

Code: R7 420403

R7

B.Tech IV Year II Semester (R07) Advanced Supplementary Examinations, June 2012

BIOMEDICAL INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions

All questions carry equal marks

- 1 (a) List out various components present in a biomedical instrumentation system and explain about each component.
(b) Discuss about specifications and design aspects of bioamplifiers.
- 2 (a) With a neat diagram explain the functioning of a human cell.
(b) Define the Nernst equation for membrane.
- 3 (a) List out and discuss about biopotential external electrodes. Give their applications.
(b) Discuss about biochemical electrodes.
- 4 (a) With a neat sketch describe a cardiac cycle.
(b) Discuss about relationship between electrical and mechanical activities of the heart.
- 5 (a) Discuss about specifications and working of an ECG machine.
(b) Discuss about blood pressure and blood flow measurement with relevant sketches.
- 6 (a) Discuss in detail about a pacemaker and its classifications.
(b) Discuss about Hemodialysis machine.
- 7 (a) Give the specifications of EEG and EMG.
(b) Give the interpretation of EEG and EMG.
- 8 Discuss about the following:
 - (a) Spirometry.
 - (b) Mechanism of respiration.
