

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 3052

Roll No.

--	--	--	--	--	--	--	--	--	--

B.Tech.

EIGHTH SEMESTER EXAMINATION, 2005-2006

BIO MEDICAL INSTRUMENTATION

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt *ALL* questions.

(ii) All questions carry equal marks.

(iii) In case of numerical problems assume data wherever not provided.

(iv) Be precise in your answer.

002416

1. Attempt *any four* parts of the following : (5x4=20)

- (a) What is skin contact impedance ? Explain Resting and Action potentials. How the Action potentials are propagated ?
- (b) What are Bioelectric potentials ? Explain different types of leads and electrodes used for measuring these potentials.
- (c) Explain different types of Transducers used for the purpose of biological applications.
- (d) What are biomaterials ? Explain.
- (e) Give the principle and construction of LVDT.
- (f) Explain the electrodes used for measurement of ECG and EMG.

2. Attempt *any four* parts of the following : (5x4=20)
- (a) Explain Amplifiers used in recording system. Also explain ink jet recorders.
 - (b) What are potentiometric and ultra violet recorders ? Explain.
 - (c) Explain Monitors and printers.
 - (d) Explain electro physiological recorders.
 - (e) What is principle and application of ECG ?
3. Attempt *any two* parts of the following : (10x2=20)
- (a) Give the Anatomy of Nervous system. Discuss about Neuronal communication.
 - (b) How Neuronal firing measurements are made ? Explain EPSP and IPSP.
 - (c) Give the block diagram of EEG. How diagnosis is made with EEG ?
4. Attempt *any two* parts of the following : (10x2=20)
- (a) Explain Electro-oculogram.
 - (b) Describe ophthalmoscope.
 - (c) Explain Tonometer for eye pressure measurement.
5. Attempt *any two* parts of the following : (10x2=20)
- (a) Describe cardiac-pacemaker. Also Explain stimulators.
 - (b) Discuss on Radiographic Diagnostic and Therapeutic.
 - (c) Explain Diathermy and Defibrillator. Also explain Defibrillator Analysers.