ME.FT 2nd year(Analytical techniques)
MST 1
Max. marks 35
Time 1h

Q1. What is the range of UV and IR spectra . What is the effect of these irradiation on a substance .(6)

Q2. State the Lambert and Beer law. Derive an expression for the Absorbance of a substance .(8)

Q3. An organic compound with molecular formula C_7H_8 burns with a sooty flame. It shows the following absorption bands in its infra- red spectrum

1) $3060cm^{-1}$
2) $3040cm^{-1}$
3) $2918,2870\ cm^{-1}$
4) $1500,1450\ cm^{-1}$
5) $750\ cm^{-1}$

Deduce the structure of the compound. (6)

Q4. In a UV spectra, ethylene shows an absorption band at 170nm whereas butadiene at 217 nm. Explain (5)

Q5. Calculate the absorption maximum in UV spectrum of 2,4 hexadiene (4)

Q6. Define and give an expression for precessional frequency. (4)

Q7. Define chemical shift . (2)