

CARBON AND ITS COMPOUNDS

1. Which one of the following statement is incorrect about graphite and diamond? 2017
(1) Graphite is smooth and slippery.
(2) Diamond is good conductor of heat.
(3) Graphite is a good conductor of electricity.
(4) Physical and chemical properties of graphite and diamond are different
2. A compound X reacts with a compound Y, to produce a colourless and odourless gas. The gas turns limewater milky. When X reacts with methanol in the presences of concentrated H_2SO_4 , a sweet smelling substance is produced. The molecular formula of the compound X is
(1) C_2H_4O (2) $C_2H_4O_2$ (3) C_2H_6O (4) $C_2H_6O_2$
3. The molecular formula of carboxylic acid that differs from the rest is 2016
(1) $C_{13}H_{26}O_2$ (2) $C_2H_4O_2$ (3) $C_9H_{18}O_2$ (4) $C_7H_{12}O_2$
4. The number of structural isomers of the compound having molecular formula C_4H_9Br is 2015
(1) 3 (2) 5 (3) 4 (4) 2
5. The total number of electrons and the number of electrons involved in the formation of various bonds present in one molecule of propanal (C_2H_5CHO) are respectively.
(1) 32 and 20 (2) 24 and 20 (3) 24 and 18 (4) 32 and 18
6. A hydrocarbon has a molecular formula as C_6H_{12} . It does not react with hydrogen to give C_6H_{14} nor does it react with chlorine to give $C_6H_{12}Cl_2$. The hydrocarbon C_6H_{12} is 2014
(a) A saturated hydrocarbon
(b) An unsaturated hydrocarbon
(c) An open chain hydrocarbon
(d) A cyclo-alkane
(1) a and b (2) c and d (3) d and b (4) a and d
7. An organic compound is a clear liquid having a molecular formula C_4H_8O . It has an open chain structure. Without any carbon-carbon double bond. The compound can be
(a) an alcohol
(b) an ester

(c) an aldehyde

(d) a ketone

(1) a and b

(2) c and d

(3) b and d

(4) d and a

8. A compound X is obtained by the reaction of alkaline KMnO_3 with another compound Y followed by acidification. Compound X also reacts with compound Y in presence of few drops of H_2SO_4 to form a sweet smelling compound Z. The compound X Y and Z are respectively. 2013

(1) Ethanol, Ethene, Ethanoic acid

(2) Ethanoic acid, Ethanol, Ethylethanoate

(3) Ethanoic Acid, Ethanal, Ethene

(4) Ethanol, Ethanoic Acid, Sodium Ethanoate

9. Which of the following pairs of compounds of carbon will undergo combustion as well as addition reactions.

(1) CH_4 and C_2H_6

(2) $\text{C}_2\text{H}_6\text{O}$ and $\text{C}_3\text{H}_8\text{O}$

(3) $\text{C}_2\text{H}_4\text{O}_2$ and $\text{C}_3\text{H}_6\text{O}$

(4) C_2H_2 and C_3H_6

ANSWER KEYS

1.4

2.2

3.4

4.3

5.1

6.4

7.2

8.3

9.4