

(3 Hours)

[ Total Marks : 80

N.B. : (1) Question No.1 is compulsory.

(2) Answer any **three** questions out of remaining **five** questions.

(3) **Figure** to the right indicate **full** marks

- 1.(a) Draw and explain blood leak detector circuit used in Hemodialysis 5
- (b) Explain using suitable waveform what is Atrial and Ventricular fibrillation. Explain how will you correct it. 5
- (c) Explain the ICHD codes. 5
- (d) Compare ultrasonic diathermy with shortwave diathermy with reference to its application technique, and technical specifications. 5
- 2 (a) Draw and Explain the block diagram of Hemodialysis machine. 10
- (b) Explain any one type of LASER used in medical application. 10
- 3 (a) Explain in detail with the help of a circuit diagram, the working of Ultrasonic therapy Unit along with its specifications 10
- (b) Explain in detail with the help of a circuit diagram, the working of short wave diathermy Unit along with its specifications 10
- 4 (a) Explain various modes of operation in electro-surgical unit. Also draw various electrodes used. 10
- (b) Explain using circuit diagram BICOAG modes of operation in solid state surgical diathermy. 10
- 5 (a) Draw the circuit diagram and explain INST mode of operation in defibrillator. 10
- (b) Draw and explain temperature controller circuit used in Hemodialysis 10
6. Draw and explain the following circuit in pacemaker 20
  - (a) Rate generator
  - (b) Monostable multivibrator