

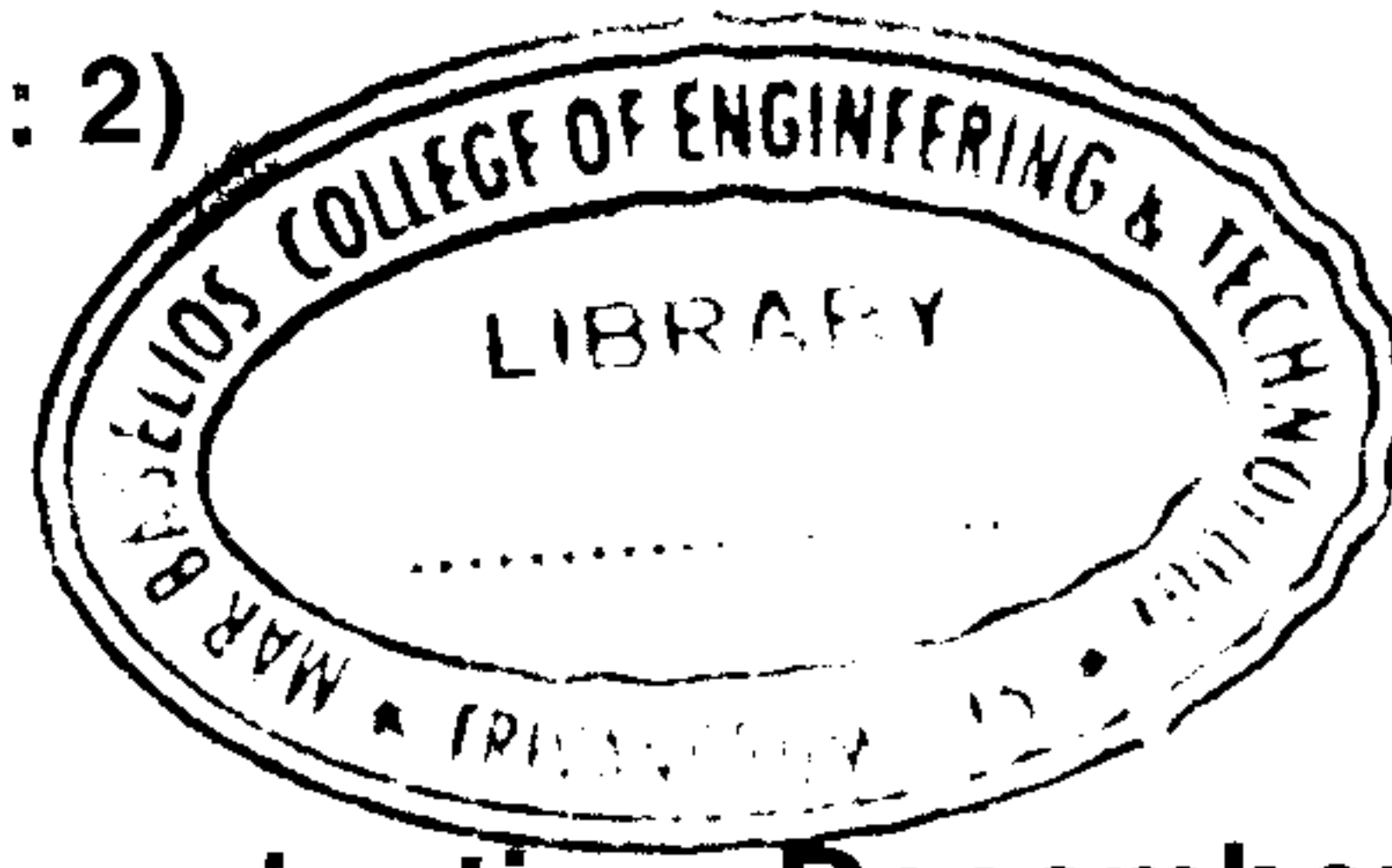


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Reg. No. : .....

Name : .....



**Eighth Semester B.Tech. Degree Examination, December 2018  
(2013 Scheme)**

**13.806.2 : BIOMEDICAL ENGINEERING (T)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carries **2** marks :

1. What is meant by action potential ?
2. Sketch a typical ECG signal and label it.
3. What are the different valves present in heart ?
4. Mention the application of Phonocardiogram.
5. State the principle of MRI scanning.
6. Mention few applications of ultra sound scan.
7. Write a note on M-mode display.
8. What do you mean by biotelemetry ? Mention its application.
9. State the functions of ventilator.
10. Differentiate between peritoneal dialysis and hemodialysis.

**PART – B**

Answer **any one** question from **each** Module. **Each** question carries **20** marks :

**Module – I**

11. a) What is half-cell potential ? Give the expression. 5
- b) Explain various bio-potential electrodes used in biomedical engineering. 15

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12. a) Explain how bio-electric potentials are generated. 5  
 b) Explain briefly the function and application of any two physiological sensors used. 15

### Module – II

13. a) Sketch the structure of heart and mark various parts. 5  
 b) Explain the electrical activity of heart with suitable diagrams. 15
14. a) What is PPG ? Mention any two applications. 5  
 b) With relevant diagrams, explain how heart sounds are measured. 15

### Module – III

15. a) List advantages of MRI over other imaging modalities. 5  
 b) Explain the image acquisition and reconstruction techniques in MRI scanner. 15
16. a) Write a note on Spiral CT. 5  
 b) With diagrams, explain the image acquisition and reconstruction techniques in CT scanner. 15

### Module – IV

17. a) Briefly explain the working of heart-lung machine. 5  
 b) What are defibrillators ? Explain various types of defibrillators with relevant diagrams. 15
18. a) Write a note on implantable telemetry transmitter. 5  
 b) Mention the functions of oxymeters. Explain the working of any one with diagrams. 15

