

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2024**

MEDICAL ELECTRONICS

[Maximum Marks:75]

[Time: 3 Hours]

PART - A

I. Answer all the following questions in one word or one sentence. Each question carries 'one' marks.

(9 x 1 = 9 Marks)

Module Outcome Cognitive level

1	List any two measuring electrodes used to measure ECG	M1.02	R
2	The normal EEG frequency content ranges from to Hz	M1.03	R
3 is a branch of medicine concerning the study of blood, blood-forming organs such as one marrow, and blood- related disorders and diseases.	M2.01	R
4	Define Blood Pressure(BP).	M2.02	R
5	Write the normal range of blood pO ₂ .	M2.03	R
6	List any two types of pacemaker.	M3.01	R
7 is a process that involves removal of chemical substances from the blood by passing it through tubes surrounded by semipermeable membranes.	M3.02	R
8	Write the two types of electric shocks that may occur in hospitals.	M4.04	R
9	CT is the abbreviation of	M4.01	R

PART - B

II. Answer any eight questions from the following. Each question carries 'Three' marks.

(8 x 3 = 24 Marks)

Module Outcome Cognitive level

1	Define bioelectric potential.	M1.01	R
2	Explain about limb lead configuration for ECG measurement.	M1.02	U
3	Explain about the various electrodes used for EMG measurement.	M1.04	U
4	List any three properties of Laser.	M2.04	R

5	Explain the Coulter counter method of bold cell counting.	M2.01	U
6	Draw the arrangement of Hemo-dialysis Machine.	M3.02	U
7	Compare external and internal pacemakers.	M3.01	U
8	Draw the block diagram of MRI scanner.	M4.02	U
9	Write the benefits of proper grounding.	M4.04	U
10	Explain Biotelemetry.	M4.03	U

PART - C

Answer all the questions from the following. Each question carries ‘seven’ marks.

(6 x 7 = 42 Marks)

Module Outcome Cognitive level

III.	Write notes on Surface electrodes, Needle electrodes and Micro electrodes. OR	M1.01	U
IV.	With block diagram explain EEG machine.	M1.03	U
V.	Explain any two direct methods of Blood Pressure measurement. OR	M2.02	U
VI.	Explain the working of partial pressure of Oxygen (pO ₂) analyser with diagram.	M2.03	U
VII.	Explain the working of pulse – oximeter with diagram. OR	M2.03	U
VIII.	Explain the principle of Laser and list any three application of Laser in medical field.	M2.04	U
IX.	With block diagram explain the working of ventricular synchronous demand pacemaker. OR	M3.01	U
X.	Draw the schematic diagram of microwave diathermic unit and explain.	M3.04	U
XI.	Explain different types of ventilators. OR	M3.03	U
XII.	Explain defibrillators and its needs.	M3.01	U
XIII.	Explain the physiological effect of electricity on human body. OR	M4.02	U
XIV.	With block diagram briefly explain about CT scanner.	M4.01	U
