

1. Question no. 1 is compulsory.
2. Answer any three questions from remaining five question.
3. Figures on the right indicate full marks.
4. Assume suitable data wherever necessary.

- Q1. (a) What is the effect of heat on the body? Explain how it helps in pain relief. [05]
(b) Explain the basic principle of Hemodialysis. [05]
(c) How is Bipolar Mode different from Unipolar mode in ESU? [05]
(d) Explain Circus Motion Theory. [05]
- Q2. (a) Explain with the help of a neat block diagram the working of a Hemodialysis unit. [10]
(b) Explain the working of a Blood leak detector circuit in hemodialysis. [10]
- Q3. Explain with the help of a neat circuit diagram, the CUT, COAG and BICOAG modes of operation in an Electrosurgical unit. [20]
- Q4. (a) Explain in detail with the help of a circuit diagram, the working of Ultrasonic therapy Unit. [10]
(b) Draw and explain the following circuits in on - demand pacemaker. [10]
(i) Rate generator circuit
(ii) Monostable multivibrator
- Q5. (a) Explain in detail with the help of a circuit diagram working of Shortwave Diathermy. [10]
(b) Explain with the help of a neat circuit diagram the INST mode of Defibrillator. [10]
- Q6. Write short notes on any two [20]
(a) Heart Rate Variability
(b) Nd-YAG Laser and its medical applications
(c) Nerve and Muscle stimulator