

**B.Sc. CARDIAC TECHNOLOGY**

**FIRST YEAR**

**PAPER III – MEDICAL ELECTRONICS, BIOPHYSICS AND COMPUTER  
USAGE RELEVANT TO CARDIAC TECHNOLOGY BASIC  
ELECTROCARDIOGRAPHY**

*Q.P. Code: 801510*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Explain in detail the ECG lead system.
2. Explain radiation dose reduction strategies.
3. Discuss on impedance plethysmography.

**II. Write notes on:** **(8 x 5 = 40)**

1. Write notes on synchronized and asynchronized defibrillator.
2. Auscultatory method of blood pressure monitoring.
3. Normal P wave.
4. Method of monitoring oxygen saturation using pulse oximeter.
5. Unipolar leads.
6. Necessity of defibrillator.
7. Write a note on strain gauge transducer.
8. Imaging modes in ultrasound.

**III. Short answers on:** **(10 x 3 = 30)**

1. Acoustic impedance.
2. Action potentials.
3. Placement of pericardial electrodes.
4. Sensor used in pulse oximeter.
5. Electrode used to detect P wave and the time duration of P-wave.
6. Piezo electric effect.
7. Depolarisation and repolarization.
8. Doppler effect.
9. Calculate the heart rate if there are 5 R waves in a 60 seconds strip.
10. What is radiation and mention its types?

\*\*\*\*\*