



# KJB SCIENCE SCHOOL

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**TEST - {CHEMISTRY : X } :- CHAPTER:- CARBON & ITS COMPOUND [set---A] M.M:-85**

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- Q.1 How many covalent bonds are there in a molecule of ethanol? [1]  
 Q.2 Molecular formula of a hydrocarbon is  $C_3H_8$ . Draw its complete structure and write its name. [1]  
 Q.3 Among the following which one have a triple covalent bond ?  $C_2H_6$ ,  $C_3H_4$ ,  $C_4H_{10}$  [1]  
 Q.4 Draw the electron dot structure of  $CH_3Cl$ (ii) Name following compound (a)  $CH_3-CH_2-Br$  (b)  $CH_3-CH_2-CH_2-C\equiv CH$ . [2]  
 Q.5 Which organic compound is added to make ethanol unfit for drinking purposes? What is the name of the mixture formed?  
 Q.6 (a) Write chemical name and formula of Vinegar? (b) What is glacial acetic acid. [2]  
 Q.7 (i) Define addition reaction. Write its one industrial application. Which of the following hydrocarbons undergo addition reaction?  $C_3H_4$ ,  $C_4H_{10}$ ,  $CH_4$ ,  $C_2H_4$ . (b) Why are covalent compounds generally poor conductors of electricity? [3]  
 Q.8 How would you distinguish experimentally between an alcohol & carboxylic acid on the basis of a chemical property. [2]  
 Q.9 Given a chemical test to distinguish between (i) Ethane & ethene (ii) Soaps & Detergents. [2]  
 Q.10 What is meant by a functional group in an organic compound? Give the structural formula of the functional groups in :  
 (a) Acetic acid. (b) propanone. Name the products formed when methane burns in (a) Sufficient supply of air.  
 (b) Insufficient supply of air. Write the chemical equations for above reactions. [5]  
 Q.11(a) Why in a molecule of nitrogen two atoms are joined by a triple bond?  
 (b) Give three points to distinguish between saturated and unsaturated hydrocarbons. [3]  
 Q.12 (a) What do you mean by homologous series? State any three characteristics of a homologous series.  
 (b) What is the valency of carbon? How it satisfies its valency in a molecule of methane? [3]  
 Q.13 a. Why does carbon form largest number of compounds? b. What happens when ethanol is burnt in oxygen? Give chemical equation also. c. Why is the conversion of ethanol to ethanoic acid an oxidation reaction? [3]  
 Q.14 (a) What is difference between the formula of the two successive members of a homologous series?  
 (b) What kind of flame is produced when unsaturated hydrocarbons are burnt over a flame?  
 (c) Give an example of an addition reaction. Write the chemical reaction also. [3]  
 Q.15 An organic compound A of molecular formula  $C_2H_4$  on reduction gives another compound B of molecular formula  $C_2H_6$ . B on reaction with chlorine in presence of sunlight gives C of molecular formula  $C_2H_5Cl$ .  
 a) Name the compound A, B & C b) Write the equation for the conversion of A to B. And name the type of reaction. [3]  
 Q.16 (a) Draw the electron dot structure of  $O_2$  &  $F_2$  molecule. (b) Explain the mechanism of cleaning action of detergents. [5]  
 Q.17 a) Complete the following equations. 1.  $CH_3CH_2COOH + CH_3OH \rightarrow 2. C_2H_5OH + 2Na \rightarrow 3. CH_3COOH + NaHCO_3$   
 b) State two harmful effects of drinking alcohol. (c) Why, methanol is much more dangerous to drink than ethanol?  
 c) What measures would you take to discourage people in your society who consume alcohol? [5]  
 Q.18 What is the cause of hardness of water? Why soap do not form lather with hard water? Mention the disadvantage of cleaning clothes with soap in hard water? [3]  
 Q.19 Give reasons for the following: (a) Unsaturated hydrocarbons show addition reactions but not saturated hydrocarbons.  
 (b) Carbon only forms covalent compounds. (c) What are covalent bonds? Draw the structure of Cyclohexane. [3]  
 Q.20 What is flame? Why a mixture of ethyne and air is not used for welding purpose. [2]  
 Q.21 (a) Draw any three structural isomers of pentane. (b) Write the name & formula of next homologue of (i)  $C_3H_8$  (ii)  $CH_3OH$ .  
 Q.22 (a) Explain why Carbon form compounds mainly by covalent bonding.  
 (b) What is detergent? Would you be able to check if water is hard by using a detergent? Justify your answer.  
 (c) What is saponification? Explain with the chemical equation. [5]  
 Q.23 An organic compound 'A' is an essential constituent of wine and beer. Oxidation of 'A' yields an organic acid 'B' which is present in vinegar. Name the compounds A & B & write their structural formula. What happens when A and B react in the presence of an acid Catalyst? Write the chemical equation for the reaction. [3]

- Q.24 (a) Name the following compounds (i)  $\text{CH}_3\text{-CH}_2\text{-CO-CH}_3$  (ii)  $\text{CH}_3\text{CHO}$  (b) Draw the structure for Benzene.  
 (c) (i) Complete the following equation  $\text{CH}_3\text{CH}_2\text{OH} + \text{O}_2 \rightarrow$  (ii) Name the above reaction. [3]
- Q.25 How can an ester be prepared in laboratory ? Write the chemical reaction involved in its preparation. [3]
- Q.26 Write balanced chemical equation for the following – (a) Methane is burned in sufficient air.  
 (b) Ethanol is treated with sodium. (c) Ethanoic acid is reacted with sodium hydroxide.  
 (d) Ethanoic acid is treated with Sodium carbonate. (e) Ethane is mixed with chlorine. [5]
- Q.27 Write the structural formula of corresponding alcohol & the acid of Ester with molecular formula  $\text{CH}_3\text{COOCH}_2\text{CH}_3$ .  
 (b) Mention the experimental conditions involved in obtaining ethene from ethanol and write the chemical equation. [3]
- Q.28 Name the functional group of organic compounds that can be hydrogenated. With the help of suitable example explain the process of hydrogenation mentioning the conditions of the reaction and any one change in physical property with the formation of the product. Name any one natural source of organic compounds that are hydrogenated. [3]
- Q.29 Can you compare pH value of dil HCl acid & dil acetic acid using: i) Blue litmus paper ii) Universal indicator? [2]
- Q.30 The type of reaction b/w Ethane and Chlorine is different from that b/w Ethene & chlorine. (i) What is the difference b/w these two type of reaction. explain (ii) What feature of ethene structure makes such a reaction possible? [3]