

TED (15) – 5241

(REVISION — 2015)

Reg. No.

Signature

14

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

THERAPEUTIC EQUIPMENTS

[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. List the design requirements of an implantable pacemaker.
2. Name any two lasers used for surgical applications.
3. Define cycling mechanism of ventilators.
4. Give any four applications of infusion pump.
5. Draw a 'Lown' waveform.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe the magnetic programmable interface of a pacemaker.
2. Explain the principle and working of a defibrillator.
3. Explain modes of operation of surgical diathermy machine with diagrams.
4. Describe the application techniques of short-wave diathermy with diagrams.
5. Give an account on operating phases of a ventilator.
6. Explain the working of membrane oxygenators.
7. Name and explain any three types of endoscopic applications.

(5×6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Give an account on power sources of implantable pacemakers.
(b) Describe the working of ventricular synchronous demand pacemaker with diagram.

OR

- IV (a) Explain the principle and working of a cardioverter.
(b) Summarize the methods of pain relief through electrical stimulation.

UNIT — II

- V (a) Explain the principle and operation of the ESW lithotripter.
(b) Explain the principle of a laser.

OR

- VI (a) Describe the working of an ultrasonic diathermy machine.
(b) Give the basic operation of ultrasonic lithotripter.

UNIT — III

- VII (a) Describe the working of a ventilator with block diagram.
(b) Illustrate the setup and working of a centralized patient monitoring system.

OR

- VIII (a) Describe the block diagram of anaesthesia machine.
(b) Explain with sketch the working of roller pump used in heart lung machines.

UNIT — IV

- IX (a) Explain the working and applications of syringe infusion pump.
(b) Explain the principle and operation of endoscope.

OR

- X (a) Explain the principle and operation of Co-60 radiotherapy unit.
(b) Explain biological effects of radiotherapy.
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