

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. What is the function of a defibrillator and differentiate between pacemaker and implantable defibrillator?
2. Explain how an image is formed in ultrasound?
3. Explain unipolar and augmented limb leads.

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

1. Phases of cardiac action potential.
2. Direct method of blood pressure monitoring.
3. Write notes on left and right axis deviation.
4. Write a note on the various devices used for monitoring radiation.
5. Biological effects of radiation.
6. What are the various cardiac and non cardiac factors influencing ECG recording?
7. Write the colour coding for placement of ECG electrodes in 12 lead system.
8. Importance of blood pressure monitoring.

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

1. Three methods to reduce radiation exposure.
2. Impedance plethysmography.
3. Calculate the heart rate when the paper speed is 50 mm/sec and the distance between two peaks of QRS complex is 12 mm/sec?
4. Maximum energy used in defibrillator.
5. ECG waveform.
6. Calibration check in electrocardiography.
7. Transducer.
8. ECG pattern in atrial fibrillation.
9. Positioning of defibrillator paddles on defibrillation.
10. Inverse square law.