Weekly Assignment of Pharmaceutical Analysis-II (Prepared by Dr. Supriyo Saha)

1. Deduce the number of peaks present in CH₃-CH₂-CH₃.

2. If three adjacent protons are present of the proton of interest with spacing between two adjacent peaks is 0.3 PPM (for example, the peaks are at 6.0, 6.3, 6.6, and 6.9 ppm) with 400 MHz of external magnetic field. What is the Coupling Constant value?

3. Mention the characteristic peaks of methyl group in the structure of acetylacetone.

4. Mention the characteristic peaks of methyl group in the structure of Methylacetate.

5. Mention the characteristic peaks of methyl group in the structure of allyl bromide.

6. Write the correct wavenumber range for the following functional groups vibrations. (5 marks)

Functional group/type of	wavenumber range (cm ⁻¹)
bonds	
C=O stretching (ketones)	
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O-H stretching	
N-H stretching	
C=C stretching	