

GUIDELINES FOR COMPETENCY BASED POSTGRADUATE TRAINING PROGRAMME FOR MD IN PHYSICAL MEDICINE AND REHABILITATION (PMR)

Preamble:

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training.

The **goal** of this programme is to standardize Physical Medicine and Rehabilitation (PMR) teaching at the Post Graduate level throughout the so that it will benefit in achieving uniformity in postgraduate medical education.

Physical Medicine and Rehabilitation (PMR), also called physiatry, (pronounced fiz ee at tree), or physical and rehabilitation medicine emphasizes the prevention, diagnosis and treatment of disorders, particularly those of the neuro-musculo-skeletal, cardiovascular, and pulmonary systems, that may produce temporary or permanent activity limitation, disability, or participation restriction. Physical Medicine and Rehabilitation is an independent clinical discipline. PMR has a vast scope as it provides integrated comprehensive care in the diagnosis, treatment and rehabilitation management of neurological, musculo-skeletal, cardio-pulmonary disabilities from acquired or congenital conditions presenting at any stage in life from pediatric to geriatric phases. This specialty focuses on the restoration of function of people to the highest possible level, through a multi-disciplinary team approach, making use of diagnostic and therapeutic armamentarium including education and counseling, prescription of medicines, therapeutic exercises, equipments (mobility aids, orthotic-prosthetic appliances, assistive technology, physical agents and modalities, etc.), injections, surgical interventions for correction of deformities etc. in an institution-based (out-door and in-door/wards/ICUs/Nursing Homes/Old-Age Homes etc.), out-reach (Camps, Mobile Units), or community-based settings (CBR), based on the evaluation of the individual under consideration. It is also involved in disability prevention, evaluation and certification, besides development, monitoring and supervision of a rehabilitation plan and conducting research and development.

The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by subject-content specialists. The Reconciliation Board of the Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of “domains of learning” under the heading “competencies”.

PROGRAMME OBJECTIVES

The overall objective is to impart a thorough and comprehensive training to a medical graduate so that at the end of this training he/she becomes a knowledgeable, skilled, and competent Physical Medicine and Rehabilitation specialist, capable of discharging his/her duties as expected under different settings, in an ethical manner.

The student should be able to suspect, investigate, diagnose, confirm, evaluate, certify, treat, and rehabilitate if and when a person is suffering from a temporary or permanent limitation in function, disability, or restriction in participation; the student should be able to plan, prescribe, supervise and lead the execution of rehabilitation plan through an integrated, multi-disciplinary team involving various medical, nursing, allied health professionals such as therapists (occupational therapists, physiotherapists, speech therapists etc.), counselors, and technicians (orthotic-prosthetic engineers/ technicians). The student should be able to interpret reports and plan research, teach medical and paramedical personnel, educate (1) the person with disability, (2) family, (3) rehabilitation team members and (4) the community. The student should be well versed with recent advances in the field, and with administrative, financial, ethical and legal aspects related to the specialty.

SUBJECT SPECIFIC LEARNING OBJECTIVES

The post graduate student, on completion of the MD training in Physical Medicine and Rehabilitation, should be able to demonstrate the following:

1. **Theoretical knowledge:** The student should be able to demonstrate possession of basic knowledge of (1) the basic medical sciences such as Anatomy, Biomechanics, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Medical Genetics and Molecular Biology etc. as related to Physical Medicine and Rehabilitation; (2) factors which may disturb structure or function and result in disability; (3) bed-side procedures (diagnostic and therapeutic).
2. **Teaching-Training:** The student should be able to plan educational programmes in Rehabilitation Medicine in association with his senior colleagues/Faculty and be familiar with the modern methods of teaching and evaluation; teach and/or deliver lectures to medical students, residents, other health professionals and persons with disabilities and their family members etc. and hold clinical demonstrations for them; write and discuss a topic for seminar or a symposium and critically discuss it; methodically summarise published

articles according to prescribed instructions and critically evaluate and discuss each selected article etc.

- 3. Clinical/Practical skills:** The student should understand and develop competence in executing common general procedures employed in diagnosis, investigations and management of conditions encountered in rehabilitation medicine. He/she should be able to practice and handle independently most of the day to day problems as encountered in Rehabilitation Medicine in a safe, effective and ethical manner. He/she should be able to plan a comprehensive rehabilitation service independently. He/she should be able to demonstrate understanding of the fabrication and competence in prescription and check out of orthoses and prostheses, the principles, prescription and supervision of physiotherapy, occupational therapy, psycho-socio-vocational counseling. He/she should be able to practice rehabilitation medicine at the door step of community. He/she should be familiar with the common problems occurring in the urban, semi-urban, and rural areas and deal with them effectively, should be able to organize, conduct, and supervise surveys in rural, urban and industrial communities and in specified groups of population; organise and conduct camps for disability prevention and rehabilitation of disabled persons, and guide rehabilitation workers at the peripheral level for rehabilitation of persons with disabilities.
- 4. Research:** The student should be able to recognise a research topic, state the objectives in terms of what is expected to be achieved in the end, plan a rational approach with full awareness of the statistical validity, spell out the methodology and carry out most of the technical procedures required for the study, accurately and objectively record on systematic lines the results and observations made, analyse the data using appropriate statistical approach, interpret the observations in the light of existing knowledge and highlight in what ways the study has advanced existing knowledge on the subject and what remains to be done, draw conclusions which should be reached by logical deduction and he should be able to assess evidence both as to its reliability and its relevance, write a thesis in accordance with the prescribed instructions, and be familiar with the ethical aspects of research etc.

SUBJECT SPECIFIC COMPETENCIES

By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as given below:

A. Cognitive domain:

1. Acquire basic knowledge of basic medical sciences such as Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, and Molecular Biology etc. as related to Physical Medicine and Rehabilitation
2. Acquire knowledge on factors which may result in disability
3. Acquire knowledge of basic anatomy and physiology of the musculoskeletal (including Biomechanics), urogenital, cardio-pulmonary and nervous systems
4. Acquire knowledge of basic principles of diagnostic modalities as applied to Physical Medicine and Rehabilitation.
5. Understand philosophy, history, scope and need of Physical Medicine and Rehabilitation.
6. Acquire knowledge of basic concepts in Physical Medicine and Rehabilitation - definitions, rehabilitation team, team members, scope, role and responsibilities of different members.
7. Acquire knowledge of principles of evaluation and rehabilitation management of social problems
8. Acquire knowledge of principles of evaluation and rehabilitation management of vocational problems
9. Understand disability prevention & management- levels and examples
10. Understand epidemiology of disability
11. Understand the outcome measures in Physical Medicine and Rehabilitation
12. Impairment Rating and Disability Evaluation
13. Acquire knowledge of integrative Medicine and Physical Medicine and Rehabilitation
14. Understand Assistive Technology related to Physical Medicine and Rehabilitation
15. Acquire knowledge of basic principles of rehabilitative surgeries
16. Acquire knowledge of Pediatric Rehabilitation including children with Autism Spectrum Disorders, learning disabilities, multiple disabilities etc.
17. Acquire knowledge of Geriatric Rehabilitation
18. Acquire knowledge of Evidence-based Medicine and Physical Medicine and Rehabilitation
19. Understand Legislation in relations to disability- National and International

B. Affective Domain:

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.

3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

C. Psychomotor domain

At the end of the course, the student should acquire the following clinical/practical skills:

Section A:

1. Evaluation Process:
 - History taking in Physical Medicine and Rehabilitation
 - Clinical evaluation, Manual Muscle Strength Testing, Joint Range of Motion, Goniometry, Activities of Daily Living
 - Investigations - Laboratory and Radiological imaging studies including CT Scan, MRI, diagnostic musculoskeletal ultrasound, DEXA Scan etc.
 - Evaluation of neurogenic bowel and bladder dysfunction
2. Gait Analysis - Terminology, types, Clinical Applications
3. Electrodiagnostic Medicine - basic principles, clinical methods, interpretation etc.
4. Outcome Measures in Physical Medicine and Rehabilitation
5. Impairment Rating, Disability Evaluation and Certification

Section B:

6. Therapeutic Exercises- settings, equipments, applications
7. Physical Agents/Modalities - precautions, prescription, application, follow-up etc.
8. Traction, Massage - principles, types, indications, contra-indications, precautions, prescription, application, follow-up etc.
9. Electrical Stimulation - precautions, prescription, application, follow-up etc.
10. Principles and practice of Occupational Therapy
11. Training of A.D.L. (Activities of Daily Living) in various conditions
12. Injection Techniques (e.g. intra-articular, peri-articular, trigger-point, epidural etc.) in Physical Medicine and Rehabilitation
13. Interventions in Physical Medicine and Rehabilitation e.g. Botulinum toxin injection, Phenol block, Alcohol blocks etc.
14. Upper limb orthotic devices including splints- applications
15. Lower limb orthotic devices including footwear modifications- applications
16. Spinal orthoses - applications
17. Upper limb prosthetics and amputee rehabilitation
18. Lower limb prosthetics and amputee rehabilitation

19. Mobility aids, wheelchairs and seating systems
20. Low back pain and Physical Medicine and Rehabilitation
21. Musculoskeletal trauma and Physical Medicine and Rehabilitation
22. Rehabilitation of persons suffering from:
 - Arthritis including Rheumatoid Arthritis, Osteoarthritis, Ankylosing Spondylitis etc.
 - Spinal deformity
 - Neck Pain, Shoulder Pain
 - etc. Osteoporosis
 - Sports Injury
 - Burns Injury
 - Spinal Cord Injury
23. Rehabilitation of persons:
 - with obesity, dyslipidemia etc.
 - after Arthroplasty
 - after POP cast, Fracture treatment, Surgical intervention
24. Basic principles and practice of interventions and rehabilitative surgeries such as deformity correction in poliomyelitis, cerebral palsy, clubfoot, contractures, revision of amputation stump, closure of pressure sore, tendon transfers etc.

Section C:

25. Rehabilitation of persons suffering from:
 - Plexus or Nerve Injury
 - Traumatic Brain Injury Stroke
 - Parkinsonism, Multiple sclerosis, Ataxia, neurodegenerative disorders etc. Neuropathy, Bell's Palsy etc.
 - Hansen's Disease (Leprosy including leprosy-cured persons)
 - diseases of Muscles e.g. myopathy, motor-neuron disease, myasthenia gravis etc.
 - Cerebral Palsy
 - Spasticity, dystonia, rigidity,
 - Poliomyelitis and its sequelae including Post-polio syndrome
 - Cardiovascular Disease e.g. CAD, MI, CABG Surgery, Angioplasty, Heart failure, Cardiac transplantation etc.
 - Pulmonary Disease e.g. COPD, Bronchiectasis, Cystic fibrosis etc.

Cancer

Patients in the ICU setting

Swallowing disorder

Bladder dysfunction

Bowel dysfunction

Vertigo

HIV/AIDS

Chronic Pain

Organ Transplantation

26. Pediatric Rehabilitation including children with Cerebral palsy, muscular dystrophy, Autism Spectrum Disorders, learning disabilities, neural-tube defects, multiple disabilities etc.
27. Geriatric Rehabilitation
28. Principles of evaluation and rehabilitation management of persons with:
 - visual impairment
 - mental retardation
 - hearing /speech impairment
 - psychological problems or mental illness
29. Medical/ surgical Emergencies in Physical Medicine and Rehabilitation
30. Sexuality and Disability

Section D:

31. Evidence-based Medicine and Physical Medicine and Rehabilitation
32. Legislation in relations to disability- National and International
33. Schemes and Benefits extended to persons with disabilities by the Govt.
34. Barrier-free Environment and access related issues
35. Computers in Physical Medicine and Rehabilitation
36. Assistive-technologies in rehabilitation
37. Ethical aspects in disability and rehabilitation
38. Recent Advances related to Physical Medicine and Rehabilitation

Note:

Following topics are expected to cover during 1st, 2nd and 3rd year of residency

First Year of residency: Item number 1 to 11 are expected to cover

Second Year of residency: Item number 12 to 23 are expected to cover

Third Year of residency: Item number 24 to 38 are expected to cover

Syllabus

Course Contents

The course contents for MD (Physical Medicine and Rehabilitation) is divided into four broad sections, covering four theory papers. However, certain degree of overlapping may occur among different sections. The content would include the following:

Section A:

- 1) Basic Anatomy and Physiology of the Musculoskeletal (including Biomechanics), Urogenital, Cardio-pulmonary and nervous systems, etc.
- 2) Basics of biochemical aspects of Calcium and Vit. D metabolism, osteoporosis, diabetes mellitus etc.
- 3) Basic Pathological processes causing diseases and disabilities, healing etc.
- 4) Basic principles of Pharmacology as applied to the conditions encountered in Physical Medicine and Rehabilitation.
- 5) Basic principles of diagnostic modalities as applied to Physical Medicine and Rehabilitation.
- 6) Philosophy, history, scope and need of Physical Medicine and Rehabilitation.
- 7) Basic concepts in Physical Medicine and Rehabilitation - definitions, rehabilitation team, team members, scope, role and responsibilities of different members etc.
- 8) Principles of evaluation and rehabilitation management of social problems
- 9) Principles of evaluation and rehabilitation management of vocational problems
- 10) Organisation and Administration of Physical Medicine and Rehabilitation Services.
- 11) Disability process. Impairment, disability, International Classifications
- 12) Disability Prevention- levels and examples
- 13) Epidemiology of disability, magnitude, causes, changing trends etc.
- 14) Gait Analysis - Terminology, types, Clinical Applications
- 15) Electrodiagnostic Medicine - basic principles, clinical methods, interpretation etc.
- 16) Outcome Measures in Physical Medicine and Rehabilitation
- 17) Impairment Rating and Disability Evaluation

Section B:

- 18) Therapeutic exercises - principles, types, indications, contraindications
- 19) Physical agents/modalities - principles, types, indications, contra-indications, precautions.
- 20) Manipulation, traction, massage - principles, types, indications, contra-indications, precautions.
- 21) Electrical stimulation - principles, types, indications, contra-indications, precautions.

- 22) Principles and scope of Occupational Therapy
- 23) Rationale of A.D.L. (Activities of Daily Living) in various conditions
- 24) Integrative Medicine and Physical Medicine and Rehabilitation
- 25) Upper limb orthotic devices including splints– principles, types, materials and indications,
- 26) Lower limb orthotic devices including footwear modifications– principles, types, materials and indications
- 27) Spinal orthoses – principles, types, materials and indications
- 28) Upper limb prosthetics and amputee rehabilitation,
- 29) Lower limb prosthetics and amputee rehabilitation
- 30) Mobility aids, wheelchairs and seating systems,
- 31) Low back pain and Physical Medicine and Rehabilitation
- 32) Musculoskeletal trauma and Physical Medicine and Rehabilitation
- 33) Holistic Rehabilitation of persons suffering from:

Arthritis, including Rheumatoid Arthritis, Osteoarthritis, Ankylosing Spondylitis etc.

Spinal deformity

Neck Pain, Shoulder Pain

etc. Osteoporosis

Sports Injury

Burns Injury

Spinal Cord Injury (traumatic and non-traumatic)

- 34) Rehabilitation of persons:
 - with obesity, dyslipidemia etc.
 - after Arthroplasty
 - after POP cast, Fracture treatment, Surgical intervention
- 35) Principles of Sports Medicine, diagnosis, evaluation, prevention, and management of sports injuries
- 36) Basic principles of rehabilitative surgeries such as deformity correction in poliomyelitis, cerebral palsy, clubfoot, contractures, revision of amputation stump, closure of pressure sore, tendon transfers etc.

Section C:

- 37) Holistic Rehabilitation of persons suffering from:

Plexus or Nerve Injury

Traumatic Brain

Injury Stroke

Parkinsonism, Multiple sclerosis, Ataxia, neurodegenerative disorders etc. Neuropathy, Bell's Palsy etc.

Hansen's Disease

Diseases of Muscles e.g. myopathy, motor-neuron disease, myasthenia gravis etc.

Cerebral Palsy

Spasticity

Poliomyelitis and its sequelae

Cardiovascular Disease e.g. CAD, MI, CABG Surgery,

Angioplasty, Cardiac transplantation etc.

Pulmonary Disease e.g. COPD, Bronchiectasis, Cystic fibrosis etc.

Cancer

Swallowing disorder

Bladder dysfunction

Bowel dysfunction

Vertigo

HIV/AIDS

Chronic Pain

Neural tube defects like meningomyelocele and hydrocephalus etc.

38) Rehabilitation of persons:

After Organ Transplantation

in ICU setting

39) Pediatric Rehabilitation including children with Autism Spectrum

Disorders, learning disabilities, multiple disabilities etc.

40) Geriatric Rehabilitation

41) Principles of evaluation and rehabilitation management of persons with:

visual impairment

mental retardation

hearing /speech impairment

psychological problems or mental illness

42) Medical/ [surgical](#) Emergencies in Physical Medicine and Rehabilitation

43) Sexuality and Disability

Section D:

44) Evidence-based Medicine and Physical Medicine and Rehabilitation

45) Legislation in relations to disability- National and International

46) Functional evaluation, Impairment rating, disability evaluation

and certification including guidelines for these

47) Schemes and Benefits extended to persons with disabilities by the Govt.

48) Barrier-free Environment and access related issues

- 49) Computers in Physical Medicine and Rehabilitation
- 50) Assistive Technology related to Physical Medicine and Rehabilitation
- 51) Recent Advances related to Physical Medicine and Rehabilitation
- 52) Ethical aspects in rehabilitation
- 53) Research methodology

Note:

Following topics are expected to cover during 1st, 2nd and 3rd year of residency

First Year of residency: Item number 1 to 24 are expected to cover

Second Year of residency: Item number 25 to 37 are expected to cover

Third Year of residency: Item number 38 to 53 are expected to cover

TEACHING AND LEARNING METHODS

Post-Graduate Training:

A. Theoretical Methodology:

1. Symposia/Seminars:

The post graduate student would be required to present topics to the combined group of teachers and students. A free discussion would be encouraged in these activities. The topics of the symposia/seminars would be given to the residents with the dates for presentation.

The topics for Seminars could include any of the following: Gait Analysis, Spasticity, Pressure Sores, Spinal Orthoses, Hand Splints, Assistive Technology, Psycho-Social-Vocational Aspects, Cardiac Rehabilitation, Pulmonary Rehabilitation, Neuro-developmental Techniques, Post-Polio Syndrome, Cognitive Rehabilitation, Prosthetic Feet, PTB Prosthetic, Prosthetic Terminal Devices, CAD-CAM, FES, Spinal Deformities, Rehabilitation after Arthroplasty, Epidemiology of Disability, Barrier-free Environment, Ethical Aspects, Legislation related to Disability and Rehabilitation, Community-Based Rehabilitation, Leprosy Rehabilitation, Sexuality and Disability, Rehabilitation related to HIV/AIDS, Stem Cell Therapy in Rehabilitation, Geriatric Rehabilitation, Sports Injuries Rehabilitation, Rehabilitation after Organ Transplantation, Pain Management, Analgesics, NSAIDs, DMARDs, Disability Evaluation, Interventions in Physical Medicine and Rehabilitation etc.

2. Journal Club:

This should be a regular/weekly activity. The post graduate student would be assigned /allowed to chose an article from amongst the recent publications from the list of recommended journals, present, summarise, and discuss the published article critically. The contributions made by the article in furtherance of the scientific knowledge as well as limitations (if any) should be highlighted.

3. Practical and Clinical Training:

Clinical:

The student would be attached to a Faculty member to be able to pick up methods of history taking and examination in rehabilitation practice. During this period, the student would also be oriented to the common problems that present in the OPD or Wards/ICUs or are encountered in the community. The student would be supervised by Senior Residents and Faculty members.

Bedside:

The student would work up cases; learn management of cases by discussion with the senior residents and faculty of the department. She/he would be trained in management of in-patients including performing certain procedures such as debridement, Plaster cast application, traction, catheterization, intubation etc.

Rehabilitative Interventions and Surgery:

The student would be provided with an opportunity, as far as possible, to observe, learn, assist and once proficient, perform rehabilitative surgical operations such as for correction of deformities in polio, cerebral palsy, amputation, clubfoot, pressure sore etc. including post-operative care with the assistance of the Senior Residents and/or under the direct supervision of a Faculty member.

The student would also be oriented to the various sections/units in a comprehensive rehabilitation set up (such as occupational therapy, orthotics-prosthetics, physiotherapy, social works, clinical psychology, vocational guidance/counseling, educational institution and Non-Governmental Organization in the disability sector etc.) and be well informed about and demonstrated the various equipments/materials/methods used there, and the scope, role and responsibilities of different members of a rehabilitation team.

4. Training in Research Methodology

The student would carry out the research project and write a thesis. Thesis topic would be finalized by the student in consultation with the Guide and Co-Guides, as per the norms duly approved by the Ethics Committee of the Institution. He would also be given exposure to partake in the research projects going on to learn their planning, methodology and execution to learn various aspects of research.

4. Training in Research Methodology

The student would be given exposure to partake in the research projects going on to learn their planning, methodology and execution to learn various aspects of research.

5. Teaching Skills

The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

6. Continuing Medical Education Programmes (CME)

At least two CME programmes should be attended by each student in 3 years.

7. Conferences

The student should attend courses, conferences and seminars relevant to the speciality.

8. Case presentation, case work up, case handling/management (once a week)

9. Attending clinical grand rounds / clinic-pathological conference

The post graduate students are encouraged to attend lectures and grand rounds of other clinical and basic science departments of the hospital.

10. Paper/poster presentation:

A post graduate student of a post graduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.

11. Teaching skills:

The post graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

12. A **logbook** should be maintained recording the duration of posting, the period of absence, if any, skills performed, and remarks if any by the teacher/faculty member. The logbook should also record journal clubs, seminars attended and partaken as well as undergraduate teaching activities the post graduate student has participated and should be signed by the faculty in charge.

13. Department should encourage e-learning activities.

During the training programme, patient safety is of paramount importance, therefore skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of surgical skills laboratories in medical colleges is mandatory.

ASSESSMENT

FORMATIVE ASSESSMENT i.e., assessment during the training

Note:

- 1. On 3rd Thursday of every 3rd month there will be a theoretical assessment of all students**
- 2. On 4th Thursday of every month there will be an assessment of log book, seminar/case presentation/journal club and thesis progress report of all students through Mini CEX score system or similar scoring system**

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.

Quarterly assessment during the MD training should be based on:

1. Journal based / recent advances learning
2. Patient based /Laboratory or Skill based learning
3. Self directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and Outreach Activities / CMEs

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT, ie., at the end of training

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The examination shall be in three parts:

1. Thesis

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A post graduate student shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. Theory Examination:

There shall be four papers each of three hours duration. Each paper shall consist of two long essay questions, three short essay questions and four short notes. These are:

- | | |
|-------------------|---|
| Paper I: | Basic Sciences and Basic Concepts as applied to Physical Medicine and Rehabilitation |
| Paper II: | Principles and Practice of Physical Medicine; and Rehabilitation Management of Musculoskeletal Conditions |
| Paper III: | Principles and Practice of Rehabilitation Management of Neurological, Cardio-pulmonary and other Conditions |
| Paper IV: | Legislation, Recent Advances as applied to Physical Medicine and Rehabilitation |

3. Clinical / Practical and viva voce Examination

The emphasis would be on the Objective Structured Clinical Examination (OSCE). Practical examination would be conducted as per following:

Long Case - One

Short Cases – Three

Viva-Voce involving

PMR related X-Ray/CT Scan/MRI /Bone Scan Films

Rehabilitation Surgery Instruments

Physical Medicine Instruments/Equipments/Modalities

Orthotic-Prosthetic Appliances

OSCE Based Examination Scheme for MD (PMR) Examinations

Oral/Viva voce examination shall be in the following areas:

Item

- i. PMR related X-rays, US Scan, CT Scan, MRI, EMG/NCV reports etc.
- ii. PMR related Surgical Instruments
- iii. Prosthetic and Orthotic devices
- iv. Physical Medicine Instruments/Equipments

Please see Annexure 1 for pattern of marking for practical examinations.

Recommended Reading

The list is indicative only, and not exhaustive.

Books (latest edition)

1. Braddom RL. Physical Medicine and Rehabilitation, Saunders
2. DeLisa JA. Rehabilitation Medicine: Principles and Practice. Lippincott
3. Rusk HA. Rehabilitation Medicine. CV Mosby
4. Helander E, Mendis P, Nelson G, Goerd A. Training in the Community for People with Disabilities WHO, Geneva.
5. Helander E. Prejudice and Dignity - An Introduction to Community-Based Rehabilitation. UNDP.
6. Solomon L. Apley's System of Orthopaedics and Fractures. Arnold London
7. Fauci, Braunwald, Kasper, Hauser et al. Harrison's Principles of Internal Medicine McGraw-Hill Company
8. Steven Kirshblum, Denise I Campagnolo. Spinal Cord Medicine, Lippincott Williams & Wilkins
9. Vernon W Lin. Spinal Cord Medicine - Principles and Practice. Demos

Journals

Three international and two national journals (all indexed)

**Postgraduate Students Appraisal Form (Suggested)
Clinical Disciplines**

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM.....TO.....

Sr. No.	PARTICULARS	Not Satisfactory			Satisfactory			More Than Satisfactory			Remarks
		1	2	3	4	5	6	7	8	9	
1.	Medical Knowledge										
2.	Patient Care including documentation										
3.	Procedural/ Surgical Skills										
4.	Professionalism										
5.	Ethical Behavior										
6.	Self Directed Learning										
7.	Participation in Departmental Learning/Teaching activities										
8.	Thesis / Research work										
9.	Log Book Maintenance										
10.	Journal Club										

Participation and presentation during Conference/Workshop/CME Yes/ No

Publications Yes/ No

Remarks* _____

***REMARKS:** Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE

SIGNATURE OF CONSULTANT

SIGNATURE OF HOD

Thesis Assessment Form (Suggested)

Title of Thesis:					
Name of Student:					
S. No.	Section	Details	Adequate	Marginal	Inadequate or Not Included
1	Title	Appropriateness			
		Clarity and Brevity			
		Focus on Topic (does it raise interest in the reader)			
2	Introduction	Purpose of Study			
		Mention of Lacunae in Current Knowledge			
		Hypothesis, if any			
3	Review of Literature	Relevance			
		Completeness			
		Is it current and up – to – date			
4	Methods	Mention of Type of Study (Prospective, Retrospective, Controlled, Double Blind, etc.)			
		Detail of Subjects and Controls			
		Detail of Materials (Apparatus) Experimental Design			
		Procedure used for data collection (Questionnaire)			
		Statistical methods employed, level of significance considered			
		Statement of Limitation			
		Mention of Ethical Issue involved			
5	Results	Adequacy, Representation			
6	Discussion	Evaluation of Hypothesis, Results present and past direction			
7	Summary and Conclusion	Relevance to Needs and Present Times			
8	References				
Signature of Examiner		Signature of Examiner		Signature of Examiner	