

S.No. 5326

MBEEL 2/MBEIE 2

(For candidates admitted from 2008 to 2015 Batch)

B.Sc. DEGREE EXAMINATION, APRIL 2022.

**Part III — Electronics/Industrial Electronics — Major
Based Elective**

BIO-MEDICAL INSTRUMENTATION

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. What is neuron? What are the various parameters associated with it?
2. What is cardiac output?
3. Define circulation and respiration?
4. Define heart?
5. Draw the wave pattern of ECG.
6. What is EEG?
7. What are the different methods to measure the blood pressure?

8. Define thermography?
9. Difference between External pacemaker and internal pacemaker?

10. What is internal defibrillator and explain which type of electrodes are used for it?

PART B — ($5 \times 5 = 25$)

Answer ALL questions, Choosing either (a) or (b).

11. (a) What are structural and functional differences and similarities between skeletal, cardiac and smooth muscle?

Or

- (b) Explain the Membrane potential and action potential and draw the graph?

12. (a) Explain about the dynamics of system blood flow?

Or

- (b) Give some of the diseases that affect the Central Nervous system?

13. (a) What is Ultrasound? Uses of Ultrasound?

Or

- (b) Discuss about patient monitoring systems?

14. (a) Define blood pressure and its types?

Or

- (b) Explain about thermography process in medical field?

15. (a) Define X-Ray? Explain the production of X-Rays and some applications of X-Rays?

Or

- (b) Explain the implantable Pacemakers?

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Describe in detail the origin of bio-potential with neat diagram and explain about its membrane and resting potential?

17. Explain about the Measurement technique used for Respiration?

18. Draw the Block diagram of ECG recording set up and Explain its process?

19. Draw the block diagram of CT Scanner and Explain it Briefly?

20. Define Respirator? Explain the types of Respiration with diagram?