

# ***B.Tech. Degree VIII Semester Examination, May 2006***

## **EI 801/EC/EE 804 D BIOMEDICAL INSTRUMENTATION (2002 Admissions)**

Time: 3 Hours

Maximum Marks: 100

- I a) With the help of a typical cell potential wave form, explain the generation of Bio-electric potential. (10)  
b) Explain the electrodes that can be used to study the electrical activity of the individual cell. (10)
- OR**
- II a) With the help of a ECG wave from, explain the propagation of electric potential through heart muscles. (10)  
b) Write *short notes* on:  
(i) EEG electrodes (ii) Micro electrodes (10)
- III a) Explain with block diagram, the working of an ECG recorder. (10)  
b) With the help of a diagram, explain the working of a O inkjet recorder. (10)
- OR**
- IV a) Explain in detail 12 different lead connections of ECG recording set up. (12)  
b) With the help of a diagram explain the working of a uv recorder. (8)
- V a) With neat sketches, explain the working of ac and dc defibrillator. (15)  
b) Write notes on performance aspect of implantable-pace makers. (5)
- OR**
- VI a) What is the need of a pace maker? Explain different types with examples. (15)  
b) Explain the working of an ultrasonic therapy unit machine set up. (5)
- VII a) With the help of a block diagram, explain the operation of a X-ray machine. (15)  
b) Briefly explain real-time imaging system. (5)
- OR**
- VIII a) Explain the principle behind NMR imaging. Also explain its advantage and disadvantage. (15)  
b) What are health hazards from X-ray and nuclear radiation? (5)
- IX a) Draw the block diagram of an ECG telemetry transmitter and receiver, explain its working. (15)  
b) Discuss the medical uses of biomedical telemetry. (5)
- OR**
- X a) Draw the block diagram of the setup for transmission of analog physiological signals over telephone lines and explain. (15)  
b) What is an implantable telemetry system? (5)

\*\*\*

