**[LB 6254]** **AUGUST 2012** **Sub. Code: 6254**

**FIRST YEAR BPT EXAM**

**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three Hours** **Maximum: 100 marks**

**(180 Min) Answer ALL questions in the same order.**

| **I. Elaborate on:** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. Describe the axes and planes in relation to movements in human body with examples. | 19 | 33 | 20 |
| 2. Define thermionic valves and thermionic emission: List the types of valves and construction and application of cathode ray oscilloscope. | 19 | 33 | 20 |
| **II. Write notes on:** | | | |
| 1. DC Currents. | 3 | 8 | 5 |
| 2. Newton's Laws. | 3 | 8 | 5 |
| 3. Cosine law and its implications. | 3 | 8 | 5 |
| 4. Properties of Magnet. | 3 | 8 | 5 |
| 5. Medium frequency Currents. | 3 | 8 | 5 |
| 6. Define Springs and its properties. | 3 | 8 | 5 |
| 7. Wheat stone bridge. | 3 | 8 | 5 |
| 8. Ammeter. | 3 | 8 | 5 |
| **III. Short Answers on:** | | | |
| 1. Define force and its components. | 1 | 5 | 2 |
| 2. Define choke coil. | 1 | 5 | 2 |
| 3. Fixation and stabilization | 1 | 5 | 2 |
| 4. S-D Curve | 1 | 5 | 2 |
| 5. Speed | 1 | 5 | 2 |
| 6. Momentum | 1 | 5 | 2 |
| 7. Electrical field. | 1 | 5 | 2 |
| 8. Static equilibrium. | 1 | 5 | 2 |
| 9. Voltmeter. | 1 | 5 | 2 |
| 10. Electromagnetic spectrum | 1 | 5 | 2 |

*******

**[LC 6254]** **FEBRUARY 2013** **Sub. Code: 6254**

**FIRST YEAR BPT EXAM**

**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code: 746254***

**Time: Three Hours** **Maximum: 100 marks**

**(180 Min)**

**I. Elaborate on:** **(2X20=40)**

1. Define levers. Explain the function, classification and application of levers in physiotherapy & order of levers with example of lever in human body.
2. Explain in detail about the Newton's laws.

**II. Write Notes on:** **(8X5=40)**

1. Wheatstone bridge.
2. Cosine law and its implications.
3. Electric shock.
4. Pulleys.
5. Ammeters.
6. Rectifiers.
7. Electromagnetic Induction.
8. Properties of a magnet.

**III. Short Answer:** **(10X2=20)**

1. Faraday's Law.
2. Eddy currents.
3. Law of Grotthus.
4. Concurrent forces.
5. Impedance.
6. Low frequency currents.
7. Centre of Gravity.
8. Define Velocity.
9. Shunt Rheostat.
10. EMF.

*******

**[LD 6254]** **AUGUST 2013** **Sub. Code: 6254**

**FIRST YEAR BPT EXAM**

**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three Hours** **Maximum: 100 marks**

**I. Elaborate on:** **(2X20=40)**

1. Define Equilibrium. Explain about the types and equilibrium in static & dynamic state how its related to physiotherapy?
2. Define electric current. Explain in detail about thermal, chemical and magnetic effects of electric current.

**II. Write Notes on:** **(8X5=40)**

1. Force – definition, classification and composition
2. Capacitors
3. Rheostat
4. Physical effect of heat & radiation
5. Law of Grotthus and its implication
6. Semi-conductors.
7. Gravity
8. Springs in series & Parallel.

**III. Short Answers:** **(10X2=20)**

1. State Hooke's law
2. Ohm's Law
3. Cosine Law
4. Define Work
5. Define Momentum
6. Friction
7. Triode valve
8. Electric Shock
9. Lenz's Law
10. Voltmeter.

*******

**[LE 6254]** **FEBRUARY 2014** **Sub. Code: 6254**

**FIRST YEAR BPT EXAM**

**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three Hours** **Maximum: 100 marks**

**I. Elaborate on:** **(2X20=40)**

1. Explain in detail about the physical effects on heat & radiation and laws governing radiation.
2. Define springs. Write about its properties and about springs in parallel and series. Also explain about the elastic materials in use.

**II. Write Notes on:** **(8X5=40)**

1. Momentum – principles & practical application
2. Speed
3. Axes and planes.
4. Pendular movement.
5. Properties of a magnet.
6. Magnetic effects of electric current.
7. Diode valve.
8. Oscillators.

**III. Short Answers:** **(10X2=20)**

1. Ionization.
2. Fuse.
3. Sinusoidal current
4. LED
5. Internal reflection.
6. Newton’s laws
7. Types of pulleys.
8. Define Biomechanics.
9. Angle of pulls of muscle.
10. Define stress.

*******

**[LF 6254]** **AUGUST 2014** **Sub. Code: 6254**

**FIRST YEAR BPT EXAM**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

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

**I. Elaborate on:** **(2X20=40)**

1. Define Speed, velocity, work, energy, power, acceleration, momentum, elasticity, principles and applications in physiotherapy.
2. Explain in detail about AC and DC currents.

**II. Write Notes on:** **(8X5=40)**

1. Coplanar and concurrent forces
2. Molecular Theory of Magnet
3. Levers in Physiotherapy
4. Hooke's Law
5. Conductors
6. Charging and discharging a capacitor
7. Shunt Rheostat
8. Groothus Law

**III. Short Answer:** **(10X2=20)**

1. Farad
2. Eddy Current
3. Electromagnetism
4. Fixation and Stabilisation
5. Ammeter
6. Factors determining capacity
7. Len'z Law
8. Rectifiers
9. Thermal Energy
10. Volt Meter

*******

**[LG 6254]** **FEBRUARY 2015** **Sub. Code: 6254**

**FIRST YEAR BPT EXAMINATION**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

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

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define levers. Describe different orders of lever, its function and application of levers in the field of physiotherapy.
2. Explain the principle, construction, working and uses of Transformer.

**II. Write notes on:** **(8 x 5 = 40)**

1. Cosine law
2. Smoothing circuits
3. Thermionic valve
4. Ammeter
5. Capacitors
6. Types of equilibrium
7. Pulleys
8. Force

**III. Short answers on :** **(10 x 2 = 20)**

1. Ohm’s law
2. Difference between earth shock and electric shock
3. Inertia
4. Latent heat of vaporization
5. Energy
6. Power
7. Joule’s law
8. Insulators
9. Work
10. Proton

*******

**[LH 6254]** **AUGUST 2015** **Sub. Code: 6254**

**B.P.T. DEGREE EXAMINATION**

**FIRST YEAR**

**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code: 746254***

**Time : Three Hours** **Maximum : 100 marks**

**Answer ALL questions**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define force. Give the diagrammatic representation of force and also explain briefly with its classification.
2. Define electric current. Explain in detail about thermal, chemical, mechanical and magnetic effects of electric current.

**II. Write notes on:** **(8 x 5 = 40)**

1. Wheat stone Bridge.
2. Semiconductors.
3. Newton's laws.
4. Springs in series and parallel.
5. Cosine law and its implications.
6. Medium frequency currents.
7. Electric and Earth shock.
8. Physiological effects of heat and radiation.

**III. Short Answers on:** **(10 x 2 = 20)**

1. Kinetic energy.
2. Amplitude.
3. Elasticity.
4. Inductors.
5. Work.
6. Biomechanics.
7. Ohmmeter.
8. Acceleration.
9. Wavelength.
10. Thermotherapy.

*******

**[LI 6254]** FEBRUARY 2016 **Sub. Code: 6254**

**FIRST YEAR BPT EXAMINATION**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Equilibrium. Explain about types of Equilibrium and its application in Physiotherapy.

2. Define Condenser. Write in detail about types, principles, factors determining capacity of Condenser.

**II. Write notes on:** **(8 x 5 = 40)**

1. Rheostat.
2. Gravity.
3. Potentiometer.
4. Construction and uses of Triode Valve.
5. Law of Grotthus and Implications.
6. Rectifiers.
7. Pulleys and its application in Physiotherapy.
8. Hooke's law.

**III. Short answers on:** **(10 x 2 = 20)**

1. Choke coil
2. Momentum
3. Voltmeter
4. Electromagnetic spectrum
5. Speed
6. Static electricity
7. Insulators
8. Solid friction
9. Lenz Law
10. Frequency

*******

**[LJ 6254]** AUGUST 2016 **Sub. Code: 6254**

**FIRST YEAR BPT EXAMINATION**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Levers. Explain the function, classification and application of Levers in physiotherapy and order of Levers with example of Lever in human body.

2. Explain in detail about AC and DC currents.

**II. Write notes on:** **(8 x 5 = 40)**

1. Cathode ray oscilloscope
2. Diode valve
3. Resistance in series and parallel
4. Pulleys
5. Properties of magnet
6. Axes and planes
7. Ammeter
8. Rheostat

**III. Short answers on:** **(10 x 2 = 20)**

1. Define acceleration
2. Define Speed
3. Vanthoff Law
4. Define Gravity
5. Impedance
6. Define Velocity
7. Lenz's Law
8. Sinusoidal current
9. Energy
10. Static equilibrium

*******

**[LK 6254]** FEBRUARY 2017 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Electric Current. Explain in detail about thermal, chemical and magnetic effects of Electric Current.

2. Explain in detail about the physical effects on Heat and Radiation and laws governing radiation.

**II. Write notes on:** **(8 x 5 = 40)**

1. Ammeter.
2. Voltmeter.
3. Springs in series and Parallel.
4. Pendular movement.
5. Levers in Physiotherapy.
6. Thermionic Valve.
7. DC Currents.
8. Wheat stone bridge.

**III. Short answers on:** **(10 x 2 = 20)**

1. Molecular Theory.
2. Thermionic emission.
3. Eddy currents.
4. Uses of condenser.
5. Ohm’s Law.
6. Farad.
7. S-D Curve.
8. Earth Shock.
9. Fuse.
10. Concurrent forces.

*********

**[LL 6254]** AUGUST 2017 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Earth shock. Describe the causes, management and preventive measures of earth shock.

2. Explain in detail about the various force systems with example.

**II. Write notes on:** **(8 x 5 = 40)**

1. Axes and planes.
2. Physiological effects of heat.
3. Cathode Ray Oscilloscope (CRO).
4. Newton's second law of motion.
5. Types of transformer.
6. Cosine law and its implications.
7. Factors determining capacitance of condenser.
8. Types of equilibrium.

**III. Short answers on:** **(10 x 2 = 20)**

1. Base of support.
2. Low frequency currents.
3. Angle of pull of a muscle.
4. Rectifier.
5. Pulley.
6. Thermotherapy.
7. Strain.
8. Free electrons.
9. Mechanical advantage.
10. Potentiometer.

*********

**[LM 6254]** FEBRUARY 2018 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Describe in detail about types, principles, factors determining capacity of Condenser.

2. Define Equilibrium. Explain about the types and equilibrium in static and dynamic state.

**II. Write notes on:** **(8 x 5 = 40)**

1. Diode valve.
2. Gravity.
3. Capacitors.
4. Force.
5. Potentiometer.
6. Magnetic lines of force.
7. Explain About Line of Gravity and Center of Gravity.
8. LED.

**III. Short answers on:** **(10 x 2 = 20)**

1. Define Velocity.
2. Define acceleration.
3. Joule's law.
4. Electromotive Force.
5. Define Momentum.
6. Inertia.
7. Define Power.
8. Impedance.
9. Solid Friction.
10. Shunt Rheostat.

********

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

**[LN 6254]** AUGUST 2018 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Lever. Describe the types of levers with an example. Write the application of lever principles in physiotherapy treatment.

2. Define Capacitor. Write its types and explain the electric field around a capacitor, charging and discharging of capacitor.

**II. Write notes on:** **(8 x 5 = 40)**

1. Types of pulleys.
2. Fuse.
3. Classification of forces.
4. Semiconductor.
5. Hooke's law.
6. Ionisation.
7. Grothus law and its implications.
8. Light emitting diodes (LED).

**III. Short answers on:** **(10 x 2 = 20)**

1. Biomechanics.
2. Electro motive force.
3. Inertia.
4. Medium frequency currents.
5. Types of friction.
6. Ohmmeter.
7. Sine wave.
8. Grid.
9. Pendulum.
10. Reactance.

********

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

**[LO 6254]** FEBRUARY 2019 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Describe the axes and planes in relation to movements in human body with examples.

2. Explain the principle, construction, working and uses of Transformer.

**II. Write notes on:** **(8 x 5 = 40)**

1. Wheat stone bridge.
2. Law of Grothus and Implications.
3. Rectifiers.
4. Explain about types of equilibrium.
5. Details about DC currents.
6. Factors determining capacitance of condenser.
7. List the types of Valves and construction.
8. Define springs, write about its properties. Also explain about the elastic materials in use.

**III. Short answers on:** **(10 x 2 = 20)**

1. Potentiometer.
2. Newton's II$^{nd}$ law.
3. Strain.
4. Earth shock.
5. Molecular theory.
6. S.D. curve.
7. Define levers.
8. Solid friction.
9. Kinetic Energy.
10. Eddy currents.

********

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

**[LP 6254]** AUGUST 2019 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Springs. Write its properties and explain springs in series and parallel.

2. Explain in detail about the rectifiers and smoothing circuits.

**II. Write notes on:** **(8 x 5 = 40)**

1. Concurrent force system.
2. Wheatstone bridge.
3. Factors determining stability of an object.
4. Electric shock.
5. Ammeter.
6. Oscillators.
7. Types of levers.
8. Molecular theory of magnet.

**III. Short answers on:** **(10 x 2 = 20)**

1. Types of motion.
2. Voltmeter.
3. Energy.
4. High frequency currents.
5. Springs.
6. Reflection.
7. Ohm’s law.
8. Inductance.
9. Gravity.
10. Movement arm.

*******

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

**[LQ 6254]** FEBRUARY 2020 **Sub. Code: 6254**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**

***Q.P. Code : 746254***

**Time: Three hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Thermionic valves and Thermionic emission. List the types of valves and construction and application of Cathode ray oscilloscope.

2. Define Condenser. Describe in detail about principles, construction, factors determining capacity and use of condenser in electrotherapy.

**II. Write notes on:** **(8 x 5 = 40)**

1. Anatomical pulleys.
2. Physical effect of heat.
3. Earth shock and its prevention.
4. Gravity.
5. Pendular movement.
6. Lenz's law and its application in physiotherapy.
7. Springs in series and parallel.
8. Charging and discharging a capacitor.

**III. Short answers on:** **(10 x 2 = 20)**

1. Define force.
2. Define levers.
3. Define stress and strain.
4. Magnitude of current.
5. Reflection.
6. Dangers of radiation.
7. Types of motion.
8. Define mechanics.
9. Newton's Third law.
10. Define Friction.

*******

**THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY**

**[LR 1220]** **DECEMBER 2020** **Sub. Code: 6254**
**(AUGUST 2020 EXAM SESSION)**

**BPT DEGREE EXAMINATION**
**FIRST YEAR**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**
***Q.P. Code : 746254***

**Time: Three hours** **Answer ALL Questions** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define Force. Give the diagrammatic representation of force and detail about classification of forces.
2. Describe in detail about Low frequency current, medium frequency current and direct current.

**II. Write notes on:** **(8 x 5 = 40)**

1. Choke coil.
2. Newton's law.
3. Hooke's law.
4. Kinetic and potential energy.
5. Laws governing radiation.
6. Oscillators.
7. Ammeter.
8. Concurrent system of force and its uses.

**III. Short answers on:** **(10 x 2 = 20)**

1. Fuse.
2. Uses of springs.
3. Cosine law.
4. Voltmeter.
5. Prevention of Electric shock.
6. Define pulley.
7. Thermal effect of heat.
8. Define Rectifiers.
9. Define Biomechanics.
10. Prevention of Electric Burns.

*******

**THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY**

**[BPT 0122] JANUARY 2022 Sub. Code: 6254**
**(AUGUST 2021 EXAM SESSION)**

**BACHELOR OF PHYSIOTHERAPY DEGREE COURSE**
**FIRST YEAR – (Regulation from 2010-2011 onwards)**
**PAPER IV – BASIC AND APPLIED PHYSICS FOR PHYSIOTHERAPY**
***Q.P. Code : 746254***

**Time: Three hours** **Answer ALL Questions** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 20 = 40)**

1. Define speed, velocity, work, energy, power, acceleration, momentum principles and applications in physiotherapy.
2. Explain in detail about gravity and types.

**II. Write notes on:** **(8 x 5 = 40)**

1. Parameters of alternating current.
2. Types of a magnet.
3. Properties of magnetic lines of force.
4. Faraday's Law.
5. Capacitor series and parallel.
6. Electromagnetic induction.
7. Diode valve.
8. Explain in Transistor and its types.

**III. Short answers on:** **(10 x 2 = 20)**

1. Young's modulus.
2. Wavelength.
3. Amplitude.
4. Frequency.
5. Static electricity.
6. Ohm's Law.
7. Electric power.
8. Base of support.
9. Inverse Square Law.
10. Radiation.

*******