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R09

Code No: C8804

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech I Semester Examinations, April 2011

ANALYTICAL INSTRUMENTATION

(ELECTRONICS & INSTRUMENTATION)

Time: 3hours **Max. Marks: 60**

Answer any five questions

All questions carry equal marks

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1. a) Briefly bring out the various reasons for the need of instrumentation in analytical chemistry.
   b) With a neat schematic explain the principle of zeromatic pH meter. [12]

2.a) Explain briefly the principle and operation of UV visible spectro photo meter using littrow prism.
   b) Explain how the instrument is calibrated. [12]

3. Explain in detail the construction and working of atomic absorption spectrophotometer meter. [12]

4. a) Draw the schematic diagram of gas chromatographic system and describe its working principle.
   b) What are the different types of detections usually used with a gas chromatographic system? Describe a flame ionization detector in detail. [12]

5.a) briefly explain the principle involved in NMR spectrometry
   b) Explain in detail the construction of NMR spectrometer. [12]

6. What is a katharo-meter? Where is it used? With a neat diagram explain the instrument which uses the same. [12]

7. With a neat diagram explain the working of a NOX analyzer. [12]

8. Write short notes on
   a) GM counter b) itemization chamber [12]

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