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**Electrical/Electronics Engineering**

**17/ENG04/058**

**QUESTION 1**

1a. i. C8H9

ii. C7H5O

iii. C7H7N

1B

* 1. In nucleic acid: nucleic acids are essential biopolymers for all life forms. They are composed of many elements but mainly coal and hydrogen, although they are also oxygen atoms in their sugars.
  2. In carbohydrates: A carbohydrate is a biological molecule consisting of carbon, hydrogen, and oxygen. In biochemistry, the term is synonymous with a group of element that may include sugars, cellulose, and starch.
  3. As the basis of food: Food materials are created from carbon compounds via carbohydrates, protein, and fats. All the food we consume is reconstituted material and extracts of plants or animals.
  4. In lipids: A lipid is a term used to define substances of biological origin that are soluble in solvents. It consists of a group of molecules that occur in nature like fats, waxes, sterols, monoglycerides and triglycerides, among others.
  5. In proteins: Protein is important in a diet to provide a source of amino acids, protein is broken down inside the stomach and intestines and the amino acids that make up the diet protein are absorbed inside the body and are used to make their own proteins.
  6. In hydrocarbons: They are organic compounds that are made up entirely of hydrogen and carbons.

1c.

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| HOMOCYCLIC COMPOUNDS | HETEROCYCLIC COMPOUNDS |
| This is a ring made up of carbon atoms only. | This is a ring that is made up of more than one kind of atom. |

**QUESTION 2**

1. Rf = distance moved by bonds = 2.4 = 0.20

Distance moved by solvent front 12.2

Rf = distance moved by bonds = 5.6 = 0.46

Distance moved by solvent front 12.2

Rf = distance moved by bonds = 8.9 = 0.73

Distance moved by solvent front 12.2

b. A is from aldehyde.

B is from alkenes.

c. 2,4-DNPH test is employed for aldehydes and ketones

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| Functional group | Examples |
| 1 Alkanes  2. Alkenes  3. Alkyl  4. Alcohol  5. Alkanal/Aldehydes  6.Carboxylic acid  7. Alkynes | Methane, Octane  Propene, butene  Butyl, Methyl  Butanol, Ethanol  Methanal, Propanal  Ethanoic acid, Butanoic acid  Methyne propyne |