

Dr Ganapati V. Kumar

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
TEST -2 EXAMINATION- 2019  
M.Sc I<sup>ST</sup> Semester

COURSE CODE: 18MSIBT115  
COURSE NAME: GLP & BIO INSTRUMENTATION  
COURSE CREDITS: 03

MAX. MARKS: 25

MAX. TIME: 1.5 HR

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*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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Q1. Answer/Explain the followings.

[COIV] [1.5x6=9]

- System suitability test of HPLC
- Isocratic vs Gradient elution
- Four primary region of IR spectroscopy
- Woodward Fieser rule
- Chromophore and bathochromic shift
- In UV spectrum the electronic band is usually broad

Q2. a) Classify different analytical method based on interaction of electromagnetic radiation with material to be analyzed. [2]

b) What are different chromatographic techniques? Classify and explain them based on nature of their stationary phase. [3]

c) What is the origin of IR spectroscopy? Explain various factors that affect IR bands with suitable example. [COIV] [4]

Q2

a) Explain in detail the principle and application of mass spectroscopy. What inference one can make from isotopic ratios in mass spectroscopy. [5]

b) What is nitrogen rule and rule of thirteen? [COIV] [2]