

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

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. Define bio potential.
2. Define systolic pressure.
3. List the types of pacemaker.
4. Define macroshock.
5. List the applications of biotelemetry.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the various sub system of human body.
2. Explain the necessity of blood cell counting.
3. Explain the microscopic method of blood cell counting.
4. Compare AC and DC defibrillators.
5. Explain the use of respirators.
6. Explain the properties of X-ray.
7. Explain the importance of grounding.

(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) Explain the resting potential with suitable diagram. 8
 (b) Explain the different types of electrodes used for bio potential measurement. 7
 OR

- IV (a) Draw the ECG suction electrode and explain. 8
 (b) Draw the brain waves and explain. 7

UNIT — II

- V (a) Explain blood cell counting by centrifugal sedimentation method. 8
 (b) Write the applications of LASER in medical field. 7

OR

- VI (a) Draw the optical or dark field method for blood cell counting and explain. 8
 (b) Explain Nd-Yag LASER with energy level diagram. 7

UNIT — III

- VII (a) Draw the arrangement of hemodialysis machine and explain. 8
 (b) Explain the different types of ventilators. 7

OR

- VIII (a) Draw the block diagram of a ventricular synchronous pacemaker and explain. 8
 (b) Compare external and internal pacemakers. 7

UNIT — IV

- IX (a) Draw the block diagram of X-RAY machine and explain. 8
 (b) Explain ultrasonic imaging system. 7

OR

- X (a) Draw the block diagram of biotelemetry system and explain. 8
 (b) Mention the precautions to be taken while handling X-RAY machine. 7
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