

R09

Code: 9A10802

B.Tech IV Year I Semester (R09) Supplementary Examinations, May 2013

BIO-MEDICAL INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

1. (a) What are the design factors of biomedical instrumentation? Explain.
(b) What is a biomedical signal? List the various biomedical signals.
2. (a) Explain about Nernst equation for bio electric potentials.
(b) Define the terms:
 - (i) Resting potential.
 - (ii) Action potential.
 - (iii) Depolarisation and Repolarisation with reference to human cell.
3. What are bioelectrodes? Enumerate their essential characteristics for biomedical applications.
4. With neat sketch explain the relation between electrical and mechanical activities of the heart.
5. Explain with neat sketch working of a dialysis machine.
6. (a) Explain how can electromyography measurements can be made.
(b) What is evoked potential response? Explain.
7. Draw a block diagram of a servo controlled ventilator along with its accessories and explain its function.
8. What are typical hazard situations in hospitals and what are the ways of avoiding them?
