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**MATRIC NO: 17/SI05/011**

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** |
| The ring of homocyclic compounds is made up of carbon atoms only | The ring of heterocyclic compounds is made up of more than one kind of atoms |
| Examples include benzene, cyclohexane, toluene, cyclohexanol, etc. | Examples include pyran, azocine, thiocane, etc |

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, diphenyl methanone |
| Alkanoic acid  | Methanoic acid, ethanoic acid |
| Esters  | Ethyl ethanoate, ethyl propanoate |