Cell injuries, inflammation and repair, infectious diseases, immunopathology, Neoplasia and Nutritional disorders
- Systemic pathology: Hematology, Respiratory and Cardiovascular Pathology, Musculoskeletal System, Endocrine System, Neuropathology

MICROBIOLOGY

- General Microbiology
- Immunology
- Bacteriology
- Virology

PHARMACOLOGY

- Introduction to Pharmacology: Pharmacokinetics, Pharmacodynamics
- Drugs used in disorders of Cardiovascular system, Autonomic Nervous system, Musculoskeletal systems, Neurological Systems
- Drugs used in Inflammatory/Immune Diseases, movement disorders, Digestion and metabolism.

EXERCISE THERAPY

- Introduction to Exercise Therapy
- Methods of Testing: MMT, Goniometry, etc.
- Relaxation
- Different types of Movements/Exercises – Active, Passive, Active – Assisted, Resisted etc.

- Stretching
- PNF
- Manual Therapy – Joint Mobilization, Manipulation and Soft Tissue Manipulation Techniques
- Aerobic exercises
- Balance and Coordination
- Gait and Posture including assistive devices
- Hydrotherapy

ELECTROTHERAPY

- Bio-Physics: Physical principles, Physics of devices, currents, sound and light, electrical supply
- Nerve Muscle Physiology and Pain physiology
- Low, Medium and High Frequency currents – physiological effects, indications, contraindications and application
- Actinotherapy – IRR, UVR
- Cryotherapy
- Ultrasound and LASER
- Superficial and Deep Heating Modalities- physiological effects, indications, contraindications and application
- Electro-diagnosis – SD curve, EMG and NCV
- Biofeedback

PHYSIOTHERAPY IN GENERAL MEDICINE & GENERAL SURGERY

Medical, Surgical and Physiotherapy assessment and management of:

- Infectious diseases
- Diseases of the cardiorespiratory system
- Endocrine diseases
- Diseases of the blood
- Diseases of the digestive and renal systems
- Diseases of the Skin
- Pediatrics
- Geriatrics
- Psychiatric Disorders
- Wound healing and Scars management
- General Pre and Post – Operative Complications and management.
- Surgical Oncology
- Thoracic and Abdominal Surgeries
- Burns
- ENT and Ophthalmology
- Obstetrics and Gynecology
- I.C.U. Management

MUSCULOSKELETAL PHYSIOTHERAPY

Clinical, Surgical Orthopedics and Physiotherapy assessment and management of:

- Fractures and Dislocations of Upper Limb and Lower Limb
- Fractures of Pelvis and Spine
- Soft Tissue Injuries

- Infectious, Inflammatory, Neoplastic and Degenerative Disorders
- Congenital and Acquired Deformities
- Amputations
- Orthoses and prostheses
- Manual Physiotherapy

NEUROLOGICAL PHYSIOTHERAPY

- Medical, Surgical and Physiotherapy assessment and management of Brain, Spinal Cord, Peripheral Nerve (injuries), Muscle Disorders and Paediatric Neurological conditions
- Neurophysiological Approaches: NDT, MRP, Roods etc.
- Vestibular Rehabilitation

CARDIOVASCULAR AND PULMONARY PHYSIOTHERAPY

- Medical, Surgical and Physiotherapy assessment and management of, Cardiovascular Diseases, Peripheral Vascular Diseases and Respiratory Diseases
- Physiotherapy techniques for Broncho-pulmonary hygiene
- Cardiorespiratory fitness assessment and training
- Cardiac Rehabilitation
- ICU set up and Physiotherapy care

SPORTS PHYSIOTHERAPY

- Physical fitness
- Prevention and Treatment of Sports specific injuries including overuse injuries

COMMUNITY MEDICINE AND REHABILITATION

- Health and Disease
- Epidemiology: Principles and Methods
- Health programs in India
- Nutrition and Health
- Occupational Health
- Disaster Management
- Environment and Health
- Mental Health
- Community based Rehabilitation
- Disability and Disability Evaluation
- Industrial Health & Ergonomics
- Role of Government, voluntary organizations and NGOs in CBR
- Vocational training

BIostatISTICS & RESEARCH METHODOLOGY

- Introduction to Research methodology and Biostatistics
- Formulation of Research problem and design
- Sampling
- Measurement & scaling techniques
- Methods of data collection
- Testing of hypothesis

- Measures of central tendency and dispersion
- Normal Probability Curve
- Statistical tests and their types

CLINICAL REASONING AND EVIDENCE BASED PHYSIOTHERAPY PRACTICE

- Clinical decision Making
- Introduction to Evidence Based Practice
- Development of Evidence based knowledge
- Assessing and using the evidence
- Communicating evidence

PHYSIOTHERAPY LAW AND ETHICS

- Biomedical ethical principles and code of conduct
- Code of ethics for physiotherapists
- Documentation and Informed Consent

ADMINISTRATION AND MANAGEMENT

- Nature and scope of administration
- Role of administrator
- Principles of hospital administration and its applications to physiotherapy.
- Planning and organization
- Personnel management