

CHEMISTRY STUDY MATERIALS FOR CLASS 10

(NCERT Based notes of Chapter -04)

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CARBON AND ITS COMPOUND

INTEXT QUESTIONS PAGE NO. 76

Q1. Would you be able to check if water is hard by using a detergent?

Ans: Detergents are ammonium or sulphonate salts of long chain carboxylic acids. Unlike soap, they do not react with calcium and magnesium ions present in hard water to form scum. They give a good amount of lather irrespective of whether the water is hard or soft. This means that detergents can be used in both soft and hard water. Therefore, it cannot be used to check whether the water is hard or not.

Q2. People use a variety of methods to wash clothes. Usually after adding the soap, they 'beat' the clothes on a stone, or beat it with a paddle, scrub with a brush or the mixture is agitated in a washing machine. Why is agitation necessary to get clean clothes?

Ans: A soap molecule has two parts namely hydrophobic and hydrophilic. With the help of these, it attaches to the grease or dirt particle and forms a cluster called micelle. These micelles remain suspended as a colloid. To remove these micelles (entrapping the dirt), it is necessary to agitate clothes.

EXERCISE QUESTIONS PAGE NO. 77 and 78

Q1. Ethane, with the molecular formula C_2H_6 has

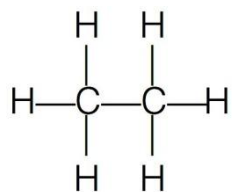
(a) 6 covalent bonds

(b) 7 covalent bonds.

(c) 8 covalent bonds

(d) 9 covalent bonds.

Ans: (b) Structure of C_2H_6 is

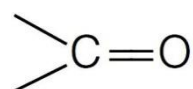


It is clear that it has 7 covalent bonds.

Q2. Butanone is a four-carbon compound with the functional group

- (a) carboxylic acid (b) aldehyde (c) ketone (d) alcohol.

Ans: (c) In butanone, the function group is ketone (one)



Q3. While cooking, if the bottom of the vessel is getting blackened on the outside, it means that

- (a) the food is not cooked completely (c) the fuel is wet.
(b) the fuel is not burning completely (d) the fuel is burning completely.

Ans: (b) The unburnt particles of the fuel present in smoke blacken the vessel from outside.

Q4. Explain the nature of the covalent bond using the bond formation in CH_3Cl .

Ans: Atomic number of **C = 6**; **H = 1**; **Cl = 17**

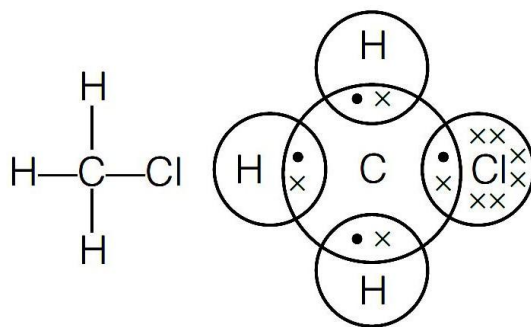
Electronic configuration

K L K L M K

C – 2, 4 Cl – 2, 8, 7 H – 1

C needs 4 electrons to complete its octet, H needs 1 and Cl needs 1 electron.

C shares its 4 electrons with each of the 3 H-atoms and 1 with chlorine atom. It thus forms 4 covalent bonds as shown.



Q5. Draw the electron dot structures for

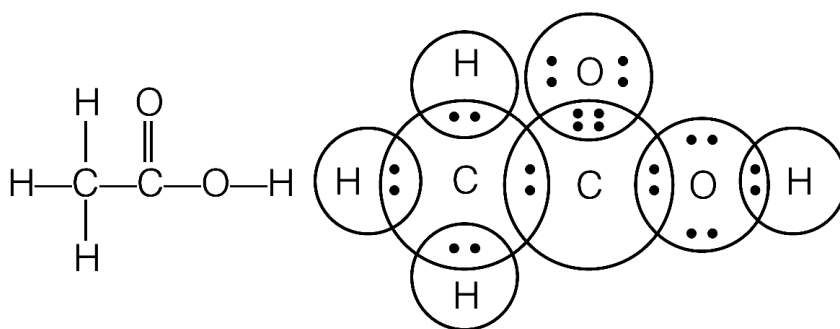
(a) ethanoic acid

(b) H_2S

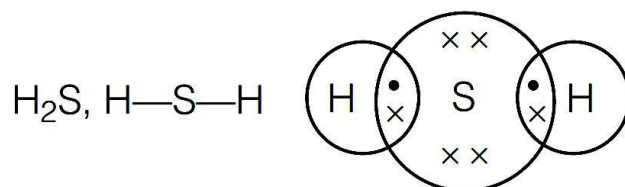
(c) propanone

(d) F_2

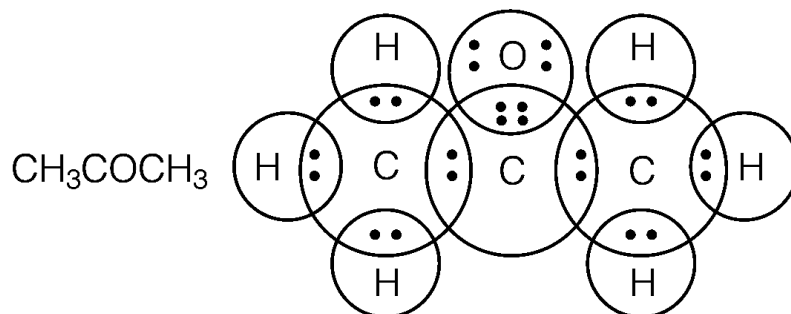
Ans: (a) Ethanoic acid.



(b) H_2S .



(c) Propanone.



(d) F_2

