

**Sample Test Paper-I**

**Course Name : Diploma in Medical Electronics**

**Course Code : MU**

**Semester : Fifth**

**Subject Title : Analytical Equipment**

**Marks : 25**

**17544**

**Times:1 Hour**

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**Instructions:**

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

**Q1. Attempt any THREE of the following.**

**(9 Marks)**

- a. State Lamberts Law. Give its mathematical expressions
- b. What safety precautions should be taken while using centrifuge? (any 06)
- c. List applications of hot air oven.(any 03)
- d. Draw block diagram of analytical instruments and label it.

**Q2. Attempt any TWO of the following.**

**(8 Marks)**

- a. What is colorimeter? Write its working with the help of neat diagram.
- b. Write the working of analytical type Ultracentrifuge.
- c. Draw & label the block diagram of Incinerator

**Q3. Attempt any two of the following.**

**(8 Marks)**

- a. With neat diagram describe the working of Ultrasonic cleaner
- b. Compare between colorimeter& spectrophotometer .(any four points)
- c. Write construction details of autoclave with the help of neat diagram.

Sample Test Paper-II

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Fifth

Subject Title : Analytical Equipment

Marks : 25

**17544**

Times:1 Hour

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**Instructions:**

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

**Q1. Attempt any THREE of the following.**

**(9 Marks)**

- a. Draw labeled diagram of PCO<sub>2</sub> electrode
- b. List different parts of electronic microscope
- c. Give classification of Chromatography based on its two main methods
- d. Draw labeled diagram of gas chromatography

**Q2. Attempt any TWO of the following.**

**(8 Marks)**

- a. What is electrophoresis? Draw diagram of the same.
- b. With neat diagram describe the method of PH measurement by blood gas analyzer.
- c. With neat diagram state capillary electrophoresis

**Q3. Attempt any two of the following.**

**(8 Marks)**

- a. Define chromatography & with the help of diagram write working of liquid chromatography
- b. Draw labeled diagram of TEM
- c. State working principle of electrical conductivity method for blood cell counting. Also state the mathematical condition to meet correct measuring of blood cell counting.

Sample Question Paper

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Fifth

Subject Title : Analytical Equipments

Marks : 50

17544

Time: 02 Hours

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**Instructions:**

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

**Q1. A) Attempt any THREE**

**(12 Marks)**

- a. List any four analytical Instruments based on beer & lamberts law.
- b. Give classification of autoclave & list two applications of the same.
- c. Draw a neat diagram of blood gas analyzer.
- d. State types of electronic microscope also list it's different parts.

**Q1. B) Attempt any ONE**

**(06 Marks)**

- a. With neat diagram explain the construction & working of transmission electron microscope.
- b. What is sterilization? Which sterilizing equipment's are used for following application and give the reason.
  - i) For sterilizing medical waste.
  - ii) For removing microdust, clots & blood stain on the instrument.
  - iii) Various powder in medical use.

**Q2. Attempt any FOUR**

**(16 Marks)**

- a. What is electrophoresis? List different parts of electrophoresis apparatus.
- b. With neat diagram write working principle of optical method for cell counting.
- c. Draw labeled diagram of incinerator.
- d. With neat diagram describe working principle of ultrasonic cleaner

- e. State the procedure for blood measurement using PO<sub>2</sub> electrode
- f. Write principle of working of liquid chromatography

**Q3. Attempt any FOUR**

**(16 Marks)**

- a. Describe working of single beam spectrophotometer with neat diagram.
- b. What is centrifuge? Write working of preparative ultracentrifuge.
- c. Explain Gas chromatography with the help of neat diagram.
- d. State Beer's & Lambert Law. State its Mathematical compression.
- e. Write working of flame photometer with neat diagram. List any two applications of the same