APRIL - 2001

[KD 700]

M.P.T. DEGREE EXAMINATION.

First Year

Paper I — BASIC SCIENCES

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss the Biomechanics of normal and abnormal thoracic cage. What measures be advised to maintain normal motion and physiology to patients with restrictive disease?

2. Discuss the ethical rules of physiotherapy and describe the differences between behaviour that agrees with code of ethics and behaviour that is value based in physiotherapy practice.

3. Discuss the principles of exercises for

   (a) Obesity

   (b) Body building

   (c) Endurance training

4. What is hypothesis? How can they be tested? How are risks in hypothesis testing determined? Explain with examples.

5. Analyse arthrokinematics and osteokinematics. How exercise can be prescribed to increase range of motion of the above on the basis of its anatomy and mechanics?

NOVEMBER - 2001

[KE 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT)
DEGREE EXAMINATION.

First Year

Paper I — BASIC SCIENCES

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. Describe Biomechanically the changes that have taken place at the joints and muscles of the thumb during evolution of man.

2. List the tests commonly used to assess Aerobic Fitness. Discuss any four in detail.

3. Define Statistics. Describe its characteristics. Discuss the application of statistics in research.

4. Define Formal and Informal methods of education. Compare the two for advantages and disadvantages.

5. Classify exercise based on the source of energy used for muscle contraction. Discuss how the two forms of exercise will vary from each other mechanically.

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MARCH - 2002

[KG 700] **Sub. Code : 8101**

MASTER IN PHYSIOTHERAPY (MPT)
DEGREE EXAMINATION.

First Year

(Revised Regulations)

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Section A and B should be written in separate main answer book.

Answer ALL questions.

All questions carry equal marks.

SECTION A

1. Define Statistics. Describe its characteristics. Discuss application of Statistics in research. (20)

SECTION B

2. Analyse Biomechanically the hip joint in static and dynamic situations. Discuss the Ergonomic measures taken in pathological conditions of Hip. (20)

3. Enumerate different procedures used for strength training and endurance training. Compare and contrast the two methods of Training. (20)

4. Outline the philosophies of education in India. Compare the philosophies of past with present. (20)

5. Define Isokinetic form of exercise. Describe anatomically and mechanically how it varies from isotonic exercise. (20)

SEPTEMBER - 2002

[KH 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

First Year

(Revised Regulations)

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Section A and B should be written in separate main answer book.

Answer ALL questions.

All questions carry equal marks.

SECTION A

1. Identify the type of data collection and which one is best suited for today. (20)

SECTION B

2. Discuss kinetics and kinematics of cervical spine. Describe the effects of ageing and injury on the kinetics and kinematics of cervical spine. List the common ergonomic advice given for cervical spine. (20)

3. Define health. Elaborate all components of health in detail. (20)

4. Outline the ethics of physiotherapy practice. Discuss the importance of having an ethical code for practice. (20)

5. List the different types of movements. Compare mechanically how each of them are different from the other. (20)

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APRIL - 2003

[KI 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

First Year

(Revised Regulations)

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Section A and B should be written in separate main answer book.

Answer ALL questions.

All questions carry equal marks.

SECTION A

1. Describe basic concepts of statistics and principles of scientific enquiry in analysing results of physiotherapy practice. (20)

SECTION B

2. Write an essay on altered biomechanics of the degenerative conditions. (20)

3. Is code on ethics important for a profession? Discuss in detail the ethical consideration in physical therapy practice at your clinic. (20)

4. Write on relevance of "Body Composition Analysis" to physical therapy. (20)

5. Give the importance of Anatomic and mechanical consideration for exercises. Discuss the above in relation with isokinetic and isoinertial contractions. (20)

OCTOBER - 2003

[KJ 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

First Year

(Revised Regulations)

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Sections A and B should be written in SEPARATE Main Answer Book.

M.C.Q. must be answered **SEPARATELY** on the answer sheet provided as per the instructions on the first page.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

1. Describe vital and health statistics and its use in practise of physiotherapy. (15)

SECTION B

2. Describe the biomechanical differences between Bent-Knee and straight leg sit up. (15)

3. Short notes : (10 × 5 = 50)

1. Moment-angular velocity relationship in passive stretching.

2. Parameters required to describe the orientation and motion of body segment.

3. Performance appraisal.

4. Extrinsic and intrinsic factors that predispose to impingement syndrome.

5. Ballistic resistance training.

6. Trabecular system.

7. Various strategies of maintaining balance and equilibrium.

8. Factors associated with neuromuscular fatigue.

9. Relationship of cervical spine and temporomandibular joint.

10. Isotonic exercises.

APRIL - 2004

[KK 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

First Year

(Revised Regulations)

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer ALL the questions.

Draw diagrams wherever necessary.

Figures to the right indicate marks.

A. Essay questions : (1 × 15 = 15)

(1) Explain the sources and methods of collecting data, briefly write about the role of statistics in physiotherapy.

(2) Describe the pathomechanics of paralytic and traumatic hip disorders.

B. Short notes : (10 × 5 = 50)

(1) Glenohumeral rhythm

(2) Pelvic obliquity

(3) Tibial torsion

(4) Windlas effect

(5) Foot movements and axes

(6) Pathomechanical changes following tibialis anterior paralysis

(7) Pathomechanical changes following isolated vastus medialis paralysis

(8) Fatigue fracture of bones

(9) Beam and column theory

(10) Mechanics of skeletal muscles.

AUGUST - 2004

[KL 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Section A and B should be written in SEPARATE main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A — (1 × 15 = 15 marks)

I. Essay :

(1) Discuss basic concepts of statistics and principle of scientific enquiry in evaluating the results of physiotherapy practice.

SECTION B — (1 × 15 = 15 marks)

II. Essay :

(1) Describe the kinetics and kinematics of foot and ankle during gait. Add a note on "Triplane motion of ankle and foot.

III. Short notes : (10 × 5 = 50)

(a) Sources of Health statistics.

(b) Contra indications for manipulation.

(c) Medial tibial stress syndrome.

(d) Literature review.

(e) Principles of isokinetic conditioning program.

(f) Advantages of bicycle ergometry in stress testing.

(g) Paralytic hip dislocation.

(h) Effects of load on Tendon.

(i) Ligamental stabilization of elbow joint.

(j) Various strategies in maintaining balance and equilibrium.

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FEBRUARY - 2005

[KM 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Section A and B should be written in SEPARATE main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

I. Essay : (1 × 15 = 15)

(1) Find out the regression equation of systolic blood pressure (u) on age (x) using the following data :

Age	:	35	45	55	65	75
Systolic BP	:	118	136	148	160	166

Estimate the blood pressure when the age is 50 yrs.

II. Short notes : (1 × 5 = 5)

(a) Coefficient of Variations.

SECTION B

I. Essay : (1 × 15 = 15)

(1) Analyse the static forces operative upon the femur and discuss the patho-mechanics of Coxa Valga.

II. Write short notes on : (9 × 5 = 45)

(a) Effect of muscular tension on Gravitational stress in bone.

(b) Volkman's ischaemic contracture.

(c) Paralysis of extensors of hip.

(d) Paralysis of quadriceps.

(e) Patho Kinetics of flat foot.

(f) Patho mechanics of paralysis of deltoid.

(g) Sprain of medial meniscus.

(h) Sprain of Talonaricular joint.

(i) Contractures.

AUGUST - 2005

[KN 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours — Maximum : 100 marks

Sec. A & B : Two hours and forty minutes — Sec. A & B : 80 marks

M.C.Q. : Twenty minutes — M.C.Q. : 20 marks

Section A and B should be written in **SEPARATE** main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

I. Essay : (1 × 15 = 15)

Explain the quantitative and qualitative data.

II. Short notes : (1 × 5 = 5)

Nominal scale.

SECTION B

III. Essay : (1 × 15 = 15)

Discuss the pathomechanics of muscle function and contracture.

IV. Write short notes on : (9 × 5 = 45)

(a) Mechanics of Menisci.

(b) Volkman's ischaemic contracture.

(c) Mertins syndrome.

(d) Physical properties of ligaments and tendons.

(e) Ligamentous reinforcements of hip joint.

(f) Rupture of quadriceps.

(g) Pathomechanics of paralysis of deltoid.

(h) Role of arms in maintaining body equilibrium.

(i) Pathomechanics of flail elbow.

MARCH 2006

[KO 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Section A and B should be written in **SEPARATE** main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

I. Essay : (1 × 15 = 15)

(1) How will you differentiate between descriptive statistics and inferential statistics? Describe the important statistical measures often used to summarize Survey/Research data.

SECTION B

II. Essay : (1 × 15 = 15)

(1) Compare the structure of typical cervical vertebra with the structure of a typical thoracic and typical lumbar vertebra.

III. Short notes : (10 × 5 = 50)

(a) Audio – visual aids

(b) Sampling methods

(c) Review of literature

(d) Onset of Blood-Lactate Accumulation (OBLA)

(e) Scaphoid – Lunate complex

(f) Ethical issues in physiotherapy

(g) Toe region

(h) Lumbar – pelvic rhythm

(i) Factors affecting sustained physical work

(j) Transalatory effect of the force of gravity.

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SEPTEMBER 2006

[KP 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes Theory : 80 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Section A and B should be written in **SEPARATE** main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

I. Essay :

(1) What is a research problem? Define the main issues which should receive the attention of the researcher in formulating a research problem. Give suitable examples to elucidate your points. (15)

II. Short note : (5)

Relationship between Teaching and Learning.

SECTION B

III. Essay :

(1) Describe the configuration of the humerus and the glenoid fossa as they relate the Gleno-Humeral joint stability. What role do glenoid labrum and joint capsule play in joint stability? (20)

(2) Explain the pathomechanics of osteo authrosis of knee joint. Give an account of orthotic and surgical management for the relief of symptoms. (15)

IV. Short notes : (5 × 5 = 25)

(a) Location of center of Gravity

(b) Structures that limit sup nation and pronation in the elbow complex.

(c) Medico - legal aspects in physiotherapy.

(d) Anatomical and mechanical axis of knee joint

(e) "Bohr effect" and its benefit during physical activity.

FEBRUARY 2007

[KQ 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Time : Three hours **Maximum : 100 marks**

Theory : Two hours and forty minutes **Theory : 80 marks**

M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

Section A and B should be written in SEPARATE main Answer Book.

Answer ALL questions.

Draw suitable diagrams wherever necessary.

SECTION A

I. Essay :

(1) Faculty development and development of personnel for physiotherapy services. (15)

II. Short note :

(1) Use of statistics method in physiotherapy. (5)

SECTION B

III. Essay :

(1) Discuss the dynamics of the shoulder complex and pathomechanics of paralytic shoulder. (20)

(2) Discuss about the Nutrition and Physical performance. (15)

IV Short notes : (5 × 5 = 25)

(a) Mechanics of tibial torsion

(b) Role of physiotherapy in industrial set up

(c) Malpractice

(d) Anaerobic threshold

(e) Continuous Vs Intermittent exercise training methods.

MARCH 2008

[KS 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Q.P. Code : 278101

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Long Essay : (2 × 20 = 40)

1. (a) Principles and methods of research designs. (15)

(b) Evaluation of the physiotherapy students. (5)

2. Discuss the architecture of the femur and muscle dynamics of the hip joint. (20)

II. Short notes : (10 × 6 = 60)

1. Lactate production and its effects.

2. PT department management – policies and procedures.

3. Negligence.

4. Stability of patellofemoral joint.

5. Ribcage movements and its pathomechanics.

6. Steps in research process.

7. Meaning and characteristics of good hypothesis.

8. Significance of research design.

9. Windlass effect.

10. Doping.

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September 2008

[KT 700] **Sub. Code : 8101**

MASTER OF PHYSIOTHERAPY (MPT) DEGREE EXAMINATION.

(Revised Regulations)

First Year

Paper I — BASIC SCIENCE

Q.P. Code : 278101

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Long Essay : (2 × 20 = 40)

1. Curriculum planning and development for a Undergraduate Physiotherapy Programme. (20)

2. Discuss the Factors affecting the stability and mobility of Ankle and foot and its pathomechanics of muscle paralysis. (20)

II. Short notes : (10 × 6 = 60)

1. Energy balance.

2. Ethical issues in physiotherapy.

3. Continuous Vs Intermittent Exercise training methods.

4. Work hardening.

5. Medico legal aspect of physiotherapy.

6. Rotational stability of the knee.

7. Master rotational plan.

8. Coordination of skeletal muscle action.

9. Toe region.

10. Factors affecting the sustained physical work.

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March 2009

[KU 700] **Sub. Code: 8101**

MASTER OF PHYSIOTHERAPY (MPT)
DEGREE EXAMINATION

(Revised Regulations)

FIRST YEAR

Paper I – BASIC SCIENCE

Q.P. Code : 278101

Time : Three hours **Maximum : 100 marks**

Answer ALL questions
Draw suitable diagram wherever necessary

I. Essay questions : **(2 x 20 = 40)**

1. Discuss the importance of licencing procedure in physiotherapy practice.

2. Discuss about the various factors affecting the physical performance. Explain in detail about the role of nutrition in performance.

II. Write short notes on : **(10 x 6 = 60)**

1. OBLA.
2. Metabolic mill.
3. Tibial Torsion.
4. Pilot study.
5. Various methods of sampling.
6. Morals and ethics in PT practice.
7. Curriculum.
8. Breathold diving.
9. Methods of Tabulation.
10. DOMS.

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September 2009

[KV 700] **Sub. Code: 8101**

MASTER OF PHYSIOTHERAPY (MPT)
DEGREE EXAMINATION

(Revised Regulations)

FIRST YEAR

Paper I – BASIC SCIENCE

Q.P. Code : 278101

Time : Three hours **Maximum : 100 marks**

Answer ALL questions

Draw suitable diagram wherever necessary

I. Essay questions : **(2 x 20 = 40)**

1. Discuss in detail about hypothesis testing.

2. Explain the basic principles and methods of research design in physiotherapy study.

II. Write short notes on : **(10 x 6 = 60)**

1. Fretty's physiological law.
2. Scapho lunate couple.
3. Clinical assignment.
4. Plyometrics.
5. Fatigue test.
6. Endurance training.
7. Audio visual aids.
8. Regulation of breathing during exercise.
9. Prehension.
10. Survey and its role in research.

*****

March 2010

[KW 700] **Sub. Code: 8101**

MASTER OF PHYSIOTHERAPY (MPT)

DEGREE EXAMINATION

(Revised Regulations)

FIRST YEAR

Paper I – BASIC SCIENCES

Q.P. Code : 278101

Time : Three hours **Maximum : 100 marks**

Answer All questions

Draw suitable diagrams where ever necessary

I. Essay questions : **(2 x 20 = 40)**

1. Discuss in detail about the different types of exercise testing.
2. Write elaborately about the functions of schedules and questionnaires and make the distinction between these two.

II. Write short notes on : **(10 x 6 = 60)**

1. Principles and concepts of counselling.
2. Negligence in physiotherapy practice.
3. Development of physiotherapy curriculum.
4. Classification of muscle based on their fascicular architecture.
5. Factors affecting the stability and mobility of knee joint.
6. Codman's paradox.
7. Lesson plan.
8. Pilot study.
9. Review of literature.
10. Opposition of thumb.

*****

September 2010

[KX 700] **Sub. Code: 8101**

MASTER OF PHYSIOTHERAPY (MPT)
DEGREE EXAMINATION

(Revised Regulations)

(For candidates admitted from 2000-2001 onwards)

FIRST YEAR

Paper I – BASIC SCIENCE

Q.P. Code : 278101

Time : Three hours **Maximum : 100 marks**

Answer ALL questions
Draw suitable diagram wherever necessary

I. Essay questions : **(2 x 20 = 40)**

1. Describe in detail the architecture of foot. Add a note on the biomechanical variations of the foot and pathological changes affecting the foot.

2. Explain the importance of sterno clavicular and Acromeo clavicular joint in shoulder dynamics. Add a note on the pathomechanical changes in paralysis of Thoraco scapular muscles.

II. Write short notes on : **(10 x 6 = 60)**

1. Anaerobic threshold.
2. Feiss line.
3. Probability and non probability sampling.
4. Work hardening.
5. Master rotational plan.
6. Mechanics of writing research report.
7. Arthro kinematic movements.
8. Energy expenditure during skeletal muscle contraction.
9. Ergonomic advice to porter for prevention of injuries.
10. Endurance training.

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MAY 2011

[KY 700] **Sub. Code: 8101**

MASTER OF PHYSIOTHERAPY (MPT)

DEGREE EXAMINATION

Revised Regulations : For candidates admitted from 2000-2001 onwards

FIRST YEAR

PAPER I – BASIC SCIENCES

Q.P. Code : 278101

Time : Three hours **Maximum : 100 marks**

Answer All questions

Draw suitable diagrams where ever necessary

I. Essay Questions : **(2 x 20 = 40)**

1. Analyze biomechanics and pathokinesiology of elbow complex.
2. Discuss on current trends and future of physiotherapy practice. Note on patient adherence.

II. Write Short Notes : **(10 x 6 = 60)**

1. Resistance to movement of normal synovial joints.
2. Blood supply during prolonged exercise.
3. Upright balance.
4. Case study.
5. Quality care.
6. Grading systems in class room teaching.
7. Equipment maintenance records.
8. Conflict-of-interest.
9. Evidence based practice in physiotherapy.
10. Worker care spectrum.

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