

Class : I UG  
Major: BPT

Time: 2 hours  
Max. Marks: 60

**22BPTC09-Basic and Applied Physics for Physiotherapy-II**

**Course Outcomes**

CO1: Knowledge about magnetism and condenser

CO2: Learn about the laws

CO3: Understand about electricity-thermionic valves, semiconductor devices and electronic circuits and its therapeutic uses and importance of currents in treatment.

CO4: Recollect about alternating and static currents along with its physiological and therapeutic effects.

CO5: Understand the medical instrumentations for physical therapy and low frequency current in therapeutic interventions.

**Part A**

**Choose the correct answer**

**6x1=6**

1. The magnetism of a magnet is due to CO1K1  
a. earth  
b. cosmic rays  
c. due to pressure of big magnet inside the earth  
d. spin motion of electrons
2. Magnetic field intensity CO1K1  
a. Magnetic field intensity is the number of lines of force crossing per unit volume.  
b. Magnetic field intensity is the number of lines of force crossing per unit area.  
c. Magnetic field intensity is the magnetic induction force acting on a unit magnetic pole.  
d. Magnetic field intensity is the magnetic moment per unit volume.
3. Magnetic lines of force of a bar magnet do not intersect because CO1K1  
a. The lines have similar charges hence they repel each other  
b. The lines always diverge from a single point  
c. A point always has a single net magnetic field  
d. The lines need magnetic lenses to intersect
4. The Principle of Photochemical Activation is also known as CO2K1  
a. Grothus–Draper law                      b. Lambert’s law  
c. Draper law                                      d. Stark law
5. TENS is CO5K1  
a. Transcutaneous electrical nerve stimulation      b. Trans electrical nerve stimulation  
c. Electrical stimulation                                      d. Transcutaneous electrical muscle stimulation
6. Lenz’s law is the consequence of law of CO1K1  
a. Charge                      b. Mass                      c. Momentum                      d. Energy

**Part – B**

**Answer the following**

**Answer should not exceed 400 words or two pages**

**3x6=18**

7. a. Explain the concept of molecular theory (or) CO1K1  
b. Write a short notes Grothus law and its implications CO2K1
8. a. Define the term Electromagnetism, Electromagnetic induction and Lenzs law with formula. (or) CO1K2  
b. What are the physical effects of heat and radiation CO2K2
9. a. Define magnetic lines of force and list out the properties of magnet. (or) CO2K1  
b. Direct current (or) CO5K2

**Part C**

**Answer the following**

**Answer should not exceed 800 words or four pages**

**3x12=36**

- 10 a. What is condenser potential and capacity and write the uses of condenser in electrotherapy (or) CO1K1  
b. Write cosine law and its implications CO2K2
11. a. Illustrate the principle and factors determining the condenser capacity. (or) CO1K2  
b. Describe in detail about the medium and low frequency current CO5K3
12. a. Explain the charging and discharging of condenser (or) CO2 K2  
b. Describe in detail about the various laws governing radiations CO2K3