

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

Department of Pharmacy (Pilani Campus)

End Semester Examination

First Semester 2023-2024(CLOSED BOOK)

PHAG 534 – Separation and Structure Elucidation Techniques

Date: 7/12/2023

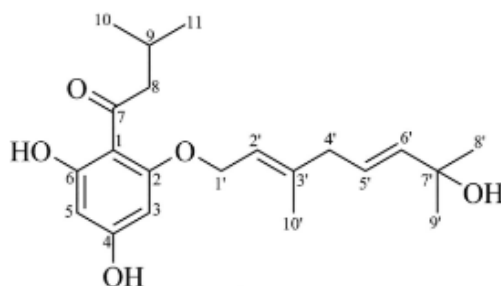
Duration: 180 Minutes

Max. Marks: 50

Instructions:

1. All questions are compulsory
2. Write precise answers and use diagram wherever necessary

1. What challenges you may anticipate while using GC-MS? Provide at least 5 examples [5]
2. Answer the following questions in brief [10]
 - i. MS tuning
 - ii. Selection of ionization source in mass spectrometric analysis
 - iii. Challenges in performing and analyzing ^{13}C NMR
 - iv. Coupling constant in ^1H NMR
 - v. Application of polymers in chromatographic process
3. What points are considered while developing an analytical method for [10]
 - i. Supercritical fluid chromatography?
 - ii. Capillary electrophoresis
4. Predict the following spectra for the active compound [15]



- i. ^1H & ^{13}C NMR
 - ii. DEPT 45, 90 and 135
 - iii. ^1H - ^1H COSY
 - iv. HSQC
 - v. HMBC
5. In general, how will you plan for a chromatographic separation process followed by structure elucidation of separated analyte [10]
