

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0423]**

**APRIL 2023**

**Sub. Code: 1510**

**B.Sc. CARDIAC TECHNOLOGY**  
**FIRST YEAR (Regulations 2014-2015, 2018-2019 & 2021-2022 onwards)**  
**PAPER III – MEDICAL ELECTRONICS, BIOPHYSICS AND COMPUTER**  
**USAGE RELEVANT TO CARDIAC TECHNOLOGY AND**  
**BASIC ELECTROCARDIOGRAPHY**

*Q. P. Code: 801510*

**Time: Three hours**

**Maximum : 100 Marks**

**Answer ALL Questions**

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

1. Discuss in detail about the techniques for Monitoring Radiation Exposure.
2. Explain the uses of Defibrillators and its functions.
3. What is Ultrasound Waves and write its application in Medicine?

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

1. Describe about impedance Plethysmography.
2. What are the procedures to be done in Catheterization lab?
3. What is Pulse oximeter and explain its types.
4. Explain the types of waves in ECG.
5. What is Pre-cordial chest leads?
6. How defibrillator restores the normal rhythm of heart?
7. What is bio-impedance signal?
8. Explain the types of ECG tests.

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

1. Define ALARA.
2. Properties of X-rays.
3. Computer use in Medical care.
4. Atrial repolarization.
5. Piezo-electric effect.
6. Define Radiation.
7. Ionization.
8. C-arm Fluoroscopy.
9. U wave.
10. Mean arterial pressure.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1123]

NOVEMBER 2023

Sub. Code: 1510

**B.Sc. CARDIAC TECHNOLOGY**

**FIRST YEAR (Regulations 2014-2015, 2018-2019 & 2021-2022 onwards)**

**PAPER III – MEDICAL ELECTRONICS, BIOPHYSICS AND COMPUTER**

**USAGE RELEVANT TO CARDIAC TECHNOLOGY AND**

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*Q. P. Code: 801510*

**Time: Three hours**

**Maximum : 100 Marks**

**Answer ALL Questions**

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

1. Explain about the measures taken to reduce radiation in Cath lab.
2. Describe about augmented Limb leads.
3. Explain the preparation and procedure for paediatric ECG.

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

1. Methods of monitoring oxygen saturation in pulse oximeter.
2. Biological effects of Radiation.
3. Principle of Electrocardiography.
4. Uses of Computer in Medical Care.
5. Working of CRT.
6. Draw Electrode positions in ECG.
7. How to assess the axis in ECG?
8. Write the causes of left axis deviation.

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

1. Piezo-electric crystal.
2. Doppler ultrasound.
3. Isoelectric complex.
4. Transducer.
5. T-wave.
6. Depolarization.
7. Types of Radiation.
8. Properties of X-rays.
9. Einthoven triangle.
10. How to calculate PR interval?

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