TED (21) 6041A
(Revision - 2021)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 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 1 mark.

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Define electromyography.	M1.04	R
2	Write the need of electrode.	M1.01	U
3	Define diastolic pressure.	M2.02	R
4	Define LASER.	M2.04	R
5	List any two uses of respirator.	M3.03	R
6	List any two modes of operation of ventilators.	M3.03	R
7	Define fibrillation.	M3.01	R
8	Define macroshock.	M4.04	R
9	List any two applications of MRI.	M4.02	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Draw and explain the ECG waveform.	M1.02	U
2	Explain any three types of brain waves.	M1.03	U
3	Explain the features of needle electrodes.	M1.03	U
4	Draw the block diagram of blood gas analyzer.	M2.03	U
5	Write the need of pulsoximeter.	M2.03	U
6	Explain the principle of diathermy.	M3.04	U
7	List any three advantages of portable hemodialysis machine.	M3.02	R
8	Explain echo cardiography.	M4.01	U
9	Draw the block diagram of a bio-telemetry system.	M4.03	U
10	List any three properties of X-ray.	M4.01	R

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Explain the generation of bioelectric potential with diagram.	M1.01	U
	OR		
IV	Explain the block diagram of EEG.	M1.03	U
V	Draw and explain coulter counter method of blood cell counting.	M2.01	U
	OR		
VI	Explain blood pressure measurement using sphygmomanometer.	M2.02	U
VII	Draw and explain DC defibrillator.	M3.01	U
	OR		
VIII	Explain the working of hemodialysis with the necessary diagram.	M3.02	U
IX	List any six applications of LASER in medical field.	M2.04	R
	OR		
X	Explain the classification of blood cell.	M2.01	U
XI	Explain the working of CT scanner with block diagram.	M4.02	U
	OR		
XII	Write the precautions to be taken while handling X-ray machine.	M4.04	U
XIII	Explain short wave diathermy with diagram.	M3.04	U
	OR		
XIV	Explain ventricular synchronous demand pacemakers with suitable diagram.	M3.01	U

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