

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.**  
**(For candidates admitted during the academic year 2011-2012 & thereafter)**

**SUBJECT CODE : 11PH/ME/BM53**

**B.Sc. DEGREE EXAMINATION NOVEMBER 2015**  
**BRANCH III - PHYSICS**  
**FIFTH SEMESTER**

**COURSE : MAJOR – ELECTIVE**  
**PAPER : BIO-MEDICAL PHYSICS**  
**TIME : 3 HOURS**

**MAX. MARKS : 100**

**SECTION - A**

**ANSWER ALL QUESTIONS:**

**(10x3=30)**

1. Mention any three properties of X-rays.
2. What is intravenous pyelogram?
3. What is phonocardiography?
4. State the limitations of ultrasound waves.
5. Draw a typical ECG wave and mention its parts.
6. How are Bio potentials produced in human body?
7. Define Bio Electricity.
8. Expand ECG, EEG and MEG.
9. What are gamma rays? Mention their properties.
10. Mention any three radioactive elements used in medicine.

**SECTION – B**

**ANSWER ANY FIVE QUESTIONS:**

**(5x6=30)**

11. Explain the principle of angiography.
12. What are ultrasound waves? Mention their uses.
13. Explain Einthoven's triangle.
14. What are brain waves? Briefly explain the types.
15. Discuss the types of units for radiation.
16. Briefly explain Positron Emission Tomography.
17. Discuss the effect of radiation on living tissues.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS:**

**(2x20=40)**

18. Explain the working of X-ray tube with a suitable diagram.
19. What are heart sounds? Explain the principle and working of a stethoscope with a diagram.
20. Explain the synaptic transmission and the types of synapses.
21. Explain Lorentz force in diagnostic therapy.

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