

Q. P. Code: 22779

(3 Hours)

Total Marks: 80

- N.B.: (1) Question no. 1 is compulsory.
(2) Answer any 3 out of remaining 5 questions.
(3) Figures on the right indicate full marks.
(4) Assume data wherever necessary.

1. Answer any four out of five questions: [20]
(a) Explain the basic components of LASERS.
(b) Explain Circus Motion Theory.
(c) Explain what you mean by Chronaxie and Rheobase?
(d) What is the principle of Hemodialysis?
(e) Write a note on Safety aspects in surgical diathermy.
2. (a) Explain with the help of neat diagram, the working of a Nerve- Muscle Stimulator [10]
(b) Explain in detail the working of a Short Wave Diathermy unit with the help of a neat circuit diagram and mention the technical specifications [10]
3. (a) For a DC Defibrillator operating at 8KV, you require 16 microfarad capacitor. However, capacitors available to you are 32 microfarad with 2.0KV working voltage. How will you meet the requirement from the available capacitors? [10]
(b) Explain with the help of a neat circuit diagram the INST and SYNC mode of Defibrillation Operation. [10]
4. (a) Explain with the help of a neat block diagram the working of a Hemodialysis unit. [10]
(b) With the help of neat circuit diagram explain how dialysate temperature is monitored and controlled. [10]
5. (a) Explain with the help of a neat circuit diagram, the CUT, COAG and BICOAG selections in an ESU machine. [16]
(b) How is Monopolar Mode different from Bipolar Mode in ESU [04]
6. (a) Explain with the help of a block diagram working of an External Pacemaker [10]
(b) Explain the construction, working and medical applications of Nd-YAG Laser. [10]