TED (15) -5044
(Revision- 2015)

A21-00490

Reg.No…….....
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL -2021.

MEDICAL ELECTRONICS

(Maximum Marks : 75) [Time : 2.15 hours]

PART–A

Marks

I. Answer **any three** questions in one or two sentences. Each question carries 2 marks.

1. List any two medical diagnostic equipment.
2. Write optimal blood pressure level in human body.
3. Write the use of respirators.
4. List two imaging systems used in medical field.
5. List the applications of bio-telemetry system. (3x2=6)

PART - B

II Answer **any four** of the following questions . Each question carries 6 marks.

1. With diagram, explain electrical activity of heart.
2. Explain action potential and resting potential with diagram.
3. Explain indirect method of blood pressure measurement.
4. Explain the Properties of Laser.
5. Explain the need for Defibrillators.
6. Draw the block diagram of single channel bio telemetry system.
7. List the electrical safety considerations for medical equipment.

[4x6 =24]

PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

UNIT I

III (a) Draw and explain ECG recording setup. (8)

(b) Explain Electrical activity associated with contraction in a muscle. (7)

OR

IV (a) Explain the setup for EMG measurement using block diagram**.** (8)

(b) Draw and explain the physiological nature of ECG Wave. (7)

UNIT- II

V (a) Explain blood cells and their classification. (6)

(b) Draw and explain Argon Laser in medical field. (9)

OR

VI (a) Explain the principle of operation and applications of laser. (9)

(b) Explain the different methods of blood cell counting. (6)

UNIT- III

VII (a) Explain the working of DC Defibrillator. (8)

(b) Explain different methods of diathermy methods. (7)

OR

VIII (a) Explain the functions of a Dialysis Machine. (7)

(b) Compare pressure cycled and volume cycled ventilators. (8)

UNIT – IV

IX (a) Define the principle of operation of X-Ray machine with diagram. (9)

(b) Explain the basic components of NMR imaging system. (6)

OR

X (a) Draw and explain the working principle of CT scanner. (9)

(b) Explain the working principle of an ultrasonic imaging system. (6)

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