

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth Semester

Biomedical Engineering

BM3591 - Diagnostic and Therapeutic Equipment

Regulations - 2021

Duration: 3 Hrs

Maximum: 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	State the purpose of Holter monitor.	RE	1	2
2.	Distinguish between internal and external pacemaker.	AN	1	2
3.	What is meant by evoked potential?	RE	2	2
4.	Give the principle of Magneto Encephalo Graph.	UN	2	2
5.	List the fatigue characteristics of muscles.	AN	3	2
6.	Give the clinical applications of pedobarograph.	UN	3	2
7.	Define Airway resistance.	RE	4	2
8.	What is the function of a nebulizer?	RE	4	2
9.	What is Galvanic Skin Resistance?	RE	5	2
10.	Differentiate between air and bone conduction.	AN	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the construction and working of AC defibrillator with a neat sketch.	EV	1	13
	Or			
	b Explain a block diagram to illustrate the key components of an ECG machine and explain the function of each component in recording electrical heart activity.	EV	1	13
12.	a With a neat sketch explain the multichannel EEG recording system.	AN	2	13
	Or			
	b With a neat block diagram explain the EEG bio feedback instrumentation.	AN	2	13
13.	a Explain the EMG biofeedback instrumentation with a neat sketch.	EV	3	13
	Or			
	b What is nerve conduction velocity? Explain its measurement technique.	AN	3	13
14.	a Explain how a spirometer is used to measure lung volume.	EV	4	13
	Or			
	b Explain the types of ventilators. Compare and contrast them.	EV	4	13

15.	a	What is audiometry? Explain the functional blocks of the audiometer.	AN	5	13
		Or			
	b	Explain how basal skin resistance and galvanic skin resistance is measured. State the need of skin resistance measurement.	EV	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	What is synchronized cardioversion? With a neat sketch explain the construction and working of a synchronized DC defibrillator.	AN	1	15
		Or			
	b	Describe the standard 12 lead system used for recording ECG with a neat block diagram. Draw the typical ECG waveform and mark the regions in the waveform. Also analyze the normal and abnormal waves.	AN	1	15