

**II B.Tech I Semester Supplementary Examinations, November 2006**  
**BIO-ELECTRICITY AND ELECTRODES**  
**(Bio-Medical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. Write an account of the relevance of Nernst equation in most biological situations and add a note on Nernstian Characteristics. [16]
2. Describe the electric properties of receptors and explain how they help in transmission of message. [16]
3. Describe the conduction system of heart. Explain the auto generation of action potentials in sino-atrial node. [16]
4. Derive a relationship between the standard bipolar leads and unipolar extremity leads. [16]
5. What are the bioelectric sources used in volume conductor fields? [16]
6. In brief, discuss the application of analytical instruments in medicine. [16]
7. (a) Discuss the velocity of neuromuscular transmission and their changes in normal and abnormal states. [8+8]  
(b) Explain the chemical significance of fatigue?
8. Discuss the different waves and rhythms in Electroencephalogram. Explain. [16]

\*\*\*\*\*