TED (15) – 5044

(REVISION — 2015)

Reg. No. .....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

MEDICAL ELECTRONICS

[*Time* : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Name any two electrodes used for measuring ECG.
2. List the properties of laser.
3. What are the modes of ventilators ?
4. List the applications of CT.
5. Define systolic blood pressure. (5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the generation of action potential.
2. Explain with neat diagram of ND - YAG LASER.
3. Compare AC and DC defibrillation.
4. Define macroshock and microshock.
5. Explain the block diagram of biotelemetry system.
6. Explain shortwave diathermy treatment.
7. Write short note on surface electrode. (5 × 6 = 30)

Marks

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

Unit — I

III (a) Explain the block diagram of ECG recorder. 10

(b) Write short notes on microelectrodes. 5

Or

IV (a) Draw and explain the block diagram of EMG machine. 9

(b) Describe EEG recording techniques. 6

Unit — II

V (a) Explain automatic optical blood counting method. 8

(b) With block diagram explain blood gas analyzer. 7

Or

VI (a) Explain blood pressure measurements using sphygmomanometer. 8

(b) Explain the working of argon laser. 7

Unit — III

VII (a) Explain the functions of dialysis machine. 8

(b) What are different types of pacemaker ? 7

Or

VIII (a) Explain different types of diathermy equipments. 9

(b) State the use of respirators. 6

Unit — IV

IX (a) Explain the operation of X ray machine with block diagram. 9

(b) Explain the importance of the grounding. 6

Or

X (a) Explain the working principle of CT scanner with block diagram. 9

(b) List the application of magnetic resonance imaging. 6