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**MATRIC NO: 17/MHSO2/057**

1a) Ethylbenzene (C8H10),

Phenylmathanone (C7H5O)

1b) The following are the importance of organic compounds

1. Generation of energy from coal and petroleum products
2. Production of synthetic fibres like terylene as substitute for natural fibres
3. Production of drugs, dyes, perfumes, cosmetics e.t.c
4. Production of soap, detergent and paper
5. Production of explosives

1c)

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| **Homocyclic compound** | **Heterocyclic compounds** |
| Homocylic compounds are cylic compounds having atoms of the same element as ring members | Heterocylic compounds are cylic compounds having atoms of different elements as ring members including carbon atoms |
| Examples include benzene, cyclohexane, toluene, cyclohexanol, etc. | Examples include pyran, azocine, thiocane, etc |
| Ring contains atoms of the same element | Ring contains atoms of different elements |
| Contain atoms of the same element bonded to each other forming a ring | Contain atoms of at least two different elements bonded to each other forming a ring |

2a) Retardation factor = (distance moved by solute)/(distance moved by solvent)

Rf A =

Rf A = 0.1967

Rf B =

Rf B = 0.4590

Rf C =

Rf C = 0.7295

Therefore, A and B are more attracted to the mobile phase than C

2b) A is from the Aldehyde family.

B is from the Alkyne family.

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

2d

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| **Functional group** | **Examples** |
| Alkyl halides | Methyl chloride, butyl bromide |
| Alkanols | Methanol, ethanol |
| Ethers | Methoxyethane, phenoxybenzene |
| Aldehydes | Butanal, propanal |
| Ketones | 2-butanone, diphenylmethanone |
| Alkanoic acid | Methanoic acid, ethanoic acid |
| Esters | Ethyl ethanoate, ethyl propanoate |