

Reg.No.:



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 120023**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Sixth Semester

Biomedical Engineering

U19BM613 – DIAGNOSTIC AND THERAPEUTIC EQUIPMENT-I

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

**PART – A**

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Plot a normal ECG graph.	2	K1	CO1
2.	Explain about types of sounds in PCG.	2	K2	CO1
3.	What is MEG?	2	K1	CO2
4.	Classify EEG based on frequency.	2	K2	CO2
5.	What is biofeedback?	2	K1	CO3
6.	Give characteristics of Muscle stimulators.	2	K2	CO3
7.	Define Vital Capacity.	2	K1	CO4
8.	Difference between Nebulizer and inhalers.	2	K2	CO4
9.	Define Polygraphy.	2	K1	CO5
10.	What is GSR?	2	K2	CO5

**PART – B**

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Discuss about the different lead configurations used in ECG.	13	K2	CO1
(OR)				
b)	Illustrate the function of defibrillator and explain its operation.	13	K3	CO1

12. a)	Describe about 10-20 electrode system with neat diagram.	13	K2	CO2
	(OR)			
b)	What is meant by evoked potential? Explain the tools, techniques and significance of acquiring visual evoked potential.	13	K2	CO2
13. a)	What is meant by Nerve conduction velocity? Elaborate in detail about the techniques to measure the nerve conduction velocity.	13	K2	CO3
	(OR)			
b)	Explain the instrumentation of muscle and nerve stimulator.	13	K2	CO3
14. a)	Explain in detail about Spirometer with neat diagram.	13	K2	CO4
	(OR)			
b)	Illustrate the concept of Apnoea monitor.	13	K3	CO4
15. a)	Describe the recording setup of audiometer.	13	K2	CO5
	(OR)			
b)	What is the normal range of eye pressure? Explain in detail about the working and significance of eye tonometer.	13	K2	CO5

**PART – C**

(1 x 15 = 15Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	Illustrate the instrumentation of ECG and explain normal and abnormal waveforms.	15	K3	CO1
	(OR)			
b)	What is meant by Gait? Elaborate on the tools and techniques used in gait analysis.	15	K2	CO3