INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH: 4 Carbon and its compounds

Name: _____ Date:_____ Class: XSec: ___

1. Give names of the following (a) An aldehyde derived from ethane

(b) Ketone derived from butane

(c) Compound obtained by the oxidation of propanol by acidified potassium dichromate.

2. The formula of an ester is $C_3H_7COOC_2H_5$. Write the formulae of the acid and alcohol from which the ester is prepared.

3. How is ethene prepared from ethanol?

4. Give reasons for the following;

a) Use of synthetic detergents causes pollution

b) Covalent compound have low melting and boiling point and do not conduct electricity

5. Two carbon compounds P and Q have the molecular formula C_3H_6 and C_3H_8 respectively. Which one of the two is most likely to show addition reaction? Justify your answer. Also give the chemical equation to explain the process of addition reaction in this case.

6. What is the role of concentrated H_2SO_4 in the esterification reaction?

7. Complete the following reactions;

a) $CH_3CH_2OH \xrightarrow{\text{Conc. } H_2SO_4}$

b) $CH_3COOH + NaHCO_3 \longrightarrow$

c) $CH_4 + Cl_2 \xrightarrow{\text{sunlight}}$

d) $CH_3COOC_2H_5 + NaOH \longrightarrow$

8. An organic compound 'X', is a liquid which often freezes during winter climate in cold countries, has the molecular formula $C_2H_4O_2$. On warming with ethanol in the presence of a few drops of concentrated H_2SO_4, a compound 'Y'with a sweet smell is formed.

a) Identify X and Y

b) Write a chemical equation for the reaction involved

c) How can we get compound 'X' back from 'Y'?

d) Which gas is produced when compound 'X' reacts with washing soda? Write the chemical equation?

9. What would be observed an adding 5% solution of alkaline $KMnO_4$ solution drop by drop to some warm ethanol taken in a test tube?

10. Intake of small quantity of methanol can be lethal. Comment.

11 What is soap? Explain the cleaning action of soap.

12. Describe an activity to form an ester.

13. Pure ethanoic acid is called glacial acetic acid. Why?

14. The structural formula of an ester is $CH_3CH_2COOCH3$ Write the name and structural formula of the products obtained when it is hydrolysed in the presence of acid.

15. Explain the structure of diamond and graphite.

16. How does saturated hydrocarbons differ from unsaturated hydrocarbons in combustion?

17. Write the number of covalent bonds in the molecule of butane.

18. Name the following compounds:

a) CH_3-CH_2-CO- CH_2-CH_3.

b) HCOOH

c) CH_3-CH_2-CH=CH_2.

d) CH_3-CH_2-C≡ CH

Assertion and reason questions

i) Both A &B are true and R is the correct explanation of A
ii) Both A &B are true and R is not the correct explanation of A
iii) A is true , but R is false
iv) A is false, but R is true

1) Assertion: Carbon has a strong tendency to either lose or gain electrons to attain noble gas configuration

   Reason: Carbon has 4 electrons in its outermost shell and has the tendency to share electrons with carbon or other elements

2) Assertion: Covalent compounds are generally poor conductor of electricity.

   Reason: Covalent compounds have cations and anions which can migrate to the opposite poles of an electrolytic cell.

3) Assertion: In a candle wax vapours burn in sufficient supply of oxygen, which leads to blue flame.

Reason: When oxygen supply is sufficient, then fuels burn completely producing a blue flame.

4) Assertion: n butane and isobutane are examples of isomers

Reason: In alkanes isomerism is possible in the compounds having 4 or more carbon atoms.