

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

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on:
 - (a) $Na^+ K^+$ pump. [6]
 - (b) Transmembrane potential [5]
 - (c) Resting potential in Squid axon. [5]
2. Give an account of local circuit theory related to nerve impulse and explain saltatory conduction. [16]
3. Explain the characteristics of action potentials at the following: [16]
 - (a) SA Node
 - (b) Atria
 - (c) AV Node
 - (d) Ventricle
 - (e) Purkinjee fiber.
4. (a) Highlighting the differences between unipolar limb leads and bipolar limb leads, explain them. [8+8]
(b) Give the relationship for above two leads.
5. What are the bioelectric sources used in volume conductor fields? [16]
6. (a) Write a short note on various types of electrodes used to extract bio-signals? [8+8]
(b) What are physiotherapy instruments?
7. Explain the electrical activity of skeletal muscles? Discuss the needle electrodes. [16]
8. Discuss the different waves and rhythms in Electroencephalogram. Explain. [16]
