

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

[LO 153]

MAY 2019

Sub. Code: 8153

MPT DEGREE EXAMINATION
(Common to all Branches)
(Regulations for the candidates admitted from 2018-2019 onwards)
FIRST YEAR
PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define Central tendency. Explain measures of Central tendency with examples. Add a note on Merits, Demerits and Limitations of Central tendency.
2. Explain the Kinetics, Kinematics and Pathomechanics of Lumbar spine. List the common Ergonomic advice given for Lumbar spine.

II. Write notes on:

(10 x 6 = 60)

1. History of Ergonomics.
2. Job site analysis.
3. Pathomechanics of Peripheral nerves.
4. Exercise guidelines for Type I Diabetics.
5. Energy delivery and utilization in Musculoskeletal system.
6. Factors influencing Body Mass Index.
7. De-conditioning.
8. Principles of Assessment.
9. Clinical Demonstration.
10. Role of a Physiotherapy Council.

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

[LP 153]

OCTOBER 2019

Sub. Code: 8153

MPT DEGREE EXAMINATION
(Common to all Branches)
(Regulations for the candidates admitted from 2018-2019 onwards)
FIRST YEAR
PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define Biostatistics. Describe the Statistical Data Analysis in detail.
2. Define Curriculum development. Describe the Curriculum determinants, process and steps of Curriculum development.

II. Write notes on:

(10 x 6 = 60)

1. Sampling design Errors.
2. Stair Gait.
3. Pathomechanics of Hand.
4. Biomechanical examination of Tibial torsion.
5. Young's Modulus.
6. Principles of Ergonomics.
7. Workers functional capacity assessment.
8. Energy transfer during exercise.
9. Physical fitness test.
10. Sport diving.

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

[LQ 153]

NOVEMBER 2020
(MAY 2020 SESSION)

Sub. Code: 8153

MPT DEGREE EXAMINATION
(Common to all Branches)
(Regulations for the candidates admitted from 2018-2019 onwards)
FIRST YEAR
PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Write an essay on altered biomechanics of the degenerative conditions.
2. Different types of Data Collection. Give a note on most appropriate type of data collection in physiotherapy practice.

II. Write notes on:

(10 x 6 = 60)

1. Domains of learning.
2. Job analysis.
3. Nutation and counter nutation.
4. Energy expenditure during walking and running.
5. Review of Literature.
6. Methods of Sampling.
7. Kinetics of Patello Femoral joint during Squat Exercise.
8. Injury prevention and Ergonomics.
9. Micro teaching.
10. Characteristics of skeletal muscle fibers.

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

[MPT 0321]

**MARCH 2021
(OCTOBER 2020 SESSION)**

Sub. Code: 8153

**MPT DEGREE EXAMINATION
(Common to all Branches)
FIRST YEAR**

(Regulations for the candidates admitted from 2018-2019 onwards)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the arthrokinematics of the knee joint and details about patella femoral joint reaction force.
2. Explain about the Basic principles and methods of Research design. Add note of experimental and non-experimental design.

II. Write notes on:

(10 x 6 = 60)

1. Aerobic power training.
2. Injury prevention.
3. Gait Evaluation.
4. High Altitude training.
5. Vital statistics.
6. Delayed onset of Muscle soreness.
7. Role of arm in maintaining in body equilibrium.
8. Open kinematic chain.
9. Pathomechanics of high arch foot.
10. Test of significance.

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

[MPT 0921]

**SEPTEMBER 2021
(MAY 2021 EXAM SESSION)**

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from 2018-2019 except 2020-2021)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain in detail about the relationship of respiration to the spinal column.
2. Importance of data collection? Explain in detail about sources, methods and types of data collection in research.

II. Write notes on:

(10 x 6 = 60)

1. Publishing physiotherapy research.
2. Overtraining syndrome.
3. Dash diet.
4. Theories of teaching and learning.
5. Exit assessment.
6. Pathomechanics of Lordosis.
7. Stability of Wrist joint.
8. Back Care programme.
9. Open kinematic chain exercise.
10. Work place Analysis.

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

[MPT 0222]

**FEBRUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from 2018-2019 including 2020-2021)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code : 278153

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define research variables. Explain in detail about types, reliability – validity and specificity – sensitivity.
2. Explain in detail about muscle mechanics in static conditions of the hip joint equilibrium.

II. Write notes on:

(10 x 6 = 60)

1. Pathomechanics of scoliosis.
2. Cardiovascular adaptation with aerobic exercise training.
3. Ergonomics and injury prevention.
4. Importance of plyometrics.
5. Sampling Techniques.
6. Energy transfer in fast and slow twitch muscle fibers.
7. Neuro muscular fatigue.
8. Worker functional capacity assessment.
9. Implementing the projects.
10. Curriculum research in physiotherapy.

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

[MPT 0622]

**JUNE 2022
(MAY 2022 EXAM SESSION)**

Sub. Code: 8153

**MPT DEGREE EXAMINATION
FIRST YEAR - (Regulations for the candidates admitted from 2018-2019)
PAPER I – APPLIED BASIC SCIENCES
*Q.P. Code : 278153***

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain biomechanics in Gait. Add a note on pathological Gait.
2. Detail in Systems of energy delivery and utilization.

II. Write notes on:

(10 x 6 = 60)

1. Difference between a literature review and a summary of the literature.
2. Pathomechanics Quadratus Lumborum.
3. Concave Convex Rule.
4. Competency-based education.
5. Postural Examination
6. Role of Industrial Physiotherapy.
7. Special aids for Performance enhancement.
8. Role of Indian Physiotherapy Council.
9. Biomechanism of ACL.
10. Types of Joint Displacement.

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

[MPT 0523]

MAY 2023

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from the academic year 2018-2019)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code: 278153

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the role of Physiotherapist in industrial set up. Add a note of work plan for computer operators.
2. Discuss about biomechanics and pathomechanics of Vertebral column.

II. Write notes on:

(10 x 6 = 60)

1. Tool of measurement in physiotherapy research.
2. Hallux valgus.
3. Energy expenditure during skeletal muscle work.
4. Quantitative research.
5. Ground reaction forces.
6. Exercise at different altitudes and various climatic conditions.
7. Stability of wrist joint.
8. Thermoregulation in heat stress.
9. Pathomechanics of foot drop.
10. Ergonomic team.

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

[MPT 1223]

**DECEMBER 2023
(OCTOBER 2023 EXAM SESSION)**

Sub. Code: 8153

MPT DEGREE EXAMINATION

**FIRST YEAR - (Regulations for the candidates admitted from the academic year 2018-2019)
PAPER I – APPLIED BASIC SCIENCES**

Q.P. Code: 278153

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail about Biomechanics and Pathomechanics of Shoulder Joint.
2. Explain in detail about the sources and uses of Review of Literature in Research.

II. Write notes on:

(10 x 6 = 60)

1. Biomechanical Examination of Foot.
2. Injury prevention and Ergonomics.
3. Doping.
4. Publishing and Presenting the Research.
5. Nutation and Counter Nutation.
6. Acclimatization.
7. Job Simulation.
8. Prehension.
9. Obesity and Weight Control.
10. Pathomechanics of Knee Joint.

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

[MPT 0524]

MAY 2024

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from the academic year 2018-2019)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code: 278153

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss about exercise at different altitudes and various climatic conditions.
2. Explain in detail about the functional adaptation of bone under pathological conditions.

II. Write notes on:

(10 x 6 = 60)

1. Sampling Methods.
2. Pathomechanics of Ankle Joint.
3. Nutrition and Performance.
4. Work Hardening Programme.
5. Importance of Reliability and Validity in Research Process.
6. Closed Kinetic Chain.
7. Special Aids.
8. Back Care Programme for Industrial Workers.
9. Hypothesis Testing.
10. Precompetition Meal.

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

[MPT 1024]

OCTOBER 2024

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from the academic year 2018-2019)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code: 278153

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define research problem. Discuss the main issues, which should receive the attention of the researcher in formulating a research problem.
2. Discuss the mechanics and Pathomechanics of cervical spine. Add a note on ergonomic advice given for cervical spine.

II. Write notes on:

(10 x 6 = 60)

1. Central tendency.
2. Principles of exercise for Endurance Training.
3. Ethical issues in physiotherapy.
4. Lumbar pelvic rhythm.
5. Role of physiotherapy in industrial set up.
6. Deconditioning.
7. Energy transfer.
8. Physical fitness test.
9. Aging.
10. Current trends in education.

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

[MPT 0525]

MAY 2025

Sub. Code: 8153

**MPT DEGREE EXAMINATION
FIRST YEAR - (Candidates admitted 2018-2019 onwards)
PAPER I – APPLIED BASIC SCIENCES**

Q.P. Code: 278153

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about the Basic Principles and Methods of Research Designs.
2. Describe in detail about Pathomechanics of Hip Joint.

II. Write notes on:

(10 x 6 = 60)

1. Job Analysis.
2. Role of arm in maintaining body equilibrium.
3. Principles of Exercise Training.
4. Report Writing in Research.
5. Theories of Pain.
6. Integrated Functions of Gait.
7. Aerobic Power Training.
8. Measures of Central Tendency.
9. Pathomechanics of Antalgic Gait.
10. Energy delivery and utilization in endocrine system.

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

[MPT 1025]

OCTOBER 2025

Sub. Code: 8153

MPT DEGREE EXAMINATION

FIRST YEAR - (Regulations for the candidates admitted from the academic year 2018-2019)

PAPER I – APPLIED BASIC SCIENCES

Q.P. Code: 278153

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss the Dynamics of Shoulder Complex and Pathomechanics of Paralytic Shoulder.
2. Define Sampling. Write in details about the principles, methods, design and process of Sampling.

II. Write notes on:

(10 x 6 = 60)

1. Effects of regular exercise on cardiovascular system.
2. Micro teaching.
3. Survey research.
4. Work hardening program.
5. Physical fitness test.
6. Self evaluation.
7. Types of muscle fibre.
8. Exercise and aging.
9. Role of Physiotherapy in Industrial set up.
10. Balance and equilibrium.
