

**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION**  
**Third Year**  
**Revised Non-Semester Regulations**  
**Paper I – ELECTROTHERAPY – I & II**  
**(LOW AND MEDIUM FREQUENCY AND HIGH FREQUENCY)**  
***Q.P. Code : 746218***

**Time : Three hours**

**Maximum : 100 marks**

**Answer All questions**

**Draw suitable diagrams wherever necessary**

**I. Essays:** **(2 x 15 = 30)**

1. Define Pain. Describe the theories of pain. Explain the applications of Transcutaneous electrical nerve stimulation. Add a note on mechanism of pain relief.
  
2. Discuss about the principles and production of ultrasound? Explain about the method of application? Add a note on their effects on tissues.

**II. Short Notes:** **(10 x 5 = 50)**

1. Electromagnetic spectrum.
2. Electric shock.
3. Faradic foot bath.
4. Physiological effects of IFT.
5. Fuse
6. Contrast bath.
7. Inductothermy
8. Reaction of degeneration
9. PUVA
10. Therapeutic effects of cryotherapy

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

1. Latent heat
2. Motor unit action potential
3. Diathermy
4. Current modulation
5. Van't Hoff's law
6. Skin testing
7. Tridymite formation
8. Glidemester effect
9. List the factors influencing SD curve
10. Peloids.

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**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION**

**Third Year**

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**(LOW AND MEDIUM FREQUENCY AND HIGH FREQUENCY)**

***Q.P. Code : 746218***

**Time : Three hours**

**Maximum : 100 marks**

**Answer All questions**

**Draw suitable diagrams wherever necessary**

**I. Essays: (2 x 15 = 30)**

1. Describe TENS and explain in detail its frequency, intensity, application, positioning of electrodes and types of TENS.
2. Explain in detail about the transformer with definition, types, principle, construction, working and uses.

**II. Short Notes: (10 x 5 = 50)**

1. Valves.
2. Therapeutic effect of SWD.
3. Ultraviolet filters and sensitizers.
4. Interferential therapy.
5. Properties of a magnet.
6. Masking.
7. Indication of biofeed back.
8. Properties of LASER.
9. Ice towel method.
10. Water bath technique.

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

1. Erythema.
2. Ohm's law.
3. Chronaxie.
4. Test dose.
5. Therakin tunnel.
6. Neurotomesis.
7. Rheobase.
8. Dangers of microwave diathermy.
9. Diode valve.
10. Name two physiological effects of heat.

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**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION**

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**(LOW AND MEDIUM FREQUENCY AND HIGH FREQUENCY)**

***Q.P. Code : 746218***

**Time : Three hours**

**Maximum : 100 marks**

**Answer All questions**

**Draw suitable diagrams wherever necessary**

**I. Essays:**

**(2 x 15 = 30)**

1. What is strength – duration curves? Write in detail the technique of doing it.
2. Production of short wave diathermy and its methods, physiological effects, dangers of short wave diathermy.

**II. Short Notes:**

**(10 x 5 = 50)**

1. Transformer.
2. Fuse.
3. Infra red radiation - types and effects.
4. Capacitor.
5. Puva.
6. Kromayer lamp.
7. Faradic current.
8. Resistance parallel and series.
9. Motor point.
10. Electro magnetic spectrum.

**III. Short Answer:**

**(10 x 2 = 20)**

1. Define Rheostat.
2. Joule's law.
3. Atom.
4. Wallerian degeneration.
5. Define laser and its type.
6. Beat frequency.
7. Heat loss.
8. Short wave diathermy – wavelength and its frequency.
9. Lenz's law.
10. Indications of wax.

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August 2010

[KX 1006X]

Sub. Code : 6218

**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION**

**Third Year Revised Non-Semester Regulations**

**Paper I – ELECTROTHERAPY – I & II**

**(LOW AND MEDIUM FREQUENCY AND HIGH FREQUENCY)**

*Q.P. Code : 746218*

**Time : Three hours**

**Maximum : 100 marks**

**ANSWER ALL QUESTIONS**

**Draw suitable diagrams wherever necessary**

**I. Essays:**

**(2X15=30)**

1. Describe the wiring and working of a Multi Vibrator Circuit.
2. Discuss the production of Infra Red Radiation. Describe the Therapeutic effects and danger of Infra Red Radiation.

**II. Short Notes :**

**(10X5=50)**

1. Treatment for Sinusitis.
2. Step up Transformer.
3. Biofeed back
4. Properties of Laser.
5. Magnetic Field.
6. Biophysical properties of Skin.
7. Principles of Tens.
8. Cryotherapy.
9. Define Ohm's law. Briefly highlight about resistance in series and parallel.
10. Pain Gate Therapy.

**III. Short Answers:**

**(10X2=20)**

1. Latent Heat.
2. Motor Point.
3. Thermionic Emission.
4. Shunt.
5. Masking.
6. Standing Waves.
7. Electromotive Force.
8. Snell's Law.
9. Dangers of Laser.
10. Filter.

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**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION**

**Fifth Semester**

**(Modified / New Modified Regulations)**

**Paper I – ELECTROTHERAPY – I  
(LOW AND MEDIUM FREQUENCY)**

***Q.P. Code : 745351***

**Time : Three hours**

**Maximum : 100 marks**

**ANSWER ALL QUESTIONS**

**Draw suitable diagrams wherever necessary**

**I. Essays:**

**(2X15=30)**

1. What is S.D. Curve? Write about its importance and the methods of taking different curves.
2. What is the difference between Electric shock and Earth shock? Write the causes of earth shock and the precautions against earth shock.

**II. Short Notes :**

**(10X5=50)**

1. Switches.
2. Triode valve.
3. Half-wave rectification and full wave rectification.
4. Semi conductors.
5. Charging and discharging of a condenser.
6. Choke coil and its uses.
7. Faradic foot bath.
8. Electrolytic burns.
9. Transformer.
10. Voltmeter.

**III. Short Answers:**

**(10X2=20)**

1. Joule's law.
2. Convection current.
3. Eddy current.
4. Electromagnet.
5. Uses of condensers.
6. Fuse.
7. EMG.
8. Rheobase.
9. Neurotmesis.
10. Kink curve.

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**February 2011**

**[KY 1006 X]**

**Sub. Code : 6218**

**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION.**

(Third Year Revised Non– Semester Regulations)

Paper I — ELECTROTHERAPY — I & II

(Low and Medium Frequency and High Frequency)

Q.P. Code : 746218

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

- I. Essays : (2 × 15 = 30)
1. Define strength duration curve. Discuss the procedure and its uses in detail.
  2. Write different degree's of Erythema; and explain how to find out first degree of Erythema.
- II. Short notes : (10 × 5 = 50)
1. TENS.
  2. Indications and contraindications of micro wave diathermy.
  3. Bell's palsy.
  4. Physiological effects of cryotherapy.
  5. Production of ultra sonic waves.
  6. Triode valve.
  7. Application of I.R.R.
  8. Laser Therapy.
  9. Physiological effects of theraputic modified direct current.
  10. Rectifiers.

III. Short Answers :

(10 × 2 = 20)

1. Chronaxid
2. Earth Shock.
3. Fuse.
4. Axonotmesis.
5. Displacement current.
6. Generator.
7. OHM's Law.
8. Helio therapy.
9. Self Induction.
10. Cosine law.

August 2011

[KZ 6259]

Sub. Code : 6259

**BACHELOR OF PHYSIOTHERAPY EXAMINATION**

**THIRD YEAR**

**Paper I – ELECTROTHERAPY – I (LMF)**

*Q.P. Code : 746259*

**Time : Three hours**

**Maximum : 100 marks**

**ANSWER ALL QUESTIONS**

**I. LONG ESSAYS**

**(2X20=40)**

1. What is Biofeedback? Describe in detail the principles of Biofeedback. Add a note on the uses of Biofeedback .
2. What is surged faradism? Describe in detail the mechanism of production of faradic current .Add a note on the physiological and therapeutic effects of faradic current.

**II. SHORT NOTES**

**(8X5=40)**

1. Recording electrodes for electromyography.
2. Neurophysiology of pain.
3. Parameters of Interferential therapy.
4. Propagation of action potential.
5. Diadynamic currents.
6. Physics of Iontophoresis.
7. H-reflex.
8. Therapeutic uses of electricity.

**III. SHORT ANSWERS**

**(10X2=20)**

1. Latency.
2. What is Electromyography?
3. Uses of biofeedback.
4. Sinusoidal current.
5. Resting membrane potential.
6. Factors affecting accuracy of strength duration curve.
7. Shape of interrupted galvanic current.
8. Dangers of Iontophoresis.
9. Motor point.
10. Ions used in Iontophoresis.

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February 2012

[LA 6259]

Sub. Code: 6259

**BACHELOR OF PHYSIOTHERAPY EXAMINATION  
THIRD YEAR  
PAPER I – ELECTROTHERAPY I (LMF)  
Q.P. Code: 746259**

**Time: Three Hours**

**Maximum: 100 marks**

**Answer ALL questions**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Define Iontophoresis. What type of current is used in Iontophoresis?  
Describe the mechanism of Iontophoresis and the therapeutic uses.
2. Describe the current parameters used in the different types of TENS?  
How does pain modulation occur in each type of TENS? Which type of TENS is best in chronic pain management?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Physiological effects of Interferential Current.
2. Electromagnetic Induction.
3. Electric shock.
4. Diadynamic Current.
5. Describe the clinical implication of SD curve test.
6. Sinusoidal current.
7. Production of therapeutic Ultrasound.
8. Working of Smart Bristow Faradic Coil.

**III. Short Answers:**

**(10 x 2 = 20)**

1. Capacitance.
2. Principles of Biofeedback.
3. Semiconductors.
4. Chronaxie.
5. Fuse.
6. Motor point and Motor unit.
7. Classification of Nerve Injury.
8. Stimulation of denervated muscle.
9. Ohm's law.
10. Checking of apparatus for Electrical muscle stimulation.

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[LA 6259]

AUGUST 2012

Sub. Code: 6259

**THIRD YEAR BPT EXAM**  
**PAPER I – ELECTROTHERAPY – I (LMF)**  
*Q.P. Code: 746259*

**Time: Three Hours**

**Maximum: 100 marks**

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

**I. Elaborate on:**

**Pages Time Marks**  
**(Max.)(Max.)(Max.)**

- |   |    |    |    |
|---|----|----|----|
| 1. Define Pain? What are the types of pain? Describe the gate control theory of pain? | 19 | 33 | 20 |
| 2. Describe Interferential therapy and its parameters in detail?                      | 19 | 33 | 20 |

**II. Write notes on:**

- |  |   |   |   |
|--|---|---|---|
| 1. High Voltage pulsed Galvanic stimulation. | 3 | 8 | 5 |
| 2. Electromyography.                         | 3 | 8 | 5 |
| 3. Iontophoresis.                            | 3 | 8 | 5 |
| 4. Diadynamic current.                       | 3 | 8 | 5 |
| 5. Dangers of therapeutic direct current.    | 3 | 8 | 5 |
| 6. Strength – Duration curve.                | 3 | 8 | 5 |
| 7. Burst mode TENS.                          | 3 | 8 | 5 |
| 8. Russian current.                          | 3 | 8 | 5 |

**III. Short Answers:**

- |                                   |   |   |   |
|-----------------------------------|---|---|---|
| 1. Motor point.                   | 1 | 5 | 2 |
| 2. Rheobase.                      | 1 | 5 | 2 |
| 3. Surged current.                | 1 | 5 | 2 |
| 4. Types of TENS.                 | 1 | 5 | 2 |
| 5. What is Action potential?      | 1 | 5 | 2 |
| 6. Kinked curve.                  | 1 | 5 | 2 |
| 7. Use of Glycopyrronium bromide. | 1 | 5 | 2 |
| 8. Acute Pain.                    | 1 | 5 | 2 |
| 9. Refractory period.             | 1 | 5 | 2 |
| 10. Axanotmesis.                  | 1 | 5 | 2 |

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[LC 6259]

FEBRUARY 2013

Sub. Code: 6259

THIRD YEAR BPT EXAM

PAPER I – ELECTROTHERAPY – I (LMF)

*Q.P. Code: 746259*

**Time: Three Hours  
(180 Min)**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X20=40)**

1. Define Interferential therapy (IFT). Describe the methods of application and the Physiological effects of IFT? Add a note on Contraindications of IFT.
2. Define Interrupted Direct Current (IDC). Describe the effects of IDC on Innervated and Denervated muscle. Differentiate Faradic from IDC.

**II. Write notes on:**

**(8X5=40)**

1. Production of Electromagnetic waves.
2. Pain modulation.
3. Galvanic tetanus ratio.
4. Methods of application of Ultrasound.
5. Moving coil Galvanometer.
6. Surge.
7. Uses of Transformer.
8. Therapeutic effects of High Voltage Pulsed Galvanic Current.

**III. Short Answers:**

**(10X2=20)**

1. Diode valve.
2. H reflex.
3. Feedback Loop.
4. Mutual induction.
5. Ions used in Iontophoresis.
6. Resistance in series and parallel.
7. Nerve conduction test.
8. Describe the type of TENS used for acute pain.
9. Dangers of Iontophoresis.
10. Lenz's law.

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[LD 6259]

AUGUST 2013

Sub. Code: 6259

**THIRD YEAR BPT EXAM**  
**PAPER I – ELECTROTHERAPY – I(LMF)**  
*Q.P. Code : 746259*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X20=40)**

1. Define faradic current. Write briefly about modified faradic currents and discuss their physiological effects. Add a note surging of faradic current?
2. What are the different types of electrical tests done in electrotherapy department?

**II. Write Notes on:**

**(8X5=40)**

1. Faradic – IDC test.
2. Glidemester effect.
3. Modulation and classification of TENS
4. Sterodynamic IFT
5. Treatment for neuroproxia of Radial nerve.
6. Functional electrical stimulation
7. Fuse
8. Pain gate theory.

**III. Short Answer:**

**(10X2=20)**

1. Types of electric current.
2. Ions
3. Maximum voluntary isometric contraction
4. Orthodromic conduction
5. Jouel's Law
6. Chronaxie
7. Compound motor unit action potential
8. Capacitance
9. F wave
10. Syncopated rhythm

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