

**Section-D**

**Note: Long answer questions. Attempt any two question out of three Questions. (2x8=16)**

- Q.23 Explain the Electro diagnosis and neonatal therapy in detail.
- Q.24 Explain the Electrotherapy and used wave form in electrotherapy.
- Q.25 Explain the electromagnetic spectrum and wave form used in electromagnetic spectrum.

No. of Printed Pages : 4

Roll No. ....

223254

**5th Sem.  
Branch : Medical Electronics  
Subject : Therapeutic Medical Instrumentation**

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)**

- Q.1 Microwave frequency range are extended from.
- a) 3 MHZ to 30 MHZ
  - b) 30 MHZ to 300 MHZ
  - c) 500 MHZ to 30000 MHZ
  - d) None of above
- Q.2 Which type of electromagnetic radiation has the longest wavelength.
- a) Mircowaves                  b) Gamma rays
  - c) X-rays                        d) Radio waves
- Q.3 What property of sound wave act like principle of ultrasound
- a) Reflection & Refraction
  - b) Reflection
  - c) Refraction
  - d) Propagation

- Q.4 What type of electromagnetic radiation is used to cook food in a microwave oven.
- a) Microwaves
  - b) Ultraviolet radiation
  - c) Infrared radiation
  - d) Gamma rays
- Q.5 What is one main feature of an ultrasonic simulator
- a) Patient surgery simulations
  - b) Automatic diagnosis
  - c) Realistic ultrasound images
  - d) Wireless connectivity
- Q.6 Which of the following is NOT a condition treated by TMS.
- a) Depression
  - b) Asthma
  - c) Chronic pain
  - d) Obsessive compulsive Disorder

### Section-B

**Note: Objective/Completion type questions. All questions are compulsory.** (6x1=6)

- Q.7 What is a magnetic Stimulator.
- Q.8 What is phototherapy.
- Q.9 What is ultrasonic diathermy.
- Q.10 Why are radiant warmers important in neonatal care.
- Q.11 What are the types of waveforms used in electrotherapy.
- Q.12 What are the main types of electromagnetic radiation.

### Section-C

**Note: Short answer type Question. Attempt any eight questions out of Ten Questions. (8x4=32)**

- Q.13 Explain Electromagnetic spectrum in details.
- Q.14 Explain the Electrotherapy & different wave form uses.
- Q.15 Explain the Different waveform used in Electron diagnosis.
- Q.16 Explain the Neuro muscular electric stimulation.
- Q.17 Define shortwave diathermy. Explain the Production of heat within the body.
- Q.18 Define therapeutic instrument. Explain ECG Waveform.
- Q.19 Explain the Neonatal Intensive Care Unit.
- Q.20 What is hydro collar unit and explain its working.
- Q.21 What are microwave diathermy. Explain the production of microwave.
- Q.22 Explain the transcutaneous electrical nerve stimulation (TENS).