Code No: NR411001 **NR**

IV B.Tech I Semester Supplementary Examinations, April/May 2005
ANALYTICAL INSTRUMENTATION
(Electronics & Instrumentation Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) With neat schematic explain the working principle of Beckman zeromatic pH meter.
   (b) Discuss the temperature compensation arrangement in direct reading type pH meter.
2. (a) With neat sketch explain the dissolved oxygen electrode system.
   (b) With neat sketch explain the construction of hydrogen gas electrode.
3. How co laser can be used for the measurement of nitric oxide. Give a neat block diagram and explain the operation of each block clearly.
4. (a) Explain in detail the chromatographic behavior of solutes?
   (b) Explain in detail about the following
      i. Column efficiency
      ii. Band broadening.
5. (a) What is Non dispersive absorption type IR Technique - briefly explain.
   (b) By way of a schematic explain the operation of non dispersive dual channel absorption technique of IR spectrometer.
6. (a) Explain briefly about flame photometry?
   (b) Briefly discuss about the detectors of flame photometry?
7. (a) Explain about the general principle of operation of a mass Spectrometer with neat diagram.
   (b) With needed schematic diagram, explain about magnetic mass Spectrometer.
8. (a) Draw the schematic of Geiger counter and explain the principle of operation .
   (b) Describe with a neat sketch the constructional details and application of a proportional counter.

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