

Reg. No.

Name :

(Pages : 3)

H – 2947

Eighth Semester B.Tech. Degree Examination, November 2019

13.806.2 — BIOMEDICAL ENGINEERING (T)

(2013 Scheme)

Time : 3 Hours

Max. Marks : 100

PART – A

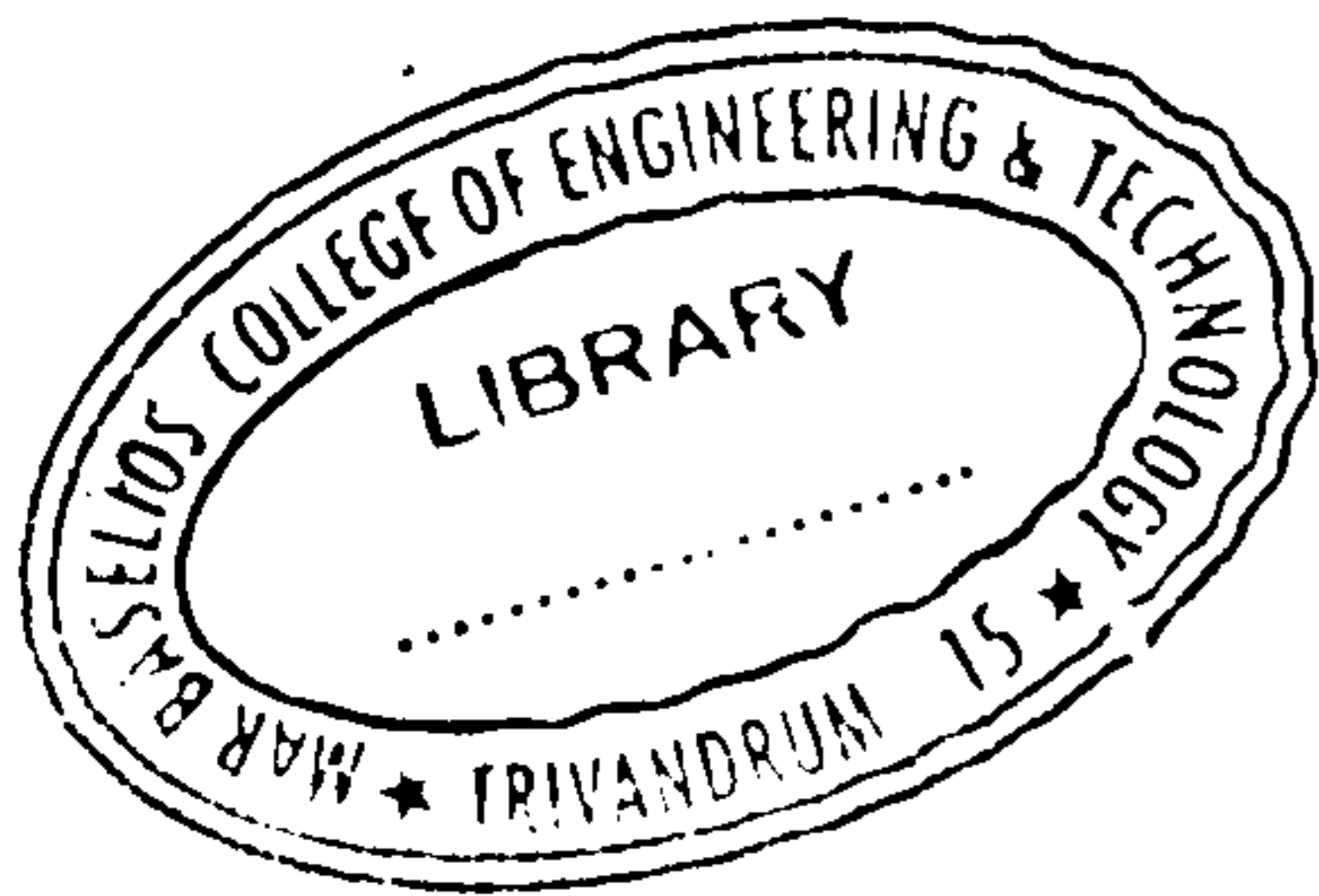
Answer ALL questions.

Each question carries 2 marks.

1. What is meant by bioelectric potential?
2. Draw the ECG signal and mark amplitude and time.
3. Why Silver electrode is usually preferred in Bioelectric uses?
4. What is meant by phonocardiography?
5. What do you mean by Cardiac output?
6. Write a note on cardiovascular system.
7. List the applications of MRI.
8. Explain the principle of B mode display in ultrasound imaging.
9. What is meant by pulse oxymeter?
10. Mention any two applications of telemetry in patient care.

P.T.O.





PART – B

Answer any ONE question from each module.

MODULE I

11. (a) Explain with the necessary diagram how action potential is generated in human body and write the Nernst equation for the resting membrane potential. (8)
- (b) With necessary illustration, explain basic ECG lead configurations used in ECG measurement. (12)
12. (a) Explain the construction of following electrodes with necessary diagrams :
- (i) Microelectrodes
 - (ii) Skin surface electrodes.
 - (iii) Needle electrodes. Explain the physiological transducers used in biomedical. (16)
- (b) Write short notes on ECG, EEG. (4)

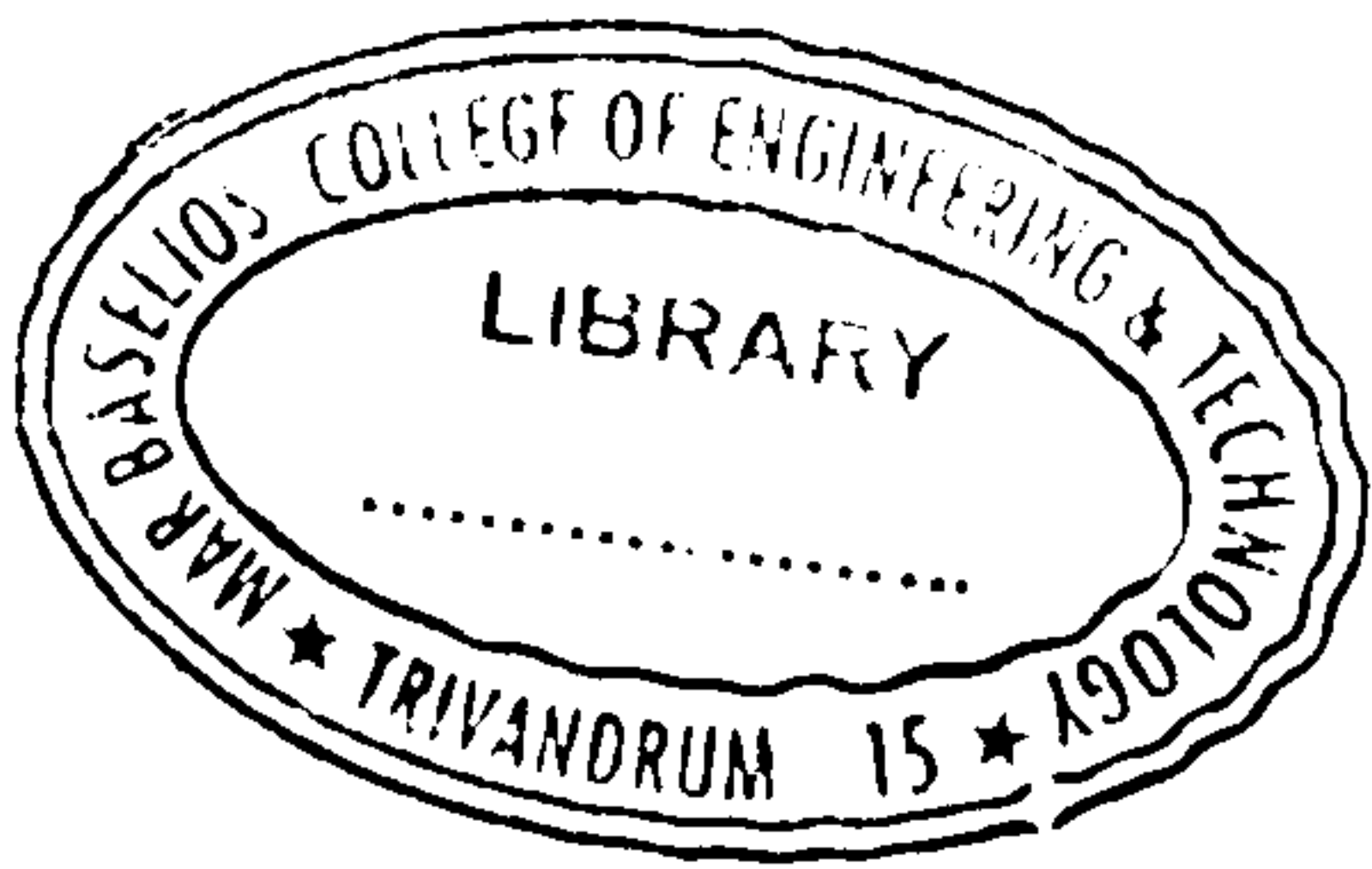
MODULE II

13. (a) Explain any one method to measure the blood pressure with suitable sketch. (5)
- (b) Explain one method to measure blood flow and cardiac output with suitable sketch. (15)
14. (a) Describe Cardiovascular system of body with necessary sketch. (15)
- (b) What is Plethysmography. Explain full body plethysmography with illustration. (5)

MODULE III

15. (a) Describe with the help of necessary diagrams, explain the image reconstruction techniques in CT scanner. (15)
- (b) Compare A-mode, B-mode and M-mode display in Ultra sound. (5)





16. (a) Describe the image acquisition and reconstruction techniques in MRI. (15)
- (b) Write short notes on Ultra sound transducers. (5)

MODULE IV

17. (a) Describe the working of heart-lung machine.
- (b) Describe the function and working principle of Anaesthesia machine.
- (c) Explain the working of Haemodialysis Machine. (20)
18. (a) What is the basic components of telemetry system. (10)
- (b) Write a short note on implantable units. (6)
- (c) What is meant by defibrillator? (4)
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