

*Ex-78a*

V. P. & R. P. T. P. SCIENCE COLLEGE  
VALLABH VIDYANAGAR – 388 120  
INTERNAL EXAMINATION - 2014  
US06CINV04

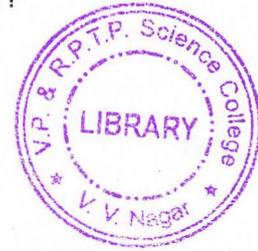
SPECTROSCOPY & BIOMEDICAL INSTRUMENTATION

Thursday, 13<sup>th</sup> March, 2014

Time: 3:30pm to 5:00pm  
Total Marks: 30

Note: The figures to the right indicate maximum marks.

- Q-1. **Short answer type (attempt any three)** [6]
- (a) Write equation of energy for electromagnetic spectrum. Show the relation between Absorbance and transmittance.
  - (b) What type of Instrument related errors occur in Spectrometer?
  - (c) Briefly explain Nernst filament as radiation source.
  - (d) What is Littrow mount Infrared monochromator?
  - (e) List six different Biomedical signals.
  - (f) What are advantages of Optical fiber sensors?
- Q-2. Draw block diagram of Absorption instruments and discuss radiation sources for UV-VIS range. (8)
- OR
- Q-2. Discuss High vacuum photo-emissive cells and photomultiplier tube. (8)
- Q-3. Describe Golay's pneumatic cell and Pyroelectric detector. (8)
- OR
- Q-3. Explain Optical Null method for IR spectrophotometer. (8)
- Q-4. Draw the block diagram of Bio-Medical Instrumentation System and explain function of each component. (8)
- OR
- Q-4. Explain Electrical Resistance Thermometer and Thermistor as temperature transducers. (8)



\*\*\*\*\*All the Best\*\*\*\*\*