



- (f) Explain the ECG recorders :
- (i) Three Channel
  - (ii) Vector Cardiograph
2. Attempt *any four* parts of the following : (5x4=20)
- (a) Explain the operation of a pacemaker and why it is needed.
  - (b) What are the elements of intensive care monitoring unit ?
  - (c) Explain a method for Heart Sound Measurement.
  - (d) Explain a method of Blood Pressure Measurement and method of Blood Flow Measurement.
  - (e) Differentiate between reference electrodes, pH electrodes and Blood Gas Electrodes.
  - (f) Explain briefly the ECG system used for stress testing.
3. Attempt *any two* parts of the following : (10x2=20)
- (a)
    - (i) What are Ophthalmic Scans ?
    - (ii) What is Echo Encephalography.
  - (b) Write a short notes on the following :
    - (i) Humidifiers
    - (ii) Nebulizers
    - (iii) Aspirators
  - (c) Explain the measurement of breathing mechanics and spirometer.
4. Attempt *any two* parts of the following : (10x2=20)
- (a) Explain the principle of computerised axial tomography and compare its method of visualization with conventional X-ray methods.

- (b) (i) What are the four basic modes of transmission of Ultra Sound ?
- (ii) In a high speed CAT Scanner, 20 Scans are taken using a Fanbeam X-ray source and an array of 350 detectors. What is the maximum number of pixels that can result from this arrangement.
- (c) Explain Physiology of Respiratory System.

5. Attempt *any two* parts of the following : (10x2=20)

- (a) List some advantages and disadvantages of biotelemetry. Explain telemetry for ECG measurements during exercise.
- (b) (i) Name two different ways in which electricity can harm the body.
- (ii) What is the difference between electrical macroshock and microshock.
- (c) What is the basic purpose of the safety measure used with electrically susceptible patients.

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