U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

October 2024 Supplementary Examinations

Programme: B.E. **Semester: IV**
Branch: Medical Electronics Engineering **Duration: 3 hrs.**
Course Code: 23MD4PCDTE **Max Marks: 100**
Course: Diagnostic and Therapeutic Equipments

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

SUPPLEMENTARY EXAMS 2024

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		MODULE - I	CO	PO	Marks
1	a)	How are bioelectric potential generated. Explain with a typical cell potential waveform.	CO1	PO2	**08**
	b)	Explain the need for bio- amplifier.	CO2	PO2	**04**
	c)	Discuss the indirect type of blood pressure measurement.	CO2	PO2	**08**
		OR			
2	a)	Discuss the electrical activity associated with one contraction in a muscle.	CO2	PO2	**08**
	b)	Explain the working of an isolation amplifier.	CO2	PO3	**04**
	c)	Discuss the principle of measurement of heart rate.	CO3	PO3	**08**
		MODULE - II			
3	a)	Discuss the blood pH measurement.	CO3	PO3	**10**
	b)	With a block diagram explain Ultrasonic blood flow meter(Doppler type).	CO3	PO3	**10**
		MODULE - III			
4	a)	Define pacemaker. Explain the working of external pacemaker.	CO2	PO2	**10**
	b)	Discuss DC defibrillator with synchronizer.	CO2	PO2	**10**
		OR			
5	a)	Explain cardiac output measurement by indicator dilution method.	CO2	PO2	**10**
	b)	Define Spirometer and explain basic water sealed Spirometer.	CO2	PO2	**10**
		MODULE - IV			
6	a)	With a block diagram explain the working of short wave diathermy machine.	CO2	PO2	**08**

		b)	Sketch and explain different current waveforms employed in electrotherapy.	*CO2*	*PO2*	**06**
		c)	Discuss the common hazards due to electric shocks in electro medical equipments.	*CO2*	*PO6*	**06**
			MODULE - V			
	7	a)	Explain the principle of Haemodialysis and the working of hollow fiber Haemodialyzers.	*CO2*	*PO2*	**08**
		b)	Discuss the types of ventilators and explain the functional diagram of positive pressure ventilator.	*CO2*	*PO2*	**06**
		c)	Explain the working of disc type of oxygenators.	*CO2*	*PO3*	**06**

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SUPPLEMENTARY EXAMS 2024