

Con. 6365-11.

MP-3874

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions from the remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) **Illustrate** answers with sketches whenever **required**.

- Q1) (a) Draw and explain the schematic diagram of colorimeter. (05)
(b) Explain the concept of masking in audiometry. (05)
(c) Draw and explain any one type of blood cell counter. (05)
(d) Discuss the principle of reflection oximetry with neat diagram. (05)
- Q2) (a) Draw and explain the block diagram of complete blood gas analyzer. (12)
(b) Explain the different transducers used in audiometry. (08)
- Q3) (a) Explain the principle of pulse oximeter. (05)
(b) With the help of a schematic diagram explain the analog signal processing used in the pulse oximeter. (05)
(c) Explain the principle of electromagnetic blood flow meter along with necessary constructional diagram and required waveforms. (10)
- Q4) (a) Draw and explain the block diagram of a heart lung machine. (10)
(b) What is cardiac output? Explain dye dilution method of cardiac output measurement. (10)
- Q5) (a) What is spirometry? Explain different respiratory volumes and capacities with the help of a suitable diagram. (10)
(b) What is pneumotachometer? Explain the schematic diagram of electrospirometer for the measurement of flow and volume. (10)

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- Q6) (a) Explain the block diagram of anesthesia machine. (10)
(b) With the help of graphical representations explain the different modes of ventilator. (10)
- Q7) Write short notes on: (20)
(a) Centrifuge
(b) Chromatography
(c) Electrophoresis
(d) Spectrophotometer

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