BTS (C) – VIII – 06 – 025 (HH)

B. Tech Degree VIII Semester Examination, May 2006

EC/EE 804 (D) BIOMEDICAL INSTRUMENTATION

(2002 Admissions)

Time : 3 Hours Maximum Marks : 100

I.	(a)	Explain the three basic types of electrodes that can be used for the measurement of bioelectric potentials.	(10)
	(b)	Draw and explain an action potential waveform.	(8)
	(c)	What is nerve conduction velocity?	(2)
		OR	
II.	(a)	Explain EEG waveforms for different conditions of the brain.	(10)
	(b)	Describe two types of electrodes that can be used for short term ECG recording.	(8)
	(c)	What is the major advantage of floating type skin surface electrode?	(2)
III.	(a)	With figures explain Bipolar, Unipolar and Average mode EEG recording configurations.	(10)
	(b)	With a block diagram explain a computer aided ECG machine.	(10)
		OR	
IV.	(a)	Explain the principle of a fiber optic face plate CRT UV recorder.	(10)
	(b)	Explain a set up that can be used to record potentials in muscle fibers.	(10)
V.	(a)	Discuss the classification of pacemakers based on their modes of operation.	(10)
	(b)	With a suitable block diagram explain a solid state surgical diathermy machine.	(10)
		OR	
VI.	(a)	What is a defibrillator? Bring out the difference between internal and external defibrillators.	(10)
	(b)	Draw the block diagram of a demand type synchronous pacemaker and explain.	(10)
VII.	(a)	Draw and explain the schematic diagram for digitization of a thermogram.	(10)
	(b)	Explain the principle of CT scanning.	(10)
		OR	
VIII.	(a)	Draw and explain the block diagram of a real time computer based scanner that can be used for displaying ultrasound images.	(10)
	(b)	What are the basic NMR components? Explain.	(10)
IX.	(a)	Explain the modulation systems used in wireless telemetry for transmitting biomedical signals.	(10)
	(b)	What are implantable telemetry systems? Explain *any one*.	(10)
		OR	
X.	(a)	Explain a radio telemetry transmitter that can be used for detecting and transmitting ECG and respiratory activity simultaneously.	(10)
	(b)	What is multi channel EEG telephone telemetry? Explain.	(10)

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