512 Register No.:

November 2022

Time – Three hours
(Maximum Marks: 75)

[N.B. 1. Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART – B.
2. Answer division (a) or division (b) of each question in PART - C.
3. Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Define action potential.
2. Define blood pH.
3. What are the different types of EEG waves?
4. Why do we need defibrillators?
5. What are the applications of endoscope?
6. Define biotelemetry.
7. Mention any two properties of laser beam.
8. What is the need of grounding?

PART – B

9. Write about the cell structure.
10. Define ECG and draw ECG wave.
11. Write about ECG amplifier shortly.
12. Draw the EEG waves.
13. Write about DC defibrillator.
14. What is meant by leakage current?
15. What is population inversion?
16. Write the importance of ventilators.

[Turn over.....

PART – C

17. (a) Explain the different types of electrodes used in clinical measurement with necessary diagrams.

(Or)

(b) Explain the electromagnetic flow meter with neat diagram.

18. (a) Explain the 10-20 lead system used in EEG with diagram in detail.

(Or)

(b) Explain the EMG used in measurement of conduction velocity of motor nerve.

19. (a) (i) Explain the operation of heart lung machine.
(ii) Briefly discuss about the working of endoscopy.

(Or)

(b) (i) Discuss the features of any two batteries used in pacemakers.
(ii) Explain the function of a modern ventilator with block diagram.

20. (a) Explain the bio telemetry system with its block diagram.

(Or)

(b) Explain the physiological effects of electric current regarding the safety of patients.

21. (a) Explain the operation of X-ray apparatus with its diagram.

(Or)

(b) Explain the working of CT scanner with its diagram.
