

MASTERS OF PHYSIOTHERAPY (MPT 2017-2019)

DEPARTMENT OF PHYSIOTHERAPY

MPT (PART-I)

(Semester – I)

Paper Code: MC101

Basic Medical Sciences

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each Section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A- Anatomy and Applied Anatomy:

- A review of organization and regulation of motor system.
 - Types of movement and factors affecting contact and range of motion at synovial joints
 - Skeletal muscle tissue
 - Muscle metabolism
 - Contraction and relaxation of muscle

- Control of muscle tension
- A review of control system of body (Motor and sensory).
 - Structure function and organization of nervous tissue
 - Electrical signals in neurons and its transmission
 - Regeneration and repair of nervous tissue
 - Functional organization of cerebral cortex
 - Sensory motor and integrative system (Sensation, somatic sensation, Sensory pathways, motor pathways).
 - Reflexes and reflex arcs
- Physiology & Applied Physiology:
 - Structure and function of cardio vascular system.
 - Structure and function of respiratory system.
 - Structure and function of endocrinal system.

SECTION B - Clinical Radiology:

- Basics of radiology including ultrasonography, CT & MRI scanning
- Imaging of the head and neck.
- Imaging of spine And Thorax
- Imaging Of Lower Limb.
- Imaging Of Upper Limb
- Pharmacology

Review of pharmacological management of the disorders of:

- Musculoskeletal system
- Nervous system
- Cardiovascular system
- Respiratory disorders

Books Suggested

- Gray's Anatomy - Williams & Warwick - Churchill Livingstone.
- Grants – Methods of Anatomy - Basmajian & Sloncker - Williams & Wilkins.
- Clinical Anatomy for Medical Students - Snells – Lippincott.
- Textbook of Medical Physiology - Guyton - Mosby.
- Pathologic Basis of Diseases - Robbins, Kotran and Kumar – W.B. Saunders.
- Text Book of Radiology - Sutton D. - Churchill Livingstone.
- The Pharmacological basis of Therapeutics - Goodman and Gilman - MacMillan.

- Pharmacology and Pharmacotherapeutics - Satoskar & Bhandarkar – Popular Publications - Bombay

Paper Code: MC102

Biomechanics

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A – Concepts of Biomechanics:

- Introduction to Kinesiology and Biomechanics.
- Principle of Biomechanics
- Nature and importance of Biomechanics in Physiotherapy.
- Advanced Biomechanics and kinesiology
- Introduction to biomechanical analysis of humane motion.
- Analytical tools and techniques –
 - Isokinetic Dynamometer,
 - Kinesiological EMG,
 - Electronic Goniometer,

- Force Platform,
- Videography.
- Ergonomic approach to lifting and handling, workspace and environment.
- Patient positioning, body mechanics and Transfer techniques.

SECTION B – Applied Biomechanics:

- Upper Extremity: Shoulder and Shoulder girdle, Elbow joint, Wrist joint and Hand.
- Lower Extremity: Pelvic Girdle, Hip joint , Knee joint, Ankle & Foot
- Spine
- Gait
- Gait Analysis: Kinetic & Kinematic Analysis.
- Pathological Gait: Kinetic & Kinematic Analysis

Books Suggested

1. James G. Hay – The Biomechanics of Sports Techniques, Prentice Hall.
2. Brunnstrom - Clinical Kinesiology, F.A. Davis.
3. Luttgens K., Hamilton N.: Kinesiology – Scientific Basis of Human Motion 9th Edi, 1997, Brown & Benchmark.
4. Kreighbaum E., Barthels K.: Biomechanics – A Qualitative approach for studying Human Motion, 2nd edi. 1985, MacMillan.
5. Rasch and Burk: Kinesiology and Applied Anatomy, Lee and Fabiger.
6. White and Punjabi - Biomechanics of Spine - Lippincott.
7. Norkin & Levangie: Joint Structure and Function - A Comprehensive Analysis - F.A. Davis.
8. Kapandji: Physiology of Joints Vol. I, II & III, W.B. Saunders.
9. Northrip et al: Analysis of Sports Motion: Anatomic and Biomechanics perspectives, W.C. Brown Co., IOWA.
10. Leveac B.F.: Basic Biomechanics in Sports and Orthopedic Therapy, C.V. Mosby.
11. De Boer & Groot: Biomechanics of Sports, CRL Press, Florida.
12. Basmajian - Muscle alive - Williams & Wilkins.

13. Nordin & Frankel - Basic Biomechanics of Muscular Skeletal System - Williams & Wilkins.
14. Bartlett - Introduction to Sports biomechanics - F & FN Spon Madras.

Paper Code: MC103

Research Methodology and Biostatistics

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs.

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A – Basics concepts:

- Research –Introduction, scope, characteristics, types, clinical trials and ethics.
- Research methods—various methods.
- Census and survey methods of investigation.
- Hypothesis—Advantages and types.
- Sample - Introduction and types of sampling.
- Sample size determination (according to study design)

- Methods of Data Collection
- Schedule –Introduction, types, procedure of forming schedule and limitations.
- Questionnaire – Introduction, types, reliability and limitations.
- Interview -- Introduction, types, technique and limitations.
- Observation – Introduction, organization of field observations and limitations.
- Preparation of report – Introduction, developing outline, writing, references and bibliography.

SECTION B– Concepts of Biostatistics:

- Biostatistics –Introduction, origin &development, scope, functions and limitations
- Presentation of data—Classification, tabulation, diagrammatic and graphical presentation of data.
- Central tendencies – Mean, Mode and Median
- Measures of dispersion – Standard deviation and standard errors.
- Skewness and kurtosis.
- Odd Ratios, Receiver Operating Curve (ROC)
- Probability
- Statistical Tools
 - Correlation and regression
 - Parametric tests
 - Non-parametric tests

Books Suggested

- Bailey, N.T.J. -Statistical methods in Biology. The English universities press, London
- Bajpai, S.R.- Methods of Social Survey and Research, Kitab Ghar, Kanpur.
- Colton - Statistics in medicine, Little Brown Company, Boston
- Gupta, S.P -Statistical methods. Sultan Chand and Sons Publishers , New Delhi.
- Goulden C.H.- Methods of Statistical Analysis. Asia Publishing House , New Delhi.
- Mohsin S.M.- Research Methods in Behavioral Sciences: Orient Publications. New Delhi.
- Mahajan - Methods in Biostatistics, Jay Pee Brothers.Medical Publishers (P) Ltd. New Delhi.
- Hicks- Research for Physiotherapists, Churchill Livingstone, London.
- Meenakshi. - First Course in Methodology of Research. Kalia Prakashan, Patiala.
- Kumar , R.- Research Methodology. Pearson Education , Australia.
- Snedecor,G.W -Statistical Methods, Allied Pacific Pvt. Ltd., London
- Singh, I.- Elementary Statistics for Medical Workers. Jaypee Brothers Medical Publishers (P) Ltd. New Delhi.

(Specialization: Neuro-Physiotherapy)

(Semester – I)

Paper Code: MN104

Assessment and Evaluation in Neuro-physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A – Physical Therapy Assessment Procedures Used In Neurological Conditions:

- Neurological assessment, evaluation and correlation of findings with neurological dysfunction
 - History taking and examination of neurologically ill patient

- Higher cerebral function examination,
- Cognitive and perceptual assessment,
- Cranial nerves examination
- Motor System Assessment - Tone, voluntary movement control & abnormal involuntary movement,
- Assessment of reflex integrity
- Assessment of gait (kinetic & kinematic)
- Sensory system assessment and examination
- Balance and Co-ordination
Assessment evaluation of following and correlation of findings with neurological dysfunction
 - Balance, equilibrium and Coordination assessment.
 - Assessment of Autonomic nervous system function.
 - Vestibular Examination
 - Assessment of unconscious patient.

SECTION B- Neurological Assessment scales and measurement tools

- Functional Assessment scales: Barthel index, Katz Index of ADL, FIM Scale, Sickness Impact Profile, Outcome & Assessment Information Set (OASIS).IADL.
- Functional balance and coordination scales: functional reach test, Timed up and go test, Get up and go test, Berg balance Scale, CTSIB, Scales used in ataxia
- Rehabilitation Outcome measure scales: Quality of life Measures, Scales used in Assessment of elderly.
- Advanced Neurological Assessment Procedures:
 - **Disease Specific Measurements scales and tools:** Clinical Stroke scales, Scales used in spinal cord injury, Scales for the assessment of movement disorders, Multiple sclerosis, Scales for assessment of Brain injury And Cognitive scales,
 - **Laboratory Examination** related to Neurological Disorders: Lumbar puncture & CSF Analysis
 - **Neuro-dynamic tests.**
 - Slump test
 - SLR
 - ULTT

Books suggested

- Neurological Physiotherapy - A problem solving approach - Susan Edwards - Churchill Livingstone.
- Neurological Rehabilitation - Umphred - Mosby.
- Motor Assessment of Developing Infant - Piper & Darrah - W.E. Saunders.
- Paediatric Physical Therapy - Teckling - Lippincott
- Treatment of Cerebral Palsy and Motor Delay-Sophie Levitt
- Brain's Disease of the Nervous System - Nalton - ELBS.
- Guided to clinical Neurology - Mohn & Gaectier - Churchill Livingstone.
- Principles of Neurology - Victor - McGraw Hill International edition.
- Examination in Neurology examination- Dejong.
- Differential Diagnosis-John PatternNeurology in Clinical Practice – Bradley&Daroff
- Neurological Assessment-Blicker staff.
- Clinical Evaluation of Muscle Function-Lacote- Churchill Living Stone
- Hutchinson's Clinical Methods – Swash – Bailliere Tindall.

(Specialization: Musculoskeletal Physiotherapy)

(Semester – I)

Paper Code: MM104

Assessment and Evaluation in Musculoskeletal Physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

Section A—Introduction of Assessment Techniques

- Physiotherapeutic assessment, evaluation and clinical reasoning in orthopedics
Introduction to various concepts of physical assessment
 - Maitland
 - James
 - Cyriax
- Overview of various investigatory procedures (Hematology and Serology, imaging techniques, arthroscopy, BMD)
- Assessment of Amputee
- Examination and assessment of geriatric patient
- Functional Assessment
- Examination of Upper Extremity
 - Shoulder
 - Elbow
 - Forearm,
 - Wrist and Hand

Section B-- Examination of lower extremity & Examination of Spine

- Pelvis
- Hip
- Knee
- Lower Leg, Ankle and Foot
- Head and Face
- Cervical spine
- Thoracic Spine
- Lumbar Spine

Books suggested

- Orthopaedic Physiotherapy, Robert A Donatelli, Churchill Livingstone.
- Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Jaypee brothers
- Physical therapy of shoulder, Robert A Donatelli, Churchill Livingston
- Orthopaedic Physical Assessment David J Magee, Saunders
- Manual Examination and Treatment of the Spine and Extremities , Carolyn Wadsworth, Williams and Wilkins.
- Illustrated Orthopaedic physical Assessment , Ronald C Evans , Mosby.
- Physical Examination of the Spine and Extrimities , Stenley, Lipenfield.
- Clinical Orthopaedic Examination , Mc Rae, Churchill Livingstone.

(Specialization: Sports-Physiotherapy)

(Semester – I)

Paper MS 104

Sports Traumatology I

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A-Assessment and evaluation in Sports Injuries

- Importance of assessment & evaluation
- Outlines of principles and Methods of evaluation
- Clinical Examination , Investigative Procedures and documentation of sports injuries
- Causes & Mechanism of Sports Injuries
- Prevention of Sports injuries
- Principle of management of sports injuries

- Evaluation of Physical Fitness
- Assessment of components of physical fitness including functional tests: muscle strength, flexibility, agility, balance, co-ordination, sensory deficits, cardio-pulmonary endurance
- Sports-Specific evaluation and criteria for return to sport

SECTION B - Lower Limb & Upper limb Examination

- Examination of lower limb
- Common acute and overuse injuries of lower Extremity(with respect to causation, prevention and management) of:
 - Pelvis
 - Hip
 - Thigh
 - Knee
 - Leg
 - Ankle and Foot
- Examination of Upper Extremity
- Common acute and overuse injuries of upper extremities (with respect to causation, prevention and management) of:
 - Shoulder girdle
 - Shoulder
 - Arm
 - Elbow &Forearm
 - Wrist and hand.

Books suggested

- Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
- Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
- Torg, Welsh & Shephard: Current Therapy in Sports Medicine III - Mosby.
- Zulunga et al: Sports Physiotherapy, W.B. Saunders.
- Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
- Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
- Gould: Orthopaedic Sports Physical Therapy, Mosby.
- C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
- D. Kulund: The Injured Athlete, Lippincott.
- Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
Vol. II The Lower Extremity and Spine in Sports Medicine.
Vol. III The Lower Extremity and Spine in Sports Medicine.
Mosby.
- Lee & Dress: Orthopaedic Sports Medicine - W.B Saunders.

- K. Park: Preventive and Social Medicine - Banarsi Dass Bhanot - Jabalpur.
- Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
- Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.
- Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

(Specialization: Cardiopulmonary Physiotherapy)

(Semester – I)

Paper Code: MP104

Assessment & Evaluation in Cardiopulmonary Physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Importance of assessment & evaluation,
- Methods of evaluation and documentation
- Clinical Examination, Reliability & Validity of the tests, Investigative Procedures

- General principle of assessment. Evaluations and documentations
- History taking objective assessment
- Subjective assessment investigations, documentation
- Examination of heart: clinical examinations
- Heart rate monitoring, ECG, echo cardiography
- Exercise Tolerance Tests, Treadmill Testing.

SECTION B

- Examination of respiratory system:
 - Clinical examination,
 - Pulmonary function tests,
 - The history. A.B.G. (Acid Base Gas) analysis
 - Bronchography
- Examination of vascular system,
- Clinical examination of vascular system: Lipid profile, Angiography, Color Doppler

Books suggested

1. Manual of Cardiac Rehabilitation: Dr. Peeyush Jain & Dr. R. Panda
2. The steps to a healthy heart: Kowalski R.E
3. Medicine: Davidson 2. Surgery: Love and Bailey

(SEMESTER-II)

Paper Code: MC201

Management & Educational Methodology in Physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION –A

- **Concept of Morality, Ethics and Legality**
- **Ethical issues in physiotherapy practice:**
 - Professionalism
 - Informed consent
 - Confidentiality
 - Sexual and Physical Abuse
 - Social characteristics and Personal relationships
 - Professional issues
 - Client interest and satisfaction
 - Confidence and communication
 - Malpractice
 - Negligence
 - Rights of patients
 - Status of physiotherapist in health care
- **Communication skills:**
 - Process of Communication
 - Barriers to Communication
 - Types of Communication
 - Written vs. Oral Communication
 - Elements of good communication
- **Management – principles and applications of Management and Administration to Physio Therapy practice:**
 - Planning, organizing, staffing, finance, marketing, controlling, directing.
 - Setting of a physiotherapy service unit

SECTION-B

I. Education:

- Definition

- Aims and objectives of education
- Agencies of education
- Formal and informal education
- Brief introduction to the Philosophies of education
- Taxonomy of educational objectives
- Essentials of physiotherapy education

II. Concept of teaching – learning

- Nature of learning, type and stages of learning
 - Factors affecting learning
 - Laws of learning
 - Learning style teaching learning process,
 - Role of teacher in teaching learning process,
 - Adult learning
 - Teaching skills
 - Teaching Methods in Classroom Setting
 - Clinical teaching methods
 - Planning of teaching: lesson planning and unit planning
- **Teaching aids and educational technology**
- **Curriculum:**
 - Meaning and Concept of curriculum
 - Factors affecting curriculum
 - Types of curriculum
 - Basic principles of curriculum construction
 - Steps of curriculum development
- **Assessment and Evaluation:**
 - Meaning and Concepts of assessment
 - Measurement Evaluation and examination
 - Purpose of Evaluation
 - Types of evaluation
 - Principles of evaluation
 - Techniques of evaluation
 - Methods and tools used in testing of knowledge, skill, clinical performance and attitude
- **Faculty development, continuing professional education**

Paper Code: MC202

Physiotherapy Methods-I

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

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INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Principle of therapeutic exercises
 - Definition, details of effects and uses of following exercises.
- a. Dynamic Exercises
 - b. Plyometric Exercises
 - c. Isokinetic Exercises
 - e. Kinetic chain exercises

- Stretching
- Balance and coordination exercises
- Factors affecting the joint range of motion prevention of stiffness, methods of Joint mobilization.
- Biophysics of contractile and non contractile tissues, Response to mechanical loading
- Clinical reasoning and differential clinical diagnosis based on various approaches such as Maitland, Kaltenborne, Cyriax, Mulligan, Meckenzie etc

SECTION B

- Principles and application of neuromuscular facilitation techniques including PNF
- Principles of different soft tissue mobilizations like Myofacial Techniques,
- Neural Tissue Mobilization
- Muscle Energy Technique
- **Massage**
- Historical development.
- Definition and classification of massage techniques
- Physiological effects of massage.
- Description of the techniques of the classical massage.
- Physiological basis of massage, underwater massage, mechanical devices of massage
- Therapeutic applications and contraindications of massage.
- Aquatic therapy

Books suggested

1. Sinha A.G.: Principle and Practices of Therapeutic Massage – Jaypee Brothers,
New Delhi
2. Gardiner M. Dena: The Principles of Exercise Therapy - CBS Publishers, Delhi.
3. Kisner and Colby: Therapeutic Exercises – Foundations and Techniques, F.A.
Davis.
4. Basmajian John V.: Therapeutic Exercise, Williams & Wilkins.
5. Thomson et al - Tidy's Physiotherapy: Butterworth – Heinmann.
6. Wood & Baker: Beard's Massage, W.B. Saunders.
7. Kendall: Muscles – Testing and Function - Williams & Wilkins
8. Daniels and Worthinghams: Muscle Testing – Techniques of Manual

- Examination, W.B. Saunders.
9. First Aid to Injured: St. John's Ambulance Association.
 10. William E. Prentice: Rehabilitation Techniques - Mosby.
 11. Werner Kuprian: Physical Therapy for Sports, W.B. Saunders.
 12. Norkin & White: Measurement of Joint Motion – A Guide to Goniometry - F.A. Davis.
 13. Andrea Bates and Norm Hanson: Aquatic Exercise Therapy, W.B. Saunders.
 14. Dvir: Isokinetics: Muscle Testing, Interpretation and Clinical Applications, W.B. Saunders.
 15. Hartley: Practical Joint Assessment, A Sports Medicine Manual, upper and lower quadrants, C.V. Mosby.
 16. Kennedy: Mosby's Sports Therapy Taping Guide.
 17. Malone: Orthopaedic and Sports Physical Therapy, C.V. Mosby.
 18. Albert: Eccentric Muscle Training in Sports and Orthopaedics, W.B. Saunders.
 19. Voss et al - Proprioceptive Neuromuscular Facilitation - Patterns & Techniques - Williams & Wilkins.

(Specialization: Neuro-Physiotherapy)

(Semester – II)

Paper Code: MN203

PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGY

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

The dissertation work of 200 marks will be allotted in the Third Semester and topic for the same will be given after the second Semester. Viva-Voce Examination for the dissertation work and Practical Examination for Clinical Skills and Reasoning will be conducted at end of the fourth semester.

SECTION –A

- Pre & post-natal Development sequence of normal child.
- Developmental milestones, Neonatal reflexes, various periods of growth,
- General assessment of child
- Treatment techniques: NDT approach, Roods approach, Vojta techniques,
- Early identification and intervention Important Screening Tests.
 - Developmental Screening Tests.
 - Tests of motor function.

- Nutrition and Immunization: Normal nutritional requirements of a child, Prevention of some nutritional disorders, Nutritional deficiency diseases, Immunization.

- High risk infants, risk factors, neonatal assessment, developmental intervention, ICU, NICU & IMC Care.

SECTION –B

- Cerebral Palsy: types, etiology, clinical features, management and rehabilitation of various types of cerebral palsies various approaches used in C.P.
- Physiotherapy in Neurological affection of childhood: poliomyelitis, spina bifida, hydrocephalus, meningitis, encephalitis, inflammatory disorders of brain and spinal cord, birth injuries of brachial plexus
- Physiotherapy in Muscular Disorders:
 - a. myopathies of childhood,
 - b. types of muscular dystrophies,
 - c. floppy muscular dystrophy;
- Role of Physiotherapy in Genetic Disorders:
 - a. Down syndrome,
 - b. Fragile X Syndrome,
 - c. Rett's Syndrome,
 - d. Spinal Muscular Atrophy

Books suggested

- Cash's textbook of neurology for physiotherapists - Downi - J.P.Brothers.
- Neurological Physiotherapy - A problem solving approach - Susan Edwards - Churchill Livingstone.
- Neurological Rehabilitation - Umpherd - Mosby.
- Motor Assessment of Developing Infant - Piper & Darrah - W.E. Saunders.
- Paediatric Physical Therapy - Teckling - Lippincott
- Treatment of Cerebral Palsy and Motor Delay - Levins - Blackwell Scientific Publications London.
- Physiotherapy in Paediatrics – Shepherd – Butterworth Heinemann
- Treatment of Cerebral Palsy and Motor Delay-Sophie Levitt
- Brain's Disease of the Nervous System - Nalton - ELBS.
- Guided to clinical Neurology - Mohn & Gaectier - Churchill Livingstone.
- Principles of Neurology - Victor - McGraw Hill International edition.
- Physical Medicine & Rehabilitation-Susan Sullivan
- Neurological Rehabilitation-Illus
- Physical Medicine & Rehabilitation-Delsore
- Assessment in Neurology-Dejong.
- Differential Diagnosis-John Pattern Neurology in Clinical Practice – Bradley&Daroff
- Neurological Assessment-Blicker staff
- Davidson's principles and Practices of Medicine - Edward Churchill Livingstone
- Hutchinson's Clinical Methods – Swash – Bailliere Tindall.

(Specialization: Musculoskeletal Physiotherapy)

(Semester – II)

Paper Code: MM203

PHYSIOTHERAPY IN NON-TRAUMATIC ORTHOPAEDIC CONDITIONS

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

General Orthopedics

- Infections in bones and joints:- Acute, Chronic
- Rheumatic disorders
- Generalized affections of bone and joints (metabolic & endocrinal)
- Development disorders. (cartilaginous dysplasis, bony dysplasis & chromosomal abnormalities etc.)
- Congenital disorders
- Degenerative disorders
- Tumors of bones

- Osteonecrosis and Osteochondritis
- Bony & Soft Tissue disorders of:-
 - Shoulder and arm
 - Elbow and forearm
 - Wrist and hand

SECTION B

- Bony & Soft Tissue disorders of:
 - Hip and thigh
 - Knee and leg
 - Ankle and foot
- Vascular and Neuromuscular Disorders.
 - Thoracic outlet/ inlet syndrome
 - Compartment syndrome.
 - Neuropathies,
 - Neuralgia , Neuritis
 - Reflex Sympathetic Dystrophy
 - Poliomyelitis,

Books suggested

- Turek's Orthopaedics: Principles and their Application , Weinstein SL and Buckwalter JA, Lippincott
- Apley's System of Orthopaedics and Fractures , Louis Solomon , Arnold publishers.
- Textbook of Orthopaedics, Adams: Churchill Livingstone
- Clinical Orthopaedic Rehabilitation, Brent Brotzman.
- Orthopaedic Physiotherapy, Robert A Donatelli, Churchill Livingstone.
- Tidy's Physiotherapy, Ann Thomasons , Varghese publishing House.
- Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Japee brothers
- Textbook of Orthopaedics, John Ebnezar, Japee Brothers.
- Pain Series Rene Calliet., Japee Brothers.
- Physical therapy of shoulder, Robert A Donatelli, Churchill Livingstone
- Geriatric physiotherapy Guccione AA, Mosby.
- Hand practice , Principle and Practice, Mauren Salter, Butterworth Heinemann.
- Essentials of Orthopaedics and Applied Physiotherapy , Jayant Joshi,prakash Kotwal; Churchill Livingstone
- Essential Orthopaedics , J Maheshwari, Mehta Publishers.
- Practical Orthopaedic Medicine , Brain Corrigan, Butterworth.
- Principle and Practice of Orthopaedics Sports Medicine, William E Garrett, Lippincott William and Wilkins.

(Specialization: Sports Physiotherapy)

(Semester –II)

Paper Code MS203

Sports Traumatology 2

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Assessment of vertebral column:
 - Cervical
 - Thoracic
 - Lumbosacral including Tests of Neural Tension.
- Common sports injuries of spine with respect to causation, prevention and management
- Sporting emergencies & first aid

- Head and neck
- Face
- Abdominal injuries
- Cardio pulmonary Resuscitation; Shock management, Internal and External Bleeding, Splinting, Stretcher use-Handling and transfer
- Management of Cardiac Arrest, acute asthma, epilepsy, drowning, burn
- Medical management of Mass Participation
- Heat stroke and Heat illness.

SECTION B

- Kinanthropometric evaluation
- Kinesiological EMG
- Sports specific injuries, with special emphasis on the specific risk factor, nature of Sports, kind of medical intervention anticipated and prevention with respect to various sporting events
 - Individual events: Field & Track
 - Team events: Hockey, Cricket, and Football
 - Contact and Non-contact sports
 - Water sports

Books suggested

- Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
- Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
- Torg, Welsh & Shephard: Current Therapy in Sports Medicine III - Mosby.
- Zulunga et al: Sports Physiotherapy, W.B. Saunders.
- Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
- Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
- Gould: Orthopaedic Sports Physical Therapy, Mosby.
- C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
- D. Kulund: The Injured Athlete, Lippincott.
- Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
 - Vol. II The Lower Extremity and Spine in Sports Medicine.
 - Vol. III The Lower Extremity and Spine in Sports Medicine.
 - Mosby.
- Lee & Dress: Orthopaedic Sports Medicine - W.B Saunders.
- K. Park: Preventive and Social Medicine - Banarsi Dass Bhanot - Jabalpur.
- Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
- Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.
- Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

Specialization: Cardiopulmonary Physiotherapy

(Semester-II)

Paper Code: MP203

Cardiopulmonary Physiotherapy Techniques

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Percussion, Vibration, Shaking, Quick Stretch
- Postural drainage
- Huffing & Coughing
- Suctioning procedure
- Active cycle of breathing
- Autogenic Drainage
- Glossopharyngeal, Breathing, Pursed Lip breathing, relaxed breathing, segmental breathing, indications for each technique

- Body positioning.
- Respiratory muscle training
- Blood pressure & pulse monitoring with a subject at rest and during activity
- Rate of perceived exertion scale and use in the formulation of exercise prescription
- Technique for facilitating ventilatory pattern.
- Burgers Exercise

SECTION B

- Technique for Cardio pulmonary Resuscitation,
- Shock management
- Stretcher use-Handling and transfer
- Shoulder and thoracic mobility exercise.
- Intermittent compression for lymphatic disorders
- Oxygen therapy and humidification, oxygen toxicity.
- Instillation
- Nebulization
 - Aerosol therapy
 - Incentive spirometry

Books Suggested:

1. Manual of Cardiac Rehabilitation: Dr. Peeyush Jain & Dr. R. Panda.
2. The steps to a healthy heart: Kowalski R.E.
3. Medicine: Davidson2. Surgery: Love and Bailey.

(SEMESTER-III)

Paper Code: MC301

Physiotherapy Methods II

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Electro diagnosis: introduction to methods of electro diagnosis SD CURVE
- Electro myography : technique of EMG , interpretation of normal and abnormal responses
- Nerve conduction studies: MNCV, SNCV, variables affecting nerve conduction, measurement of NCV of nerves of upper limb and lower limb, interpretations of normal and abnormal responses.
- Evoked potentials, H-reflex, P wave, repetitive nerve stimulation, VEP, BAEP, SSEP.
- Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of:
 - Superficial heating modalities
 - Deep heating modalities
 - Ultrasound
 - Cryotherapy

SECTION B

I. Review of Principles underlying the application of following modalities with reference to their Production, biophysical and therapeutic effects, indications and contraindications and the specific uses of Physiotherapy

- Low Frequency Current: Diadynamic Current, Iontophoresis
- High Voltage, Pulsed Galvanic Stimulation , TENS, IFT, Russian Currents. LASER
- Advanced Electro Therapeutics in Tissue healing, Wound care, Management of Scars keloids, Muscle Plasticity & Integumentary Conditions.
- BIO-FEED BACK

Books suggested

2. William E. Prentice: Therapeutic Modalities in Sports Medicine - Mosby.
3. William E. Prentice: Rehabilitation Techniques - Mosby.
4. O' Sullivan, Schmitz: Physical Rehabilitation – Assessment and Treatment - F.A. Davis.
5. John Low & Reed: Electrotherapy Explained, Butterworth.
6. Meryl Roth Gersh: Electrotherapy in Rehabilitation, FA Davis.
7. Joseph Kahn: Principles and Practice of Electrotherapy, Churchill Livingstone.
8. Claytons Electrotherapy 10th Ed. - Sarah & Bazin - W.B. Saunders.
9. Harrelson and Andrews: Physical Rehabilitation of Injured Athlete.
10. Nelson and Currier: Clinical Electrotherapy, Prentice Hall.
11. Greenman: Principles of Manual medicine, William and Wilkins.
12. Kuprian: Physical Therapy for Sports, W.B. Saunders.
13. Bates: Aquatic Exercise Therapy, W.B. Saunders.
14. Michlovitz - Thermal agents in Rehabilitation - F.A. Davis.
15. Lehmann - Therapeutic Heat and Cold - Williams & Wilkins.

Paper Code: MC302

Basics of Exercise Physiology & Nutrition

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- **Bioenergetics of exercise** : High energy phosphates, Anaerobic and aerobic ATP synthesis, Bioenergetics Control, exercise intensity & substrate utilization, protecting CHO stores, muscle adaptation to endurance training, processes that potentially limit the rate of fat oxidation, regulation of substrate utilization, training - induced increase in FFA oxidization:
- Basal metabolic and resting metabolic rates and factors affecting them, Classification of Physical Activities by energy expenditure,. Concept of MET , measurement of energy cost of exercise
- **Nutrition**

- metabolism of Carbohydrate , fats and proteins , vitamin, mineral and water
- **Nutrition in exercise**
 - optimum nutrition for exercise , nutrition for physical performance , pre game meal
 - carbohydrate loading , food for various athletic events , fluid and energy replacement in prolonged exercise

SECTION B

- **Respiratory responses to exercise:** Ventilation at Rest and during Exercise., Ventilation and the Anaerobic Threshold, static and dynamic lung volume . Gas diffusion, Oxygen and carbon dioxide transport second wind , stitch by side control of pulmonary ventilation during exercise adaptive changes in the respiratory systems due to regular physical activities .
- **Cardiovascular responses to exercise-** Cardiovascular system and exercise, acute vascular effects of exercise , Circulatory responses to various types of exercise regulation of cardiovascular system during exercise , Pattern of redistribution of blood flow during exercise, adaptive responses of cardiovascular system to aerobic and anaerobic training. Athlete heart
- **Exercise and Acid Base Balance:**
Acid and Bases, Buffers, pH, Respiratory Regulation of pH, Alkali Reserve, The kidneys and Acid base balance, Alkalosis and Acidosis, Acid base balance following heavy exercise.
- **Hormonal responses to exercise with respect to**
Growth Hormone (GH), Thyroid and Parathroid Hormones. Anti diuretic Hormone (ADH) and Aldosterone, Insulin and Glucagons, The catecholamine; epinephrine and norepinephrine. The sex hormones. The glucocorticoids (Cortisol) and AdrenoCorticotrophic Hormones (ACTH). Prostaglandins and Endorphins:

Books suggested

- Essentials of Exercise Physiology: McArdle, WD, Katch, FI, and Katch, VL. 2nd edn, Lippincott Williams and Wilkins (2000).
- Fundamentals of Exercise Physiology: For Fitness Performance and Health, Robergs RA, and Roberts, S.O. McGraw Hill (2000)
- Exercise Physiology: Powers, SK and Howley ET. 4th edn; Mc Graw Hill (2001)
- Physiology of Sport and Exercise: Wilmore, JH and Costil, DL. Human Kinetics (1994)
- Exercise Physiology- Human Bioenergetics and its Application: Brooks, GA, Fahey, TD, White, TP. Mayfield Publishing Company (1996)
- Komi, P. (Ed.) (1992) Strength and power in sport. Blackwell Scientific Publications.

- Levick, J.R. (1998) An introduction to Cardiovascular Physiology. 2nd ed. Butterworth Heinemann
- McArdle, WD, Katch, FI & Katch, VL (2001) Exercise Physiology. 5th ed. Lippincott, Williams & Wilkins.
- Shephard and Astrand (1996) Endurance in sport. Blackwell Scientific Publications.
- Willmore, JH & Costill, DL (1999) Physiology of Sport and Exercise. 2nd ed. Human Kinetics.
- Guyton, A.C. Textbook of Medical Physiology (7th Ed.). Philadelphia: Saunders, 1986, pp. 382-386, 472-476.
- Perspectives in Nutrition (6th ed.) by Wardlaw
- Nutrition for sport and exercise (2nd ed.) by Berning and Steen

Specialization: Neurological Physiotherapy

(Semester-III)

Paper Code: MN303

PHYSIOTHERAPY & REHABILITATION IN NEUROLOGICAL DISORDERS –I

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- **Cerebral Trauma (Head and Brain Injury)**
Epidemiology, Pathophysiologies, Symptoms, Signs, Investigation, Management, Pre and Post Operative Physiotherapy, Complications.
 - Closed skull Fractures.
 - Haematomas: Epidural, Sub Dural, Intracerebral
 - Open cranio-cerebral injuries
 - Reconstruction operation in head injuries

- **Stupor and Coma**
 1. The Neural basis of consciousness.
 2. Lesions responsible for Stupor and Coma
 3. The assessment and Investigation of the unconscious patient.
 4. The Management of the Unconscious patient.

- **Disorders of the Cerebral Circulation - Stroke :**
 - Epidemiology of the stroke and TIA
 - Causes,types and pathophysiology
 - Clinical features & investigations
 - Treatment of different type of stroke
 - Recovery & rehabilitation
 - Stroke prevention

- **Neoplastic lesion**
 - Intracranial Tumors
 - Cerebral Hemisphere
 - Tumors from related structures, Meninges, Cranial Nerves.
 - cerebellar

SECTION-B

- **Infections**

- Meningitis
- Encephalitis
- Brain abscess
- Neuro Syphilis(Tabes dorsalis)
- Herpes Simplex
- Chorea
- Tuberculosis
- Chronic fatigue syndrome
- AIDS

- **Cerebrovascular Diseases**
 - Intracranial Aneurysm
 - Spontaneous Subdural
 - Extradural Haemorrhage
 - intracerebral Haemorrhage
 - Subarachnoid haemorrhage
 - AV Malformations

- **Demyelinating Diseases of the Nervous system:**
 1. Classification of Demyelinating Diseases
 2. Multiple Sclerosis.
 3. Diffuse Sclerosis

- **Movement disorders**
 - Akinetic-rigidity Syndromes disorder and other extra Pyramidal Syndromes
 - Dyskinetic disorders

Books suggested

- Cash's textbook of neurology for physiotherapists - Downi - J.P.Brothers.
- Adult Hemiplegia - Evaluation & treatment - Bobath - Oxford Butterworth Heinmann.
- Neurological Rehabilitation - Carr & Shepherd -Butter worth Heinmann.
- Tetraplegia & Paraplegia - A guide for physiotherapist - Bromley - Churchill Livingstone.
- Neurological Physiotherapy - A problem solving approach - Susan Edwards - Churchill Livingstone.
- Neurological Rehabilitation - Umpherd - Mosby.
- Geriatric Physical Therapy - Gucciona - Mosby.
- Brunnstrom's Movement Therapy in Hemiplegia-Sawner&La Vigne-Lippincott
- Treatment of Cerebral Palsy and Motor Delay-Sophie Levitt
- Motor Relearning Programme for stroke-carr&Shepherd
- Right in the Middle-Patricia M.Davies-Springer

- Brain's Disease of the Nervous System - Nalton - ELBS.
- Guided to clinical Neurology - Mohn & Gaectier - Churchill Livingstone.
- Principles of Neurology - Victor - McGraw Hill International edition.
- Davidson's Principles and practices of medicine - Edward – Churchill Livingstone.
- Physical Medicine & Rehabilitation-Susan Sullivan
- Neurological Rehabilitation-Illus
- Physical Medicine & Rehabilitation-Delsore
- Assessment in Neurology-Dejong.
- Differential Diagnosis-John PatternNeurology in Clinical Practice – Bradley&Daroff
- Neurological Assessment-Blicker staff.
- Steps to follow-PATRICIA M.DAVIES-Springer.
- Muscle Energy Techniques-Chaitow-Churchill Living Stone.
- Clinical Evaluation of Muscle Function-Lacote- Churchill Living Stone.
- Davidson's principles and Practices of Medicine - Edward Churchill Livingstone.
- Hutchinson's Clinical Methods – Swash – Bailliere Tindall..
- A Short Textbook of Medicine - Krishna Rao - Jaypee Brothers.
- A Short textbook of Psychiatry_ Ahuja Niraj - Jaypee Brothers.

Specialization: Musculoskeletal Physiotherapy

(Semester-III)

Paper Code: MM303

PHYSIOTHERAPY IN TRAUMATIC ORTHOPAEDIC CONDITIONS

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out

of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

The dissertation work of 200 marks will be allotted in the Third Semester and topic for the same will be given after the second Semester. Viva-Voce Examination for the dissertation work and Practical Examination for Clinical Skills and Reasoning will be conducted at end of the fourth semester.

SECTION A

- Fracture and soft tissue injuries of upper limb
 - Shoulder and arm
 - Elbow and forearm
 - Wrist and hand

- Fracture and soft tissue injuries of lower limb
 - Pelvis
 - Hip and thigh
 - Knee and leg
 - Ankle and foot

SECTION B

- Method of different types of some common surgeries and its rehabilitation.
 - Meniscectomy
 - Patellectomy
 - Arthroplasties :-Shoulder, Elbow, Hip, Knee Arthroplasty.
 - Arthrodesis :- triple arthrodesis, Hip, Knee, Shoulder Elbow arthrodesis, Spinal Fusion
 - Osteotomies
 - Bone grafting, Bone Lengthening
 - Tendon transfers
 - Soft Tissue release
 - Nerve Repair and grafting etc.

- Burns
- Amputation
 - Types, Levels & procedures

- Pre and post operative rehabilitation.
- Prosthesis and stump care.
- Limb transplantation Surgery

Books suggested

- Turek's Orthopedics: Principles and their Application , Weinstein SL and Buckwalter JA, Lippincott
- Apley's System of Orthopedics and Fractures , Louis Solomon , Arnold publishers.
- Textbook of Orthopedics for Fractures, Adams: Churchill Livingstone
- Clinical Orthopedic Rehabilitation, Brent Brotzman.
- Orthopedic Physiotherapy, Robert A Donatelli, Churchill Livingstone.
- Tidy's Physiotherapy, Ann Thomasons ,Varghese publishing House.
- Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Japee brothers
- Textbook of Orthopedics, John Ebnezar, Japee Brothers.
- Treatment and Rehabilitation of fractures,S Hoppenfield, Vasantha LM;Lippincott William and Wilkins.
- Hand practice , Principle and Practice, Mauren Salter, Butterworth Heinemann.
- Essentials of Orthopaedics and Applied Physiotherapy , Jayant Joshi,prakash Kotwal; Churchill Livingstone
- Essential Orthopaedics , J Maheshwari, Mehta Publishers.
- Principle and Practice of Orthopaedics Sports Medicine, William E Garrett, Lippincott William and Wilkins.

SPECIALIZATION: SPORTS PHYSIOTHERAPY

(SEMESTER- III)

Paper Code MS303

Non – Traumatic Medical Conditions of Athlete

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

The dissertation work of 200 marks will be allotted in the Third Semester and topic for the same will be given after the second Semester. Viva-Voce Examination for the dissertation work and Practical Examination for Clinical Skills and Reasoning will be conducted at end of the fourth semester.

SECTION A

- Illness
- Hypertension
- Urine abnormalities
- Exercise Induced Asthma
- Anemia
- Delayed onset muscle soreness (DOMS)
- Runner's high & Exercise addiction.
- G.I.T. Diseases
- Exercises and congestive heart failure
- Exercise for Post coronary & by pass patients
- Exercise for diabetics
- Diagnosis and management of skin conditions of Athletes
 - Bacterial infections
 - Fungal Infections
 - Viral infections
 - Boils
 - Cellulites.

SECTION B

- Female Specific problems

- Sports Amenorrhea.
- Injury to female reproductive tract.
- Menstrual Synchrony.
- Sex determination.
- Exercise and pregnancy.
- Eating disorders in athletes
- Common Infectious disease:
 - Common Cold
 - Diarrhoea
 - Dysentery
 - Typhoid
 - Cholera
 - Amoebiasis
 - Food Poisoning
 - Tuberculosis
 - Malaria
 - Hepatitis
 - Venereal disease etc.
- AIDS in sports people.

Books suggested

1. Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
2. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
3. Torg, Welsh & Shephard: Current Therapy in Sports Medicine III - Mosby.
4. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.
6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
7. Gould: Orthopedic Sports Physical Therapy, Mosby.
8. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
9. D. Kulund: The Injured Athlete, Lippincott.
10. Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
Vol. II The Lower Extremity and Spine in Sports Medicine.
Vol. III The Lower Extremity and Spine in Sports Medicine.

Mosby.

11. Lee & Dress: Orthopedic Sports Medicine - W.B Saunders.

12. K. Park: Preventive and Social Medicine - Banarsi Dass Bhanot - Jabalpur..

13. Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.

14. Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.

15. Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

SPECIALISATION: CARDIOPULMONARY PHYSIOTHERAPY

(SEMESTER-III)

Paper Code: MP303

Medical & Surgical Conditions Of Heart, Lung & Vascular System

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist

of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Definition, Causes, pathophysiology, signs & symptoms, management of the following Medical Respiratory Conditions:
 - Asthma
 - Chronic bronchitis
 - Emphysema
 - Pneumonia
 - T.B.
 - Empyema
 - Pleural effusion
 - Bronchiectasis
 - Pulmonary embolism

- Definition, Causes, pathophysiology, signs & symptoms, management of the following Medical cardiac condition:
 1. Congestive Cardiac Failure
 2. Valvular Disease
 3. Ischaemic Heart Disease
 4. MI And Coronary Care
 5. Rheumatic Fever/ Rheumatic heart disease
 6. Congenital heart diseases
 7. Pulmonary and Systemic hypertension
 8. Phlebothrombosis
 9. Raynaud's disease

10. Buerger's disease
11. Varicose veins and ulcers
12. Venous thrombosis/Deep vein thrombosis

SECTION B

I. Preoperative – post operative testing/assessment, Surgical Management of the following pulmonary surgeries:

1. Thoracoscopy
 2. Lobectomy
 3. Pneumonectomy
 4. Thoracotomy
 5. Pluerodesis
 6. Pleurectomy
 7. Blebectomy
 8. Lung resection
 9. Segmental rection
- Preoperative – post operative assessment, physiotherapy | Management of the following Cardiac surgeries
 - Coronary artery bypass Grafting
 - Aneurysectomy
 - Pericardiectomy
 - Repair of septal Defect

Books suggested

1. Manual of Cardiac Rehabilitation: Dr. Peeyush Jain & Dr. R. Panda
2. The steps to a healthy heart: Kowalski R.E

3. Medicine: Davidson2. Surgery: Love and Bailey

SEMESTER-IV

SPECIALISATION: NEUROLOGICAL & MUSCULOSKELETAL PHYSIOTHERAPY

Paper Code: MC 401

BIOENGINEERING AND REHABILITATION PRINCIPLES

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Conceptual framework of rehabilitation, roles of rehabilitation team members, definitions and various models of rehabilitation. International classification of functioning
- Epidemiology of disability with emphasis on locomotor disability, impact of disability on individual, family, and society.

- Preventive aspects of disability and organizational skills to run disability services
- **Model of service delivery** : feature , merits and demerits of institutional based rehabilitation , out reach programmes, Community based rehabilitation
- **Legal Aspect in Disabilities:** PWD act , national trust act , RCI act, Statutory provisions Schemes of assistance to persons with disabilities
- Govt and NGO participation in disability RCI
- **Principles of Orthotics-** types, indications, contra indications, assessment (check out), uses and fitting –region wise.
 - Orthotics for the Upper Limb
 - Orthotics for the Lower Limb
 - Orthotics for the Spine
- **Principles of prostheses-** types, indications, contra indications, assessment (check out), uses and fitting –region wise.

SECTION B

- An outline of principles and methods of rehabilitation of speech and hearing disability
- An outline of principles and methods of vocational and social rehabilitation
- An outline of principles and methods of rehabilitation of mentally handicapped
- An outline of principles , methods and scope occupational therapy
- Architectural Barriers: Describe architectural barriers and possible modifications with reference to Rheumatoid Arthritis, CVA, Spinal Cord Injury and other disabling conditions.
- An outline of the principles and process of disability evaluation

SPECIALISATION: SPORTS & CARDIOPULMONARY PHYSIOTHERAPY

(SEMESTER-IV)

Paper Code: MC401

Applied Exercise Physiology

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

I. Training and conditioning

Physiological basis of physical training , training principles , interval training , continues running concept of anaerobic threshold and vo₂ max , physiological effects of various physical training methods,- aerobic and anaerobic training , strength training factors influencing training effects – intensity, frequency , duration , detraining, , process of recovery , post exercise oxygen consumption factors affecting recovery process , overtraining

- **Body temperature regulation during exercise**

Mechanism of regulation of body temperature , Body temperature responses during exercise, Physiological responses to exercise in the heat , Acclimatization to exercise in the heat , Effects of age and gender on body temperature regulation during exercise, Physical activity and heat illness[heat exhaustion, dehydration exhaustion heat cramps & heat stroke] Prevention of Heat Disorders

- **Exercise in the Cold**

Effects of exposure to cold and severe cold , Wind chill, Temperature receptors., Role of hypothalamus , shivering , Frost Bite and other problems, Clothing and Environment

SECTION- B

I. Exercise at Altitude

Exercise at altitude immediate physiological responses at high altitude , physiological basis of altitude training , phases of altitude training and specific training effects , altitude acclimatization , oxygen dissociation curve at altitude , disorders associated with altitude training

II. Exercise and body fluids

Measurement and regulation of body fluids, Body fluid responses and adaptations to exercise, Effects of dehydration and fluid replenishment on physiological responses to exercise and performance Fluid/carbohydrate replacement beverages

III. Physical activity, body composition, energy balance and weight control

Significance and measurement of body composition, Body composition during growth and aging, Body composition and physical performance, Effect of diet and exercise on body composition, Physical activity, energy balance, nutrient balance and weight control, Physical activity, fat distribution and the metabolic syndrome , Healthy weight loss, Ways and methods of weight reduction , fluid maintenance, disordered eating, nutritional ergogenic aids, diet supplements in athletes and others involved in physical activity.

IV. Exercise and Diabetes Mellitus

Exercise in insulin, requiring diabetes and non-insulin dependent diabetes mellitus, Effect of physical training on glucose tolerance and insulin sensitivity, Management of diabetes by diet and insulin

Books suggested

- Essentials of Exercise Physiology: McArdle, WD, Katch, FI, and Katch, VL. 2nd edn, Lippincott Williams and Wilkins (2000).
- Fundamentals of Exercise Physiology: For Fitness Performance and Health, Robergs RA, and Roberts, S.O. McGraw Hill (2000)
- Exercise Physiology: Powers, SK and Howley ET. 4th edn; Mc Graw Hill (2001)
- Physiology of Sport and Exercise: Wilmore, JH and Costil, DL. Human Kinetics (1994)
- Exercise Physiology- Human Bioenergetics and its Application: Brooks, GA, Fahey, TD, White, TP. Mayfield Publishing Company (1996)

- Komi, P. (Ed.) (1992) Strength and power in sport. Blackwell Scientific Publications.

SPECIALIZATION: NEUROLOGICAL PHYSIOTHERAPY

(SEMESTER-IV)

Paper Code: MN402

PHYSIOTHERAPY AND REHABILITATION IN NEUROLOGICAL DISORDERS –II

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION-A

I. Degenerative Diseases of the Spinal cord and Cauda Equina

- Ataxia (sensory)
- Motor Neuron Disease
- Spinal Muscular Atrophy
- Spino-cerebellar Degeneration(Friedreich's Ataxia)
- Transverse Myelitis

II. Disorders / rehabilitation of the spinal cord & cauda equina

1. Acute Traumatic injuries of the spinal cord
2. Slow progressive compression of the spinal cord
3. Syringomyelia
4. Ischaemia and infection of the Spinal Cord (Transverse myelitis) and Cauda Equina
5. Tumors of Spinal Cord
6. Surges surgical management in Spinal Cord

IV. Disorders of peripheral nerves:

- Peripheral neuropathies and peripheral nerve lesions
- Clinical diagnosis of peripheral neuropathy
- All types of levels of peripheral neuropathies and brachial plexus lesions
- Causalgia
- Reflex sympathetic dystrophy
- Traumatic, Compressive and Ischaemic neuropathy
- Spinal Radiculitis and Radiculopathy
- Hereditary motor and sensory neuropathy
- Acute idiopathic polyneuritis
- Neuropathy due to infections
- Vasculomotor neuropathy
- Neuropathy due to Systemic Medical Disorders
- Drug induced neuropathy
- Metal poisoning, Chemical neuropathies
- Polyneuropathies: Acute, Subacute and Chronic level polyneuropathy
- Surgeries on peripheral Nerves

SECTION-B

I. Disorders of muscles:

- Muscular dystrophies of adulthood
- The Myotonic disorders
- Inflammatory disorders of muscle
- Myasthenia gravis
- Endocrine and metabolic myopathies
- Duchenne muscular dystrophy
- Progressive muscular dystrophy.

II. Deficiency & Nutritional Disorders

- Deficiency of vitamins & related disorders
- Other nutritional neuropathies

III. Disorders of Autonomic nervous system:

- Bladder and Bowel dysfunction,

- Orthostatic hypotension
- Autonomic dysreflexia
- Autonomic Neuropathy.

IV. Nervous system aging effects and Geriatric neurological disorders

Books suggested

- Cash's textbook of neurology for physiotherapists - Downi - J.P.Brothers.
- Adult Hemiplegia - Evaluation & treatment - Bobath - Oxford Butterworth Heinmann.
- Neurological Rehabilitation - Carr & Shepherd -Butter worth Heinmann.
- Tetraplegia & Paraplegia - A guide for physiotherapist - Bromley – Churchill Livingston
- Neurological Physiotherapy - A problem solving approach - Susan Edwards - Churchill Livingstone.
- Neurological Rehabilitation - Umpherd - Mosby.
- Geriatric Physical Therapy - Gucciona - Mosby.
- Brunnstrom's Movement Therapy in Hemiplegia-Sawner&La Vigne-Lippincott
- Treatment of Cerebral Palsy and Motor Delay-Sophie Levitt
- Motor Relearning Programme for stroke-carr&Shepherd
- Right in the Middle-Patricia M.Davies-Springer
- Brain's Disease of the Nervous System - Nalton - ELBS.
- Guided to clinical Neurology - Mohn & Gaectier - Churchill Livingstone.
- Principles of Neurology - Victor - McGraw Hill International edition.
- Davidson's Principles and practices of medicine - Edward – Churchill Livingstone.
- Physical Medicine & Rehabilitation-Susan Sullivan
- Neurological Rehabilitation-Illus
- Physical Medicine & Rehabilitation-Delsore
- Assessment in Neurology-Dejong.
- Differential Diagnosis-John PatternNeurology in Clinical Practice – Bradley&Daroff
- Neurological Assessment-Blicker staff.
- Steps to follow-PATRICIA M.DAVIES-Springer
- Muscle Energy Techniques-Chaitow-Churchill Living Stone
- Clinical Evaluation of Muscle Function-Lacote- Churchill Living Stone
- Davidson's principles and Practices of Medicine - Edward Churchill Livingstone
- Hutchinson's Clinical Methods – Swash – Bailliere Tindall.
- A Short Textbook of Medicine - Krishna Rao - Jaypee Brothers
- A Short textbook ofPsychiatry_ Ahuja Niraj - Jaypee Brothers.

SPECIALISATION: MUSCULOSKELETAL PHYSIOTHERAPY

(SEMESTER-IV)

Paper Code: MM402

PHYSIOTHERAPY IN VERTEBRAL DISORDERS

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each

SECTION A

- Review of anatomy and pathomechanics of vertebral column
- Application of advance techniques like Maitland, Mckenzie, Mulligan
- Principles of management
- Congenital disorders of vertebral column

- Congenital and Acquired deformities
- Ergonomics
- Non traumatic disorders of vertebral column
 - Degenerative
 - Infections
 - Inflammatory
 - Spinal instabilities

SECTION B

- Traumatic injuries of vertebral column: General & regional injuries.
- Soft tissue injuries, tightness, structural changes.
- Bone injuries (fractures & dislocations of spine)
- pre and post operative management of spinal surgeries.
- Spinal cord injuries
 - Types, Classifications
 - Pathology
 - Level
 - Examination
 - Management & rehabilitation
 - Orthopedic surgeries
 - Bio engineering appliances & support devices
 - Pre & post operative rehabilitation.

Books suggested

- Turek's Orthopaedics: Principles and their Application, Weinstein SL and Buckwalter JA, Lippincott
- Apley's System of Orthopaedics and Fractures , Louis Solomon , Arnold publishers.
- Textbook of Orthopaedics, Adams: Churchill Livingstone
- Clinical Orthopaedic Rehabilitation, Brent Brotzman.
- Orthopaedic Physiotherapy, Robert A Donatelli, Churchill Livingstone.
- Tidy's Physiotherapy, Ann Thomasons ,Varghese publishing House.
- Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Japee brothers
- Textbook of Orthopaedics, John Ebnezar, Japee Brothers.
- Pain Series Rene Calliet., Japee Brothers.
- Essentials of Orthopaedics and Applied Physiotherapy , Jayant Joshi,prakash Kotwal; Churchill Livingstone
- Essential Orthopaedics , J Maheshwari, Mehta Publishers.
- Practical Orthopaedic Medicine , Brain Corrigan, Butterworth.
- Principle and Practice of Orthopaedics Sports Medicine, William E Garrett, Lippincott William and Wilkins.
- Orthopaedic Physical Assessment David J Magee, Saunders
- Manual Examination and Treatment of the Spine and Extrimities , Carolyn Wadsworth, Williams and Wilkins.

- Physical Examination of the Spine and Extrimities , Stenley, Lipenfield.
- Clinical Orthopaedic Examination , Mc Rae, Churchill Livingstone.
- Muscle Energy Technique, Leon chaitow ,Churchill Livingstone.
- Maitland’s vertebral Manipulation , GD Maitland, Butterworth Heinemann.
- Textbook of Orthopaedic Medicine James Cyriax, AITBS Publishers.
- Cyriax’s Illustrated Manual of Orthopaedic Medicine , JH Cyriax, Butterworth
- Position Release Technique, Leon chaitow ,Churchill Livingstone.
- Manual Therapy , Brain Mulligan.
- Butler Neural mobilization , Butler.

SPECIALISATION: SPORTS PHYSIOTHERAPY

(SEMESTER-IV)

Paper Code MS402

Sports Psychology

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- History and current status of Sports Psychology.
 - Personality Assessment and sports personality.
 - Theories of personality
 - Personality assessment
 - Attention and perception in sports.
 - Attention
 - Perception
 - Concentration training in sports.
 - Basic principles of concentration
 - Concentration training
 - Concentration awareness exercises
- V. Motivational orientation in sports.
- Athlete's needs of motivation
 - Motivational inhibitors
 - Motivational techniques
- VI. Pre-competitive anxiety.
1. Source of PCA
 2. Effect of PCA on performance
- VII. Relaxation Training.
1. Definition
 2. Types of relaxation trainings
 - i) Progressive muscle relaxation
 - ii) Breathing exercises
 - iii) Yog-nidra
 - iv) Transcendental meditation
- VIII. Aggression in sports.
1. Theories of aggression
 2. Management of aggression
- IX. Role of Psychology in Dealing with injuries.
- X. Eating disorders.

- a. Etiology of eating disorders
- b. Types of eating disorders
- c. Complications of eating disorders

XI. Goal setting

SECTION B

- Psychological aspect of doping
- Psychological preparation of elite athletes
 - Concept of psychological preparation
- Biofeedback training
- Mental imagery
- Stress management
 1. Principles of Stress Management
 2. Stress Management technique

VI. Group Behaviour and leadership

1. Nature of group behaviour and group.
2. Types of group.
3. Educational implication of group behaviour.
4. Meaning of leadership, types of leadership quality of leadership, training and functioning of leadership.

VII. Emotion

1. Meaning of emotion.
2. Characteristics of emotion.
3. Meaning of controlling and training of emotions and its importance.
4. Contribution of sports to emotional health.
5. Meaning of sentiment, its type, importance and formation.

Books suggested

1. Morgan and King: Introduction to Psychology - Tata McGraw Hill.
2. Suinn: Psychology in Sports: Methods and applications, Surjeet Publications.

3. Grafiti: Psychology in contemporary sports, Prentice Hall.
4. Basmajian: Biofeedback
5. Sanjiv P. Sahni: Handbook of Sports Psychology – A comprehensive manual of Mental Training

SPECIALIZATION : CARDIOPULMONARY PHYSIOTHERAPY

(SEMESTER-IV)

Paper Code: MP402

Physiotherapy in the Intensive Care Unit

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- General management of the critically ill in the Intensive care unit.
- Equipment and monitoring devices used in the unit
- Care of the unconscious patient
- Care of the patients with mechanical ventilation
- Social – psychological impact on patient and family
- Social – psychological impact of ICU work on the physiotherapist
- Special precaution for the following condition during physiotherapy treatment
 - Cardiac disease
 - Congestive heart failure
 - Carbondioxide retention
 - Adult respiratory distress syndrome
 - Plural effusion
 - Pulmonary embolism
 - Hemoptysis
 - Increased Intra cranial pressure

SECTION B

- Physiotherapy management in neonatal I.C.U.
- Management of endotracheal tubes, tracheal suctioning, subclavian lines & chest tubes
- Mechanical Ventilation
- Types of mechanical ventilator.
- Physiological effects
- Indication and contraindication.
- Complication.
- Weaning the patients from ventilation.
- Extubation & post extubation care.
- Symptoms of hypoxia & carbondioxide narcosis.

Books suggested

1. Manual of Cardiac Rehabilitation: Dr. Peeyush Jain & Dr. R. Panda
2. The steps to a healthy heart: Kowalski R.E

3. Medicine: Davidson2. Surgery: Love and Bailey

Paper Code: MN403
CURRENT CONCEPTS IN NEURO PHYSIOTHERAPY

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION – A : Rehabilitation And Therapeutic Exercises:

- Treatment planning process:
 - Classification of treatment techniques based on current concepts & approaches.
 - All types of strengthening techniques.
 - Overview of Neurological Impairments and their treatment, with emphasis on recording and documentation.

- Therapeutic exercises used in neurological disorders.
- Neuromuscular Training
- Methods For Optimizing Neuromuscular & Postural Control : Proprioception Training And Kinesthetic Training (Sensory Integration),
- Problem Solving Approach,
- Motor Control ,
- Clinical Decision Making And Clinical Reasoning,
- Evidence Based Practice.

SECTION-B: Advanced Neuro-therapeutic techniques:

- Muscle Energy Techniques (MET) Reflexology,
- Cranio-sacral therapy,
- Motor learning Theories – Concept, Therapeutic, Positional.
- Myofascial release techniques
- Biofeedback,
- Nerve mobilization (Concept): Butler concept.
- Management of pain and Spasticity and paralysis in neurological disorders
- Special Neurological Approaches and Their Concept:
- Neurodevelopmental Approach,
- Brunnstrom Approach,
- PNF Approach,
- MRP and Inhibition & facilitation techniques.
- Modified CIMT.
- Electrotherapy in Neurological disorders.

Books suggested

- Adult Hemiplegia - Evaluation & treatment - Bobath - Oxford Butterworth Heinmann.
- Neurological Rehabilitation - Carr & Shepherd -Butter worth Heinmann.
- Tetraplegia & Paraplegia - A guide for physiotherapist - Bromley - Churchill Livingstone.
- Neurological Physiotherapy - A problem solving approach - Susan Edwards - Churchill Livingstone.
- Neurological Rehabilitation - Umpherd - Mosby.
- Geriatric Physical Therapy - Gucciona - Mosby.
- Motor Assessment of Developing Infant - Piper & Darrah - W.E. Saunders.
- Paediatric Physical Therapy - Teckling - Lippincott
- Treatment of Cerebral Palsy and Motor Delay - Levins - Blackwell Scientific Publications London.
- Physiotherapy in Paediatrics – Shepherd – Butterworth Heinmann

- Brunnstrom's Movement Therapy in Hemiplegia-Sawner&La Vigne-Lippincott
- Treatment of Cerebral Palsy and Motor Delay-Sophie Levitt
- Motor Relearning Programme for stroke-carr&Shepherd
- Right in the Middle-Patricia M.Davies-Springer
- Physical Medicine & Rehabilitation-Susan Sullivan
- Neurological Rehabilitation-Illus
- Physical Medicine & Rehabilitation-Delsore
- Differential Diagnosis-John PatternNeurology in Clinical Practice – Bradley&Daroff
- Steps to follow-PATRICIA M.DAVIES-Springer
- Muscle Energy Techniques-Chaitow-Churchill Living Stone
- Clinical Evaluation of Muscle Function-Lacote- Churchill Living Stone.

Paper Code: MM403

Current Concepts in Musculoskeletal Physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Pain management
- Back School
- Butler mobilization of nerves
- Manual Therapy: Introduction, History, Basic Classification, Assessment for manipulation, discussion in brief about the concepts of mobilization like
 - Cyriax,
 - Maitland
 - Mulligan

SECTION B

- Myofascial Release: Concept & brief discussion of its application technique
- Muscle Energy Techniques
- Positional release technique
- Body Composition & Weight Control:
 - Composition of human body
 - Somatotyping
 - Techniques of body composition analysis
 - Obesity
 - Health risks of obesity
 - Weight control

Books suggested

- Chest physiotherapy in the Intensive Care Unit, Colin F Meckengei, William and Wilkins.
- Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Japee brothers
- Muscle Energy Technique, Leon chaitow ,Churchill Livingstone.
- Maitland's vertebral Manipulation , GD Maitland, Butterworth Heinemann.
- Textbook of Orthopaedic Medicine James Cyriax, AITBS Publishers.
- Cyriax's Illustrated Manual of Orthopaedic Medicine , JH Cyriax, Butterworth
- Peripheral Manipulation, GD Maitland, Butterworth Heinemann.
- Position Release Technique, Leon chaitow ,Churchill Livingstone.
- Manual Therapy , Brain Mulligan.
- Butler Neural mobilization , Butler

Paper Code MS403

Current Concepts of Sports Medicine

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Exercise and Common Pulmonary Conditions
 - Exercise induced bronchial obstruction
 - Exercise in chronic airway obstruction
 - Air pollution and exercise

- Exercise and Cardiac Conditions
 - Exercise prescription for heart disease
 - Exercise in primary prevention in ischemic heart disease
 - Exercise for secondary prevention of ischemic heart disease
- Diabetes and Exercise
 - Exercise in diabetic patients
 - Exercise as a method of control of diabetes

- Protective equipments design of shoe safety factors in equipment.

- Special concerns for handicapped athletes

- Disability sports, Paralympics

SECTION B

- Exercises for special categories
 - Child and adolescent athlete's problems
 - Special problems of older athletes
 - Sports and exercise programme for geriatrics and rheumatic population
- Doping in Sports
- IOC prohibited drugs- groups and classifications
- IOC rules and regulations on doping in sports hazards of prohibited substances
- **Identification of talent for sports** –
 - Meaning and its importance
 - Detailed procedure for screening and identification of sports talent
 - Prediction of adult potentials at the young age.

Books suggested

1. Morris B. Mellion: Office Sports Medicine, Hanley & Belfus.
2. Richard B. Birrer: Sports Medicine for the primary care Physician, CRC Press.
3. Torg, Welsh & Shephard: Current Therapy in Sports Medicine III - Mosby.
4. Zulunga et al: Sports Physiotherapy, W.B. Saunders.
5. Brukner and Khan: Clinical Sports Medicine, McGraw Hill.

6. Reed: Sports Injuries – Assessment and Rehabilitation, W.B. Saunders.
7. Gould: Orthopaedic Sports Physical Therapy, Mosby.
8. C. Norris: Sports Injuries – Diagnosis and Management for Physiotherapists, Heinmann.
9. D. Kulund: The Injured Athlete, Lippincott.
10. Nicholas Hershman: Vol. I The Upper Extremity in Sports Medicine.
Vol. II The Lower Extremity and Spine in Sports Medicine.
Vol. III The Lower Extremity and Spine in Sports Medicine.
Mosby.
11. Lee & Dress: Orthopaedic Sports Medicine - W.B Saunders.
12. K. Park: Preventive and Social Medicine - Banarsi Dass Bhanot - Jabalpur..
13. Fu and Stone: Sports Injuries: Mechanism, Prevention and Treatment, Williams and Wilkins.
14. Scuderi, McCann, Bruno: Sports Medicine – Principles of Primary Care, Mosby.
15. Lars Peterson and Per Renstron: Sports Injuries – Their prevention and treatment, Dunitz.

Paper Code: MP403

Current Concepts in Cardiopulmonary Physiotherapy

Theory

External Assessment-70

Internal Assessment- 30

Total Marks-100

Pass Marks-50% in each

Time- 3 hrs

INSTRUCTION FOR THE PAPER SETTER

The question paper will consist of three sections i.e. A, B, and C. Section A and B will have four questions each from respective sections of syllabus and will carry 10 marks each. Out of which students have to attempt two questions from each section A and B. Section C will consist of 15 short answers type questions of 2 marks each. This section will cover the entire syllabus uniformly and will carry 30 marks in all.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt two questions each from sections A and B. Section C is a compulsory section consisting of 15 short answer type questions of 2 marks each.

SECTION A

- Role of nutrition in prevention of disease of heart and lung
- Role of physical activity in disease prevention
- Health club & Fitness; the concept behind healthy living
- Current concept in examination & treatment of pulmonary disease
 - Exercise testing and exercise prescription in patients with pulmonary disorders.
 - Current trends in pulmonary rehabilitation.
 - aerobic training
 - Strength training.
 - Exercise progression
 - Program duration
 - Home exercise program
 - Multi specialty team approach
 - Patient education & counseling
 - Work & recreation

SECTION B

I. Role of physiotherapy in pulmonary rehabilitation

1. Physical rehabilitation for ventilatory dependent patients
2. P.T for neonate with respiratory disease
3. P.T for child with respiratory disease
4. Conditioning for children with lung dysfunction

- Current concept in examination& treatment of Cardiac diseases:
 - Exercise testing& Exercise prescription in patients with heart disease
 - cardio pulmonary conditioning.
 - Current trends in cardiac rehabilitation.
 - Contraindications for exercise program
 - Orthostatic hypotension.
 - Home exercise program
 - Strength training& patients with positive exercise tolerance test
 - Conditioning & deconditioning effect
 - Patient education & counseling
 - Work & recreation
- Role of physiotherapy in Cardiac rehabilitation:

1. Philosophy & structure of Cardiac rehabilitation program.

2. Program design for cardiac rehabilitation

a, Inpatient rehab

b. Out patient rehab

c. Safety limits.

Books suggested

1. Manual of Cardiac Rehabilitation: Dr. Peeyush Jain & Dr. R. Panda

2. The steps to a healthy heart: Kowalski R.E

3. Medicine: Davidson2. Surgery: Love and Bailey

4. ELIGIBILITY CRITERIA:

The **admission** to the Master of Physiotherapy course shall be open to those who have passed 10+2 (Physics, Chemistry, English & Biology) and **BPT or equivalent examination** from recognized university with **50% marks in aggregate**.

5.FEE STRUCTURE:

Master of Physiotherapy (MPT)	85000/- (PA)
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6.ANNUAL INTAKE: 30 students.

7. DURATION OF COURSE : 2 years.