

Code: 9A10601

R09

B.Tech III Year II Semester (R09) Supplementary Examinations December/January 2015/2016

ANALYTICAL INSTRUMENTATION
(Electronics & Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Explain various sections in liquid chromatography with a suitable sketch, and list its applications.
- 2 (a) State Beers – Lambert law. Explain its significance in gas analysis.
(b) Explain principle of CO analyzer with a neat sketch.
- 3 (a) With the help of a neat sketch, explain about glass electrode in pH measurement.
(b) When a certain conductance cell was filled with a 0.01 M solution of KCl, whose specific conductance is $0.001409 \text{ } \Omega/\text{cm}$ at 25°C , it has a resistance of $161.8 \text{ } \Omega$ and when filled with 0.0050 M NaOH, it has a resistance of $190 \text{ } \Omega$. Calculate the cell constant.
- 4 Can we use the paramagnetic analyzer to analyze all the gases which exhibit paramagnetic property? Justify.
- 5 (a) Explain about the IR spectrophotometers with a neat sketch.
(b) List different sources and detectors used in IR spectroscopy at different ranges.
- 6 Explain the principle of operation of ESR in detail with the help of neat sketch.
- 7 Discuss about the atomic emission and absorption spectroscopy.
- 8 (a) Distinguish between the GM counter and the proportional counter.
(b) Discuss about the pulse height analyzer.
