2020

CHEMISTRY — HONOURS — PRACTICAL

Paper : CC-12P

(Organic Chemistry)

Full Marks : 30

The figures in the margin indicate full marks.

1. Carry out the analysis of the supplied ^{1}H-NMR and IR spectra (**marked S_P and S_I**) and record the following in tabular form :

[A] For S_P :

(a) Identify each of the given signals marked **A, B** and **C** (which δ-value corresponds to which).

(b) Assign the relevant protons responsible for each of the marked signals.

(c) Mention the splitting pattern of each of the marked signals.

(d) Mention the number of proton(s) associated with each of the marked signals.

(e) Provide brief explanation for relative δ-values and splitting patterns of the marked signals.

3+3+3+3+6

[B] For S_I :

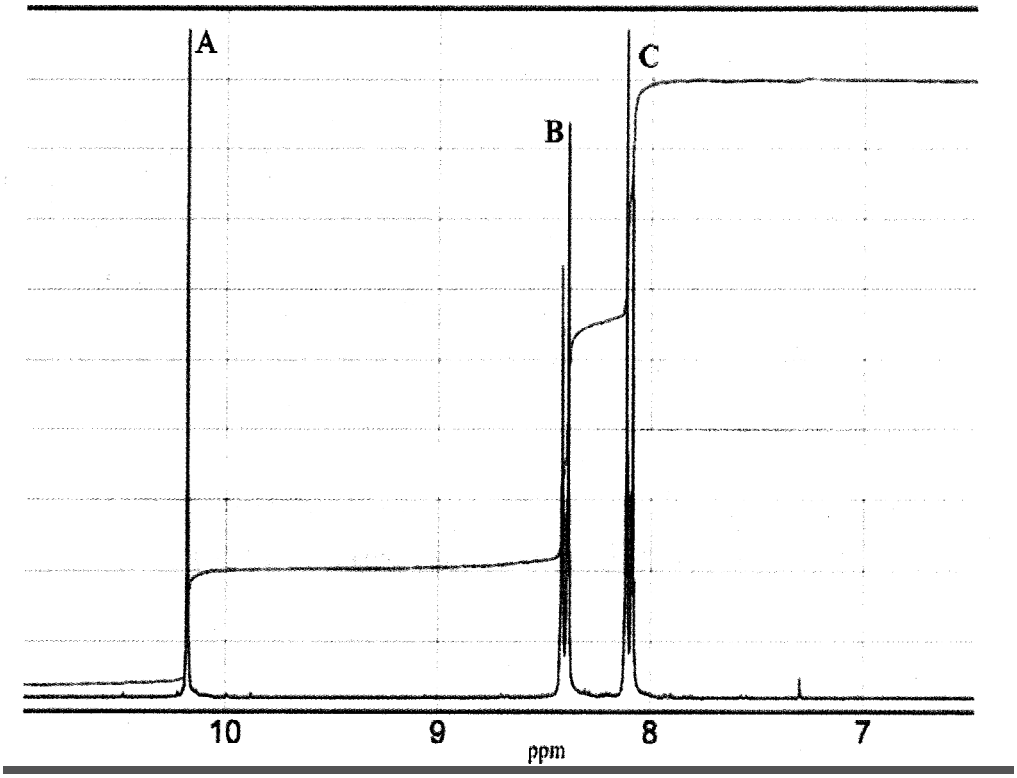
(a) Identify each of the given signals marked **D, E, F** and **G**.

(b) Assign the relevant bond vibrations responsible for each of the marked bands.

(c) Mention the nature of each of the marked bands.

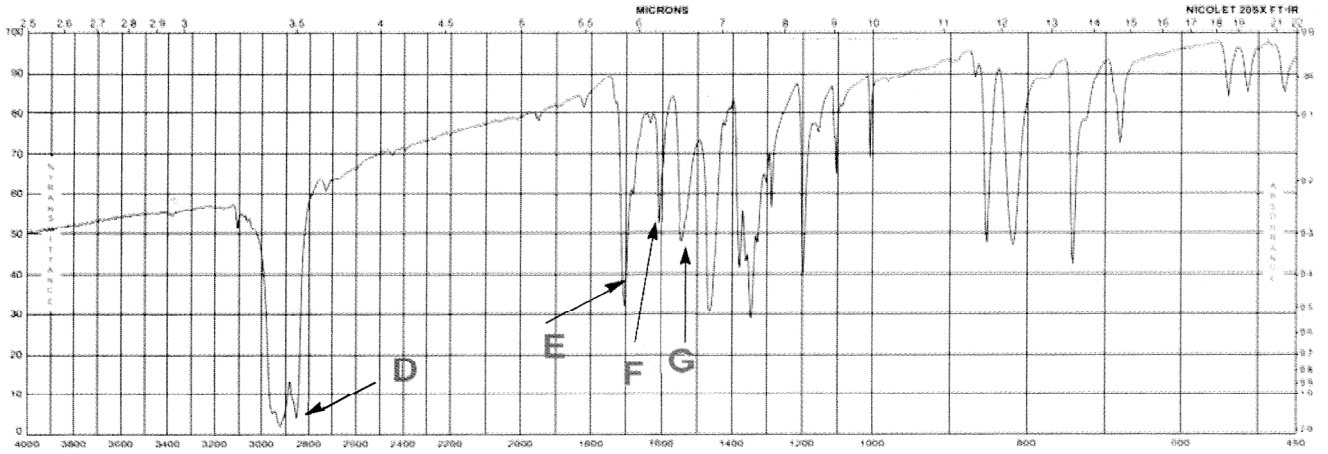
(d) Provide brief explanation for relative frequencies of the absorptions of the marked bands.

2+4+2+4



^{1}H-NMR Spectrum (S_P) of 4-nitrobenzaldehyde

δ (in ppm) : 10.17, 8.42 and 8.10



IR Spectrum (S_I) of 4-nitrobenzaldehyde