

## WORKSHEET 1

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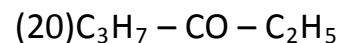
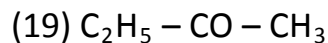
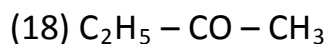
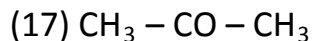
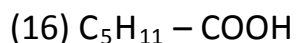
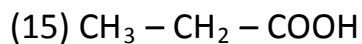
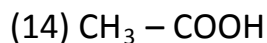
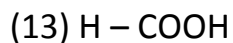
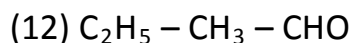
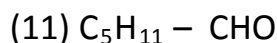
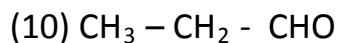
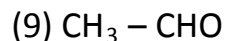
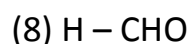
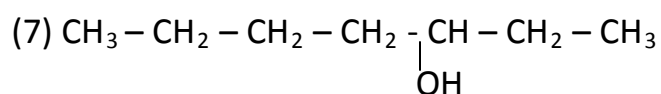
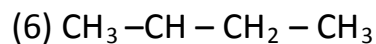
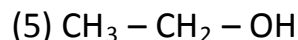
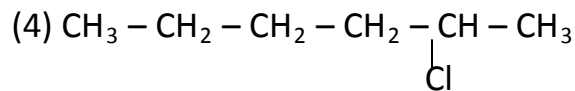
CLASS X

SUBJECT: CHEMISTRY

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### CHAPTER : CARBON AND ITS COMPOUND

- Why does carbon forms compounds mainly by covalent bonding?
- Name the three allotropes of carbon.
- Which of the following compounds can have a triple bond?  
 $C_2H_4$                        $C_3H_4$                        $C_3H_6$
- Which of the following compounds can have a double bond?  
 $C_4H_{10}$                        $C_5H_8$                        $C_5H_{10}$
- Give the names of one saturated cyclic hydrocarbon and one unsaturated cyclic hydrocarbon.
- Write the molecular formula and structure of benzene.
- Write the electron dot structure for the following compounds:  
(1)  $H_2$  (2)  $O_2$  (3)  $N_2$  (4)  $CO_2$  (5)  $S_8$  (6)  $H_2O$  (7)  $NH_3$  (8)  $CCl_4$   
(9)  $CH_4$  (10)  $C_5H_{12}$  (11)  $C_4H_8$  (12)  $C_5H_8$  (13)  $C_7H_{12}$   
(14)  $C_5H_{10}$  (15) Cyclopropane (16) Cyclobutane  
(17) Cyclopentane (18) Cyclohexane (19) Benzene
- Define the following with examples:
  - Hydrocarbon.
  - Saturated hydrocarbon.
  - Unsaturated hydrocarbon.
  - Homologous series.
  - Functional group.
- Write the IUPAC Name of the following:
  - $CH_3 - CH_2 - CH_2 - Cl$
  - $C_3H_7Br$
  - $C_2H_5I$



10. Draw the structures & electron dot structures for the following:

(a) Propanone.

(b) Butanal.

(c) Pentanal.

(d) Butanone.

(e) Butanoic acid.

(f) Pentanoic acid.

(g) Hexanal.

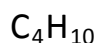
(i) Hexenol.

11. Which of the following hydrocarbons undergo addition reaction & why?



12. Explain briefly the substitution reaction of methane with chlorine ?

13. Which of the following will give addition reaction and why?

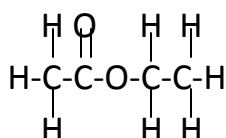


14. Give a test that can be used to differentiate chemically between butter and cooking oil ?
15. Name two catalysts which can be used in the hydrogenation of unsaturated compounds.
16. What happens when vegetable oils are hydrogenated?
17. State two disadvantages of incomplete combustion.
18. Explain why, ethene decolourises bromine water whereas ethane does not?
19. Name the product formed when hydrogen is added to ethane.
20. What is hydrogenation? What is its industrial application?
21. What is meant by a substitution reaction? Give an example (with equation) of the substitution reaction of an alkane.
22. Name a liquid carbon compound which is being used as an additive in petrol in some countries.
23. How is ethanoic acid obtained from ethanol? Write down the chemical equation of the reaction involved.
24. A neutral organic compound is warmed with some ethanoic acid and a little of conc.  $\text{H}_2\text{SO}_4$  vapours having sweet smell (fruity smell) are evolved. What type of functional group is present in this organic compound?
25. Explain why, methanol is much more dangerous to drink than ethanol?
26. What happens when sodium reacts with ethanol? (Give chemical equation).
27. How is ethanoic acid obtained from ethanol? (Give chemical equation)
28. Complete the following equation:  
 $\text{CH}_3\text{CH}_2\text{OH}$
29. What is meant by denatured alcohol? What is the need to denature alcohol?
30. An organic compound A is a constituent of wine and beer. This compound on heating with alkaline potassium permanganate forms another organic compound B which turns blue litmus to red. Identify the compound A. Write the chemical equation of the reaction that takes place to form the compound B. Name the compound B.

31. A neutral organic compound X of molecular formula  $C_2H_6O$  on oxidation with acidified potassium dichromate gives an acidic compound Y. Compound X react with Y on warming in the presence of  $Con.H_2SO_4$  to give a sweet smelling substance Z. What are X, Y and Z?
32. An organic compound X of molecular formula  $C_2H_4O_2$  gives brisk effervescence with  $NaHCO_3$ . Give the name of the formula of X?
33. Which of the following will give brisk effervescence with  $NaHCO_3$  & why?



34. The structural formula of an ester is



Write the formula of the acid and alcohol from which it is formed?

35. The molecular formula of an ester is  $C_3H_7COO_2H_5$ . Write the molecular formula of the alcohol and the acid from which it might be prepared?
36. Explain the cleansing action of soap?
37. What is a soap? Name one soap.
38. Describe the structure of a soap molecule with the help of a diagram.
39. What change will you observe if you test soap solution with a litmus paper?
40. What is detergent? Name one detergent.
41. Explain the formation of scum when hard water is treated with soap?
42. What is the advantage of detergent over soaps for washing clothes?  
Also state one disadvantage?
43. Describe the structure of a soap molecule with the help of a diagram?