

# C.U.SHAH UNIVERSITY

## Summer Examination-2016

Subject Name: Instrumental Methods of Analysis I

Subject Code: 4LS03IMA1

Branch: B.Sc.(Microbiology)

Semester: 3

Date: 26/04/2016

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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**Q-1 Attempt the following questions: (14)**

- a) Define electromagnetic radiation.
- b) Define fluorescence.
- c) What do you mean by diffraction?
- d) Enumerate zones of flame.
- e) What is Doppler effect?
- f) Sample cell of IR spectrometer is formed from \_\_\_\_\_.
- g) Give two examples of photosensitive detectors.
- h) What do you mean by photodiode?
- i) What is a polarizer?
- j) Name any two interference created during atomic absorption spectroscopy.
- k) Write full form of ATR.
- l) What is the main function of photomultiplier tubes in spectrophotometer?
- m) Define calibration.
- n) Define resolving power.

**Attempt any four questions from Q-2 to Q-8**

**Q-2 Explain all three laws and its deviations related to absorption of radiation. i.e., Lambert's Law, Beer's Law and the Beer-Lambert's Law. (14)**

**Q-3 Discuss principle, instrumentation and application of NMR in detail. (14)**

**Q-4 Attempt all questions (14)**

- a) Describe principle and application of atomic emission spectrometry. (7)
- b) Write a note on UV and visible absorption spectroscopy. (7)



