

22435

23124

3 Hours / 70 Marks

Seat No.

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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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following :** **10**
- List any two applications of colorimeter.
 - Give classification of electrophoresis.
 - List any two applications of freezer.
 - State the beat frequency method.
 - Draw a neat labelled diagram of nondispersive IR analyzer for Co measurements.
 - State working principle at centrifuge.
 - Draw equivalent circuit diagraph of conductivity cell.

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2. Attempt any THREE of the following : 12
- Draw constructional diagram of flame photometer.
 - List the stepwise procedure for sterilizing equipments in Hot air oven.
 - Draw a neat labelled diagram of pH meter.
 - Write a short teste on pollution monitoring station.
3. Attempt any THREE of the following : 12
- Draw a neat labelled diagram of Analytical Ultracentrifuge.
 - Describe working principle of dark field Blood cell counter with neat diagram.
 - Discuss the temperature compensation of conductivity measurement.
 - List any four gas pollutants present in atmosphere ? Write effect on health (one effect of each pollutant)
4. Attempt any THREE of the following : 12
- Draw a neat labelled diagram of Auto analyzer.
 - Draw a neat labelled diagram of ultrasonic cleaner and describe it.
 - Draw a neat labelled diagram of TEM.
 - State any four advantages of Electron microscope.
 - Draw a neat labelled diagram for measurement of sulphur dioxide.

- 5. Attempt any TWO of the following :** **12**
- a) Draw constructional diagram of spectrophotometer. List any four applications of spectrophotometer.
 - b) Draw neat labelled diagram of Autoclave. List any two applications of the same.
 - c) Define the term electrophoresis. Draw and explain PAGE Electrophoresis.
- 6. Attempt any TWO of the following :** **12**
- a) State Beer and Lamberts Law. List any two applications of –
 - i) Auto analyzer
 - ii) Flame photometer.
 - b) Write significance of pH meter. Draw null detector type pH meter. Describe its working.
 - c) List conductivity sensor for measuring conductivity. Draw a neat labelled diagram of any one sensor for measuring conductivity.
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