

PART B — (5 × 13 = 65 marks)

11. (a) Explain the mechanism of generation of action potential and write the necessary equations and mention different stages of action potential.

Or

- (b) Give a brief account on the following transducers
(i) Piezo electric transducers
(ii) Ultrasonic transducers

12. (a) Illustrate the working of spirometer with the experimental set up.

Or

- (b) Explain about the measurement of PCO₂ with the neat diagram.

13. (a) Draw and explain the block diagram of single ended chopper- stabilized operational Amplifier.

Or

- (b) Describe the lead systems and recording method of ECG.

14. (a) Explain the production of X-rays and draw the block diagram of X-ray machine.

Or

- (b) Draw and explain the single channel telemetry system suitable for transmission of an ECG.

15. (a) Explain the different types of pacemaker with the neat diagram.

Or

- (b) Draw and explain the simplified circuit diagram of a microwave diathermy machine.

PART C — (1 × 15 = 15 marks)

16. (a) Design a mutiparameter patient monitoring system used in ICCU unit.

Or

- (b) Describe the application of advanced 3D surgical techniques.