1. 2-Mark Questions

1. Define thermionic emission.
2. What is a diode valve?
3. What is a triode valve?
4. Name one characteristic of a diode valve.
5. Define the function of a cathode ray oscilloscope.
6. What is an intrinsic semiconductor?
7. What is an extrinsic semiconductor?
8. Define a Light Emitting Diode (LED).
9. What is an integrated circuit?
10. What is the purpose of a rectifier circuit?
11. Define a smoothing circuit.
12. What is a sinusoidal oscillator?
13. Name a type of non-sinusoidal oscillator.
14. What is the function of an ammeter?
15. Define the role of a voltmeter.
16. What is an ohmmeter used for?
17. What is a Wheatstone bridge?
18. Name one application of a cathode ray oscilloscope in physiotherapy.
19. What is the difference between AC and DC meters?
20. Name one material used in intrinsic semiconductors.
21. What is the significance of doping in extrinsic semiconductors?
22. Name one application of LEDs in medical devices.
23. What is the output waveform of a sinusoidal oscillator?
24. Define bridge rectifier.
25. Name one component used in a smoothing circuit.

2. 5-Mark Questions

1. Explain the process of thermionic emission with an example.
2. Describe the construction of a diode valve with a diagram.
3. Explain the characteristics of a triode valve.
4. Discuss the working principle of a cathode ray oscilloscope.

5. Differentiate between intrinsic and extrinsic semiconductors with examples.
6. Explain the working of a Light Emitting Diode and its application in physiotherapy.
7. Describe the role of integrated circuits in modern medical devices.
8. Explain the function of a half-wave rectifier with a diagram.
9. Discuss the purpose and components of a smoothing circuit.
10. Explain the working of a sinusoidal oscillator with an example.
11. Describe a non-sinusoidal oscillator and its application.
12. Explain the function of an ammeter and its use in physiotherapy equipment.
13. Discuss the role of a voltmeter in electrical measurements.
14. Explain the working principle of an ohmmeter.
15. Describe the Wheatstone bridge and its application in physiotherapy.
16. Explain the application of a cathode ray oscilloscope in analyzing physiotherapy signals.
17. Discuss the role of rectifiers in physiotherapy equipment.
18. Explain the significance of doping in extrinsic semiconductors.
19. Describe the construction of a full-wave rectifier circuit.
20. Explain how integrated circuits are used in electrotherapy devices.

3. 15-Mark Questions

1. Explain thermionic emission and the construction and characteristics of diode and triode valves. Discuss their applications in physiotherapy equipment.
2. Describe the construction and working of a cathode ray oscilloscope. Explain its applications in analyzing electrical signals in physiotherapy.
3. Discuss the differences between intrinsic and extrinsic semiconductors. Explain the role of Light Emitting Diodes and integrated circuits in physiotherapy devices.
4. Explain the working of rectifiers (half-wave and full-wave) and smoothing circuits. Discuss their applications in powering physiotherapy equipment, with diagrams.
5. Describe the types of oscillators (sinusoidal and non-sinusoidal) and their working principles. Explain their relevance in generating signals for physiotherapy devices.
6. Discuss the functions and applications of ammeters, voltmeters, and ohmmeters in electrical measurements. Explain their use in physiotherapy equipment calibration.
7. Explain the Wheatstone bridge, its construction, and working principle. Discuss its application in measuring resistance in physiotherapy devices.
8. Discuss the role of semiconductor devices, including LEDs and integrated circuits, in modern physiotherapy equipment, with specific examples.

9. Explain the construction and operation of rectifiers and smoothing circuits. Discuss their importance in ensuring stable power supply for electrotherapy devices.
10. Describe the applications of thermionic valves and semiconductor devices in physiotherapy. Compare their advantages and limitations in medical equipment design.