ABDULRAZZAQ HINDU MAAJI
17/MHS01/002
CHM 104 Assignment
April 8th 2018
Medicine And Surgery
Medicine And Health sciences

1a Given (m/z) = 105
Maximum carbon atom = 105/12 = 8.75 ≈ 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 atom's to be 7
H = 105 − (84 + 14)
= 7
Compound 1 = $C_7H_7N$
IMA = (2 × 7) + 2 − 7 + ½
= 7

b There is hardly any work of life where we do not need organic compounds. The food we eat is essentially a mixture of organic compounds. The clothes we wear all are organic in character. The soaps, cosmetics, perfumes, oils, plastics, explosives, rubber, dye-stuffs, insecticides, papers, Antibiotics sulpha drugs, alkaloids, aspirin, iodoform, etc., are all organic compounds.

c

| Homocyclic compounds | Heterocyclic compounds |
| --- | --- |
| atoms of the same element bonded to each other forming a ring including itself. | Atoms of atleast two different elements bonded to each other forming a ring including carbon atoms. |
| examples; benzene, toluene etc. | azocine, pyran etc are examples |

2a $\frac{\text{Distance moved by substance}}{\text{Distance moved by solvent points}} = \frac{2.4}{12.2} = 0.20$

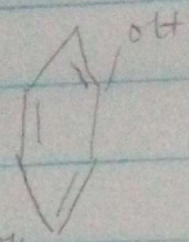
$\frac{\text{Distance moved by substance}}{\text{Distance moved by solvent points}} = \frac{5.6}{12.2} = 0.5$

$\frac{\text{Distance moved by substance}}{\text{Distance moved by solvent points}} = \frac{8.9}{12.2} = 0.7$

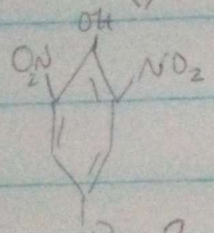
2b A: Aldehyde {alkanal}
B: Unsaturated hydrocarbons
C: Aldehydes and ketones

2c 2,4-Dinitrophenylhydrazine is used to qualitatively test for carbonyl groups associated with aldehydes and ketones.

2d ① phenol

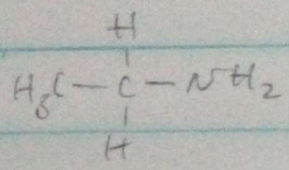


e.g;



$NO_2$ 2,4,6-trinitrophenol

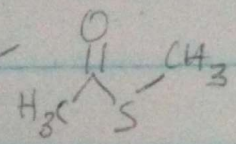
② Amine



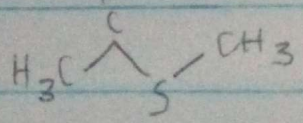
e.g $H_3C-CH_2-CH_2-NH_2$

1-propanamine

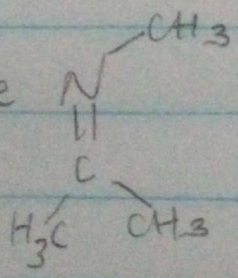
③ Thioester



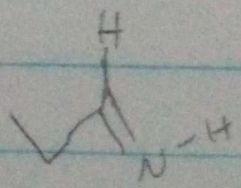
e.g



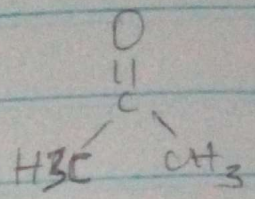
④ Imine



e.g propan-1-imine

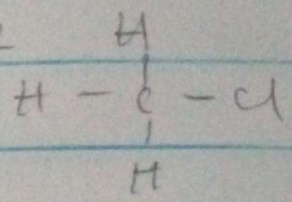


⑤ ketone



e.g $CH_3-C(=O)-CH_3$ propanon

⑥ Alkyl halide

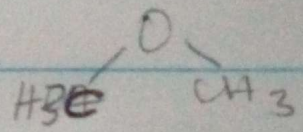


e.g

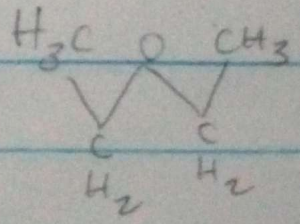
1-bromo butane

$CH_3-CH_2-CH_2-CH_2-Br$

⑦ ether



e.g



dimethylether.