

September 2008

[KT 180]

Sub. Code: 2074

M.D. DEGREE EXAMINATION

**Branch XIX – Physical Medicine and Rehabilitation
PHYSICAL MEDICINE AND REHABILITATION – III
RECENT ADVANCES IN REHABILITATION AND
COMMUNITY BASED REHABILITATION**

Common to

**Part II – Paper III – (Candidates admitted upto 2003-2004) and
Paper IV – (For candidates admitted from 2004-2005 onwards)**

Q.P. Code : 202074

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :

(2 X 20 = 40)

1. How will you institute rehabilitation of differently abled children in the Community in two adjacent districts? Out line the methods you will adopt for initial assessment, regular therapy and periodic follow up of these Children.
2. What is Functional Neuromuscular Electrical Stimulation? What are its indications? Discuss the therapeutic and functional use of FES in spinal Cord Injury.

II. Write short notes on :

(10 X 6 = 60)

1. Rehabilitation following replantation of upper limb of the mid-forearm level.
 2. Vestibular rehabilitation.
 3. Splinting the hand.
 4. Disability and rehabilitation as a human rights issue.
 5. Burn rehabilitation.
 6. Palliative care.
 7. Dynamic posturography.
 8. Shock wave therapy.
 9. Recent advances in upper extremity prosthesis.
 10. Types of feet in lower extremity prosthesis.
-

March 2009

[KU 180]

Sub. Code: 2074

M.D. DEGREE EXAMINATION

Branch XIX – PHYSICAL MEDICINE AND REHABILITATION

Part II – Paper III – (Candidates admitted upto 2003-2004) and

Paper IV – (For candidates admitted from 2004-2005 to 2007-2008)

PHYSICAL MEDICINE AND REHABILITATION – III

RECENT ADVANCES IN REHABILITATION AND

COMMUNITY BASED REHABILITATION

Q.P. Code : 202074

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :

(2 x 20 = 40)

1. Give an account of management of osteoporosis.
2. Discuss in detail about rehabilitation of a transtibial amputee.

II. Write short notes on :

(10 x 6 = 60)

1. Sympathetic blocks for pain relief.
2. Dynamic posturography.
3. Legislations in relation to disability.
4. Disability prevention.
5. Environmental control systems.
6. Hormonal basis of menopause.
7. Vesico ureteric reflex.
8. Myositis ossificans.
9. Genetic counseling.
10. ASIA grading.

MAY 2011

[KY 180]

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PHYSICAL MEDICINE AND REHABILITATION – III

RECENT ADVANCES IN REHABILITATION AND

COMMUNITY BASED REHABILITATION

Q.P. Code : 202074

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Discuss the Recent advances in the pharmacological treatment of Spasticity.	11	35	15
2. Describe the merits and demerits of Community based rehabilitation and Institution based rehabilitation.	11	35	15

II. Write notes on :

1. Terminal devices of upper limb prosthesis.	4	10	7
2. International Classification of Function.	4	10	7
3. Radiofrequency neurolysis of facet joint.	4	10	7
4. Biomechanical principles in the design of quadrilateral socket for above knee prosthesis.	4	10	7
5. Proximal focal femoral deficiency.	4	10	7
6. Cruciform anterior hyperextension orthosis.	4	10	7
7. Thermoplastics.	4	10	7
8. Reciprocating gait orthosis.	4	10	7
9. Environmental control devices.	4	10	7
10. Brain plasticity.	4	10	7

APRIL 2012

[LA 180]

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

**PHYSICAL MEDICINE AND REHABILITATION – III
RECENT ADVANCES IN REHABILITATION AND
COMMUNITY BASED REHABILITATION**

Q.P. Code : 202074

Time : 3 hours

Maximum : 100 marks

(180 Min)

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Outcome measures in spinal cord injury and its role in a rehabilitation programme.	16	35	15
2. Formulate a community based stroke rehabilitation programme through a primary health centre.	16	35	15

II. Write notes on :

1. Adaptive devices for independence with dressing.	4	10	7
2. Assessment of Visuo-spatial deficits.	4	10	7
3. Role of video fluoroscopy in swallowing dysfunction.	4	10	7
4. Role of leisure activities in a rehabilitation programme	4	10	7
5. Supported employment in Traumatic brain injury rehabilitation.	4	10	7
6. Advantages & Disadvantages of Observational gait analysis.	4	10	7
7. Components of a Power wheel chair.	4	10	7
8. Types of orthotic knee joints for KAFO. (Knee Ankle Foot Orthosis)	4	10	7
9. Prosthetic prescription for Syme's amputation.	4	10	7
10. Various suspension systems for transtibial prosthesis.	4	10	7

**M.D. DEGREE EXAMINATION
BRANCH XIX – PHYSICAL MEDICINE & REHABILITATION**

**PHYSICAL MEDICINE & REHABILITATION - III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Describe the biomechanics, components and advantages of plastic ankle foot orthosis. Describe the common indications for its use. Add a note on check out. Describe the use of patellar tendon bearing ankle foot orthosis.
2. Describe in details about disability evaluation and its implications in the Indian context.

II. Write notes on:

(10X7=70)

1. Explain biofeed back and its clinical applications
2. Intrathecal baclofen for the treatment of spasticity and its limitations
3. Describe the methods of suspending transfemoral prosthesis
4. Explain the use of assistive technology for hearing impairment
5. Explain the principle and mechanism of dynamic response feet, give examples and mention the indication of its use?
6. Describe the therapeutic use of functional electrical stimulation as an orthotic device.
7. Explain the concept of body weight support ambulation training in spinal cord injury
8. Vocational rehabilitation of patients with spinal cord injury
9. Electrical stimulation systems for management of bladder incontinence
10. Describe the biomechanics of floor reaction orthosis and mention indication of its use.

[LD 180]

OCTOBER 2013

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE & REHABILITATION

PHYSICAL MEDICINE & REHABILITATION - III

**(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe in detail about disability evaluation and its implications in the Indian context.
2. What are the different mechanisms of plasticity of the brain?
Discuss how plasticity is useful in rehabilitation?

II. Write notes on:

(10 x 7 = 70)

1. Describe the methods of suspending transfemoral prosthesis.
2. Explain the use of assistive technology for hearing impairment.
3. Describe the socket designs in transtibial prosthesis.
4. Clinical application of immunoblotting and immunostaining of muscle.
5. Describe the clinical utility of Sphincter electromyography.
6. Explain the principle, indications and technique of spinal cord stimulation to control intractable leg pain.
7. List the indications and procedure of video-urodynamics.
8. Discuss the principle, indications, side effects and complications of vertebroplasty.
9. Define and explain the principle of plyometric exercises.
10. Explain the use of computer aided design in prosthetic fabrication.

(LE 180)

APRIL 2014

Sub. Code:2074

M.D. DEGREE EXAMINATION

BRANCH XIX - PHYSICAL MEDICINE & REHABILITATION

**PHYSICAL MEDICINE & REHABILITATION - III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Recent advances in prosthetic technology that could be utilised in amputee rehabilitation. How will you rehabilitate bilateral above elbow amputee.
2. Recent advances in management of acute cerebro vascular accident.

II. Write notes on:

(10X7=70)

1. Osseointegration in amputee prosthesis.
2. Thermoplastics.
3. Radiofrequency treatment for facet joint pain.
4. Magnetic stimulator in stroke.
5. Urodynamics.
6. Environmental control devices .
7. Telemedicine in rehabilitation.
8. Leaf spring AFO.
9. Motorised hand prosthesis.
10. Multipad electrodes for FES.

M.D. DEGREE EXAMINATION
BRANCH XIX – PHYSICAL MEDICINE & REHABILITATION
PAPER IV – PHYSICAL MEDICINE & REHABILITATION - III
(RECENT ADVANCES IN REHABILITATION AND
COMMUNITY BASED REHABILITATION)

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss the recent advances in lower limb amputee rehabilitation.
2. Discuss the recent advances in rehabilitation of persons with brain injury sequelae.

II. Write notes on: **(10 x 7 = 70)**

1. Canadian Occupational Performance Measure (COPM).
2. Calcitonin for Osteoporosis.
3. Martin Gruber anastomosis.
4. Magnetic Resonance Spectroscopy.
5. Ischial containment socket.
6. Intra thecal baclofen.
7. Vertebroplasty.
8. Obstructive sleep apnoea.
9. Assessment of Dysphagia.
10. Botulinum toxin for neuropathic bladder.

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III

**(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss evaluation of neurogenic bladder following spinal cord injury.
2. Discuss the management of young male with right upperlimb transhumeral amputation and mention the recent advances in this context.

II. Write notes on:

(10 x 7 = 70)

1. Visual evoked potentials.
2. Floor reaction Orthosis.
3. Cyclooxygenase 2 selective inhibitors.
4. Donepezil.
5. Bone mineral density.
6. H reflex.
7. Cognitive behavior therapy.
8. Tethered cord syndrome.
9. Persistent vegetative stage.
10. Double support phase in gait cycle.

(LK 180)

MAY 2017

Sub. Code:2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III

**(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the recent advances in the pharmacological management of spasticity.
2. Describe the recent advances in prosthetic techniques that could be utilized for rehabilitation management of a young active transfemoral amputee?

II. Write notes on:

(10 x 7 = 70)

1. Urethral pressure profile.
2. Control mechanisms of upper extremity prosthesis.
3. Spinal cord stimulation to control intractable leg pain.
4. Vocational rehabilitation of a paraplegic.
5. Infliximab.
6. Halovest.
7. Receptors in the bladder.
8. Brain plasticity.
9. Vertebroplasty.
10. Bionic hands and Neuroprosthesis.

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

**PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P.Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Discuss the recent advances in upper limb prosthetic Rehabilitation.
2. Discuss the advances in the management of neuropathic bladder.

II. Write notes on: (10 x 7 = 70)

1. Vertebro plasty.
2. Magnetic Resonance Spectroscopy.
3. Cognitive Behaviour therapy.
4. Participation restriction.
5. Robotics in Rehabilitation.
6. Surgery for tetraplegic hand.
7. Biomarkers for osteoporosis.
8. Weight relieving orthosis.
9. Environment control devices.
10. Energy storing prosthetic feet.

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)

Q.P. Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Clinical applications of functional electrical stimulation.
2. Discuss the biomechanical principles in the design and fabrication of orthotic devices for the upper limb. Describe various wrist hand orthosis. Write a note on the indications and various upper limb orthotic materials.

II. Write notes on:

(10 x 7 = 70)

1. Suspension systems for lower extremity prosthesis.
2. Robotics in rehabilitation.
3. Assistive technology for communication disorders.
4. Biomechanical principles in the design of quadrilateral socket for above knee prosthesis.
5. Implantable devices for management of neurogenic bladder.
6. Electronic aids to daily living.
7. Advantages and disadvantages of myoelectric and body powered upper extremity prosthesis.
8. Assistive technology for patients with visual impairment.
9. Somatosensory evoked potentials.
10. Muscle imaging.

[LQ 180]

**AUGUST 2020
(MAY 2020 SESSION)**

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

**PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P. Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Discuss the recent advances in the prosthetic considerations during rehabilitation of an above knee amputation patient.
2. Describe the components of wheel chair and discuss in detail the recent advances in wheel chair prescription to improve the functional outcome in a spinal cord injury.

II. Write notes on: (10 x 7 = 70)

1. CAD CAM and 3 D printing
2. Recent pharmacological therapy for OA knee.
3. Prolotherapy
4. Tai Chi
5. Assistive technology for mobility impairments
6. Extracorporeal shock wave therapy
7. CBR in SCI patient
8. Functional electrical stimulation and its applications
9. Spinal orthosis for scoliosis
10. MCI Guidelines for disability assessment for admissions in MBBS course in students with disorders of musculoskeletal system.

[MD 0721]

**JULY 2021
(MAY 2021 SESSION)**

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

**PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)**

Q.P. Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss in detail about CBR.
2. Describe the recent advances in prosthetic techniques that could be utilised for rehabilitation management of a young active trans humeral amputee.

II. Write notes on:

(10 x 7 = 70)

1. ICF (International Classification of Functioning).
2. Reciprocating gait orthosis
3. Radiofrequency neurolysis of facet joint.
4. Blink reflex.
5. Botulinum toxin for neuropathic bladder.
6. Osseo integration prosthesis
7. Explain the uses of CAD in prosthetic fabrication.
8. Muscle imaging.
9. Urethral pressure profile.
10. Splinting the hand.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0522]

MAY 2022

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND COMMUNITY
BASED REHABILITATION)

Q.P. Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the recent advances in the materials used for fabrication of Orthosis and discuss the advances to improve the mobility of the SCI patient at Thoracic level.
2. Define Evidence based medicine and their levels. Discuss the role of Outcome measures in Rehabilitations in relation to ICF Domains.

II. Write notes on:

(10 x 7 = 70)

1. Biomarkers in Traumatic brain Injury.
2. LASER Therapy.
3. Cooled Radiofrequency Ablation Therapy.
4. Heart transplantation.
5. Isokinetic equipment.
6. Newer drugs in the Neurogenic bladder management.
7. Architectural barriers for a thoraco lumbar SCI patient; Urban Vs Rural Challenges.
8. Plyometrics.
9. Bionic Hand.
10. Platelet rich plasma – leucocyte rich/poor.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0723]

**JULY 2023
(MAY 2023 EXAM SESSION)**

Sub. Code: 2074

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

**PAPER IV – PHYSICAL MEDICINE AND REHABILITATION – III
(RECENT ADVANCES IN REHABILITATION AND
COMMUNITY-BASED REHABILITATION)**

Q.P. Code: 202074

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the Community Reintegration following mild to moderate traumatic and non-traumatic brain injury.
2. Outline the various rehabilitation measures for a 70-year-old gentleman with Parkinson's disease. Discuss the use of advanced devices, technologies and drugs for a good outcome.

II. Write notes on:

(10 x 7 = 70)

1. Use of Robotic devices in gait training and balance.
2. Advances in orthosis for Footdrop.
3. Different uses of Botulinum toxin.
4. Advances in wound healing.
5. Upper limb and cognitive training using Virtual Reality and Virtual Augmentation.
6. Vertebroplasty on the osteoporotic spinal vertebra.
7. Low-vision assistive devices.
8. Principles and applications of ICF.
9. Sheltered Workshop.
10. Back School for prevention of back pain. A brief note on the use of Sensors.
