

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

Department of Pharmacy (Pilani Campus)

Mid Semester Examination

First Semester 2022-2023 (CLOSED BOOK)

PHAG 534 – Separation and Structure Elucidation Techniques

Date: 3/11/2022

Duration: 90 Minutes

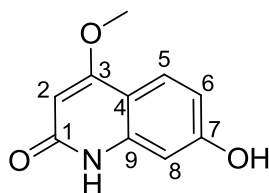
Max. Marks: 30

Instructions:

1. All questions are compulsory
2. Figures to right in square bracket indicates maximum marks
3. Write precise answers and use diagram wherever necessary
4. Marks will be given for correct answers (including spelling) with proper justification

1. In NMR spectroscopy why do we get signal for a given nucleus. Discuss in detail the ^1H and ^{13}C NMR signals for the following molecule. [Exclude OH and NH signals]

[8]



2. Answer the following questions in brief [5]
 - i. Why mass spectrometer is called as Universal detector
 - ii. Which type of buffers are preferred in LC-MS based method development
 - iii. How do you choose ionization source in mass spectrometric analysis
 - iv. How does triple quadrupole work
3. Why is validation of developed HPLC method necessary. Explain in detail. [4]
4. Describe in brief the tuning of mass spectrometer before real time analysis of samples [5]
5. How good optimization of GC method is achieved for following class of compounds [8]