

[3 Hrs]

Total Marks : 80

N.B

- 1) Question No. 1 is compulsory.
- 2) Attempt any three questions out of remaining five questions.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary, stating your assumption.

- Q1. (a) Draw and explain using schematic diagrams ECG electrodes. [05]  
(b) Explain Cardioversion. Also highlight the LOWN discharge waveform used in Defibrillators. [05]  
(c) Write a short note on Electromyography EMG. [05]  
(d) Explain the any one generation of CT scanner. [05]
- Q2. (a) With a neat diagram explain the heart sounds measurement. [10]  
(b) Explain electromagnetic blood flow meter in detail. [10]
- Q3. (a) Draw and explain stationary and rotating anode in X-ray tube. [10]  
(b) Draw and explain 12 lead electrode ECG configuration and placement of electrodes. [10]
- Q4. (a) Draw a suitable schematic diagram of cell and waveform to explain the generation of action potential in details. [10]  
(b) Explain using suitable diagram, working of haemodialysis machine [10]
- Q5. (a) Draw and explain the working of a Pacemaker and mention its various modes. [10]  
(b) Explain using schematic diagram any one technique of Blood pressure measurement. [10]
- Q6. Write short notes on: [**any three**]: [20]  
(a) Heart Lung Bypass machine  
(b) Various frequencies in EEG  
(c) Baby incubator  
(d) Micro and Macro shocks.
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