

IV B.Tech I Semester Supplementary Examinations, April/May 2005

ANALYTICAL INSTRUMENTATION
(Electronics & Instrumentation Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is pH? Explain the importance of pH measurement in process industries.
(b) Explain the principle of pH measurement.
(c) What is the role of buffer solution in pH measurement?
2. Explain the dissolved hydrogen measurement by using Katharometer principle.
3. List out the various methods used to estimate nitrogen oxides, explain any one method in detail.
4. (a) Explain in detail the chromatographic behavior of solutes?
(b) Explain in detail about the following
 - i. Column efficiency
 - ii. Band broadening.
5. Explain the principle of Fourier transform spectrometry. How is it adopted in IR methods of analysis?
6. (a) Explain briefly about flame photometry?
(b) Briefly discuss about the detectors of flame photometry?
7. (a) Explain about the working principle of Spin-de-coupler with necessary block diagram.
(b) Explain briefly about sensitivity enhancement for analytical NMR Spectroscopy.
8. Explain the constructional details and principle of operation of
 - (a) surface barrier detector.
 - (b) lithium drifted germanium detector.
