

II B.Tech I Semester(R05) Supplementary Examinations, May/June 2010
BIO ELECTRICITY AND ELECTRODE
(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Describe the basic concepts of electro cardiography what is normal semi-permeable membrane? [16]
2. What is Nernst equation? Explain how it shows that the electrode response depends on both temperature and the no of charges on the ion. [16]
3. Describe various studies conducted on nerve conduction including Galvani and Volta's experimentation, Goldman's theory and Hodgekin and Huxley's observation. [16]
4. Define "lead"? Explain the ECG leads with neat circuit diagrams. [16]
5. Write a short note on:
 - (a) Diagnostic applications of bio-electrodes
 - (b) Characteristics of bio-electrodes
 - (c) Electrode electrolyte[5+6+5]
6. Write a note on "Physiotherapy instruments". [16]
7. Explain the electrical activity of skeletal muscles? Discuss the needle electrodes. [16]
8. (a) Explain the placement of electrodes used in the measurement of EEG?
(b) Specify different EEG rhythms? Define REM. [8+8]
