



**MP-02011153**

Seat No. \_\_\_\_\_

**First Year B. P. T. Examination**

**July - 2016**

**Fundamentals of Electrotherapy**

Time : 2 Hours]

[Total Marks : 50

- Instructions :**
1. Write to the point.
  2. Draw appropriate diagram where necessary.
  3. Figures on right side indicate marks.

- 1** Long essays : (2 out of 3) **20**
  1. Describe in detail about Electric shock including its causes, prevention and treatment.
  2. Describe in detail about Electromagnetic spectrum with diagram. Add a note on laws and uses of electromagnetic waves.
  3. Describe in detail about transformers including types, structure and uses.
  
- 2** Short essays : (2 out of 3) **10**
  1. Types of capacitors
  2. Grouping of capacitors
  3. Types of electrodes.
  
- 3** Very short essays : (5 out of 6) **10**
  1. Waveforms
  2. Ohm's law
  3. Magnetic lines of force
  4. Referred pain
  5. Factors affecting pain
  6. Static electricity.

4 Multiple Choice Questions : 10

1. Following rays are used for diagnosis of fracture of bone
  - a) Gamma rays
  - b) Infra red rays
  - c) Ultra violet rays
  - d) X-rays
2. If rays strike at  $30^\circ$  with the surface amount of rays absorbed is...
  - a) 100%
  - b) 86.6%
  - c) 50%
  - d) 25%
3. In a three-pin plug, the internationally accepted system of coding is
  - a) Red to live, black to neutral and green to earth
  - b) Green to live, brown to neutral and black to earth
  - c) Brown or black to live, blue or red to neutral and green or yellow to earth
  - d) Green to live, red to neutral and blue or yellow to earth
4. Following factor(s) is/are responsible for attenuation...
  - a) Absorption
  - b) Scatter
  - c) Angle of incidence
  - d) Both a) and b)
5. Use of capacitor is
  - a) To alter voltage
  - b) To produce current
  - c) To store charge
  - d) To provide resistance
6. Unit of Resistance is
  - a) Farad
  - b) Henry
  - c) Ohm
  - d) Volt
7. Fast pain is carried by
  - a) A alpha fibers
  - b) A beta fibers
  - c) A gamma fibers
  - d) A delta fibers
8. Filter is material
  - a) Which allows all waves to pass
  - b) Which allows selective waves to pass
  - c) Which allow no waves to pass
  - d) None of above
9. Neurotransmitter for pain transmission is
  - a) Substance A
  - b) Substance L
  - c) Substance P
  - d) Substance R
10. Pick the odd out
  - a) Grothus law
  - b) Joules law
  - c) Cosine law
  - d) Inverse square law