

rgpvonline.com

Roll No

MTEI/MEDI - 205**M.E./M.Tech., II Semester**

Examination, December 2015

Instrumentation System Design*Time : Three Hours**Maximum Marks : 70*

- Note :** i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Write advantages of chemical instrumentation over classical methods.
b) Write and explain laws of Photometry (Beer and Lambert's law).
2. a) What do you understand by Chromatography? Write its classification.
b) How estimation of oxygen, hydrogen, methane, carbon dioxide is done in complex gas mixtures? Explain briefly.
3. a) Write and explain principle of Flame Photometry.
b) Discuss in brief : Hollow cathode lamps and Plasma excitation sources.
4. Write short notes on :
 - a) (UV-Visible) Spectrophotometer.
 - b) IR Spectrophotometer.

5. a) Discuss in detail the measurement of pH and conductivity.
b) Discuss in short working of Incubators, Stirrers and Densitometer.
6. a) Explain working principle of Mass Spectrometer (MS) in brief.
b) Discuss magnetic deflection type of mass analyser in brief.
7. Write short notes on :
 - a) X-ray Diffractometer.
 - b) Paramagnetic Oxygen meters.
8. a) Discuss in brief the basic components of analytical instruments.
b) Write short note on Zirconia-probe oxygen analyser.
