

AGWU DDINAIA

17/11/2023

PHARMACOLOGY

MEDICINE AND HEALTH SCIENCES

19 Given  $(M/z) = 105$

Maximum carbon atom =  $105/12 = 8.75 \approx 9$

Since the mass per charge ratio is odd, it is possible for nitrogen to be present in the compound.

$C_xH_yN$  then taking the carbon atoms to be 7

$$H = 105 - (8 \times 12) \\ = 7$$

Compound 1  $\rightarrow C_7H_7N$

$$IND = (2 \times 7) + 2 - 7 + 1/2 \\ = 5$$

Removing 4 atoms of hydrogen add one atom of oxygen

$C_8H_3NO$

$$IND = (2 \times 7) + 2 - 3 + 1/2 \\ = 7$$

b Organic compounds are important because all living organisms contain carbon

c Homocyclic compounds

- They contain only one type of atom including itself

Heterocyclic compounds

They contain at least different type of atom.

2ai Distance moved by substance =  $\frac{2.4}{12.2}$

Distance moved by solvent points =  $0.20$

ii Distance moved by substance =  $\frac{5.6}{12.2}$

Distance moved by solvent points =  $0.5$

$$\text{iii } \frac{\text{Distance moved by substance}}{\text{Distance moved by solvent front}} = \frac{8.9}{12.2} = 0.717$$

- b
- A: Aldehyde (alkanal)
  - B: unsaturated hydrocarbon
  - C: Aldehydes & ketones

- 3
- $R_x$  — alkyl halides  $\rightarrow$   $CH_3Cl$ ,  $CH_3CH_2Br$
  - $RCOOR$  — Ester  $\rightarrow$   $CH_3CH_2COOCH_3$ ,  $CH_3CH_2CH_2COOCH_3$
  - $ROH$  — Alkanol  $\rightarrow$   $CH_3OH$ ,  $CH_3CH_2OH$
  - $RCHO$  — Alkanal  $\rightarrow$   $CH_3CHO$ ,  $CH_3CH_2CHO$
  - $RCOOH$  — Alkanoic acid  $\rightarrow$   $CH_3COOH$ ,  $CH_3CH_2COOH$
  - $RNH_2$  — Amides  $\rightarrow$   $CH_3NH_2$ ,  $CH_3CH_2NH_2$
  - $RCOX$  — Acidic halides  $\rightarrow$   $CH_3COCl$ ,  $CH_3CH_2COBr$
  - $RCONH_2$  — Amides  $\rightarrow$   $CH_3CONH_2$ ,  $CH_3CH_2CONH_2$