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VI Semester Diploma Examination, April/May-2019

MEDICAL ELECTRONICS

Time : 3 Hours]

[Max. Marks : 100

- Instruction :** (i) Answer any six questions from PART – A. ($5 \times 6 = 30$)
(ii) Answer any seven questions from PART – B. ($10 \times 7 = 70$)

PART – A

1. Define and explain resting and action potential. 5
2. List the factors used in the selection of physiological transducers. 5
3. Explain the types of bipolar leads used in ECG. 5
4. Explain the different types of waveforms used in electrotherapy. 5
5. Explain the working of a digital hearing aid with block diagram. 5
6. Define : 5
 - (i) MCV
 - (ii) MCH
 - (iii) MCHC
 - (iv) MPV
 - (v) RDW
7. Illustrate BP measurement by using indirect method. 5
8. List the properties of Ultrasound. 5
9. List the applications of telemedicine. 5

PART - B

10. (a) What is electrode ? List the types and give one application of each. 5
(b) Draw the typical ECG waveform showing all the tuning details and explain each one. 5
11. Describe the working of ECG recording instrument with neat block diagram. 10
12. (a) Explain the working of Haemodialyser with a block diagram. 5
(b) List the types of lasers and their application in medicine. 5
13. Explain the working of spectrophotometer with neat diagram. 10
14. (a) Explain the working of digital pH meter. 5
(b) Explain the features of Blood flow meters. 5
15. (a) List the advantages and disadvantages of CT Scan Machine. 4
(b) Sketch and explain the block diagram of X-Ray Imaging Machine. 6
16. (a) Explain the principle of NMR (MRI) Imaging. 5
(b) List the preventive measures to prevent shock hazards in hospital. 5
17. (a) List the ill effects of E-Waste. 5
(b) Describe the working of single channel biotelemetry system. 5
18. (a) Explain the working of implantable pacemaker. 5
(b) List the physiological effects of electric current. 5
19. (a) List the effects of artifacts on ECG recording. 5
(b) Write a note on diathermy. 5
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