ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : MAY / JUNE 2010

REGULATIONS : 2007

SIXTH SEMESTER : ECE

070290078 - MEDICAL ELECTRONICS

TIME : 3 Hours **Max.Marks : 100**

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Give some examples of bioelectric signals
2. What do you understand by the term "reference electrode"?
3. Name the major physiological systems of the body.
4. List the names and frequency bands of EEG signals.
5. What is electrophoresis?
6. Briefly explain indicator dilution method for cardiac output measurement?
7. What is inspiratory capacity of lungs?
8. State the different functions of pulmonary function analyzers?
9. What is R wave triggered pacemaker?
10. Mention the need for a defibrillator?
11. What is haemostasis mode of surgical diathermy
12. What is E-health in biomedical
13. Briefly explain basic principle of physiotherapy & electrotherapy?
14. Differentiate X-ray &CT imaging?
15. Give the principle of thermography?
16. Explain the principle of positron emission tomography?
17. List the applications of ultrasonic imaging system?
18. What is telli-stimulation?
19. Name the laser most commonly used for ophthalmic application. Why?
20. Mention the role of expert system in biomedical?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21.	a	Explain operation of ECG machine with neat block diagram	6
	b	With neat diagram explain the operation of digital cardio scope patient monitoring system	6
22.	a	With neat diagram explain the principle of operation of Doppler shift blood flow meter.	6
	b	Explain the thermal dilution method for cardiac output measurement with neat diagram	6
23.	a	Explain the principle of operation of programmable pacemaker with neat block diagram.	6
	b	Describe the operation of implantable defibrillator with neat diagram	6
24.	a	Explain any one type of dialyzer unit.	4
	b	Discuss the operation of heart-lung machine with necessary diagrams.	8
25.		Explain the principle of operation of MRI imaging with neat diagram	

26.	a	Explain the operation of CT imaging technique with neat diagram.	6
	b	Discuss the principle of operation of ultrasonic imaging system.	6
27.	a	Explain the operation of arrhythmia monitoring system.	6
	b	Describe radio-pill telemetry system.	6
28.	a	Write short notes on the pattern recognition techniques in biomedical?	6
	b	Draw the block diagram of an EEG unit and explain the different parts in it.	6

*****THE END*****