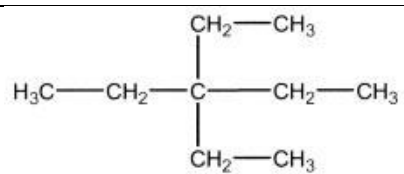
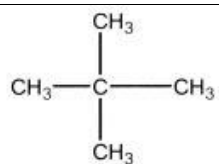
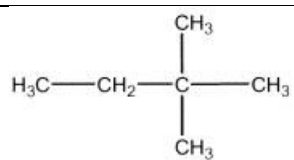
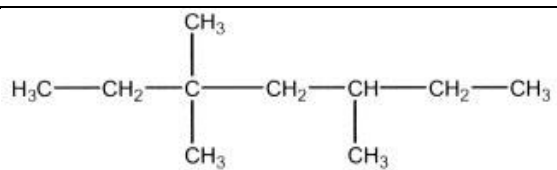


# BANGLADESH INTERNATIONAL TUTORIAL (UTTARA)

## WORKSHEET (CHEMISTRY)

CLASS: X

		Day -01	
<b>Week -01</b>	$\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$		
	$\begin{array}{c} \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$		
	$\begin{array}{c} \text{H}_3\text{C} - \text{CH} - \text{CH}_3 \\   \\ \text{CH}_2 - \text{CH}_3 \end{array}$		
	$\begin{array}{c} \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_2 - \text{CH}_3 \end{array}$		
	$\begin{array}{c} \text{CH}_2 - \text{CH}_3 \\   \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH} - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$		
	$\begin{array}{c} \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{H}_3\text{C} - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\   \\ \text{CH}_3 \end{array}$		



## Day -02

Draw the structural formula and line angle formula for the following molecules. Remember the following:

- Carbons on the end of a chain are attached to three hydrogen's
- Carbons in the middle of a chain are attached to two hydrogen's
- Carbons that have one branch attached are also attached to one hydrogen
- Carbons that have two branches attached are not attached to any hydrogen's

1.) Pentane

2.) Nonane

3.) 4-ethyl-octane

4.) 2-methyl-nonane

5.) 3,3-dimethyl-pentane

**Week-01**

6.) 3-ethyl-pentane

7.) 3-ethyl-2methyl-heptane

8.) 2,2,3-trimethyl-butane

9.) 3-ethyl-2,2-dimethyl-hexane

## Day-03

### Week-01

1. Name the following compounds.

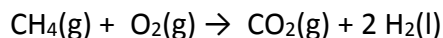
- a.  $C_2H_4$  or  $H_2C=CH_2$
- b.  $C_3H_6$  or  $CH_3CH=CH_2$
- c.  $C_4H_8$  or  $H_2C=CHCH_2CH_3$
- d.  $C_4H_8$  or  $CH_3CH_2=CH_2CH_3$
- e.  $C_5H_{10}$  or  $CH_3CH_2CH_2CH=CH_2$

2. Name the following compounds.

- a.  $CH\equiv CH$
- b.  $CH\equiv CCH_2CH_2CH_2CH_3$
- c.  $CH_3C\equiv CCH_2CH_2CH_3$
- d.  $CH_3CH_2C\equiv CCH_2CH_3$
- e.  $CH_3CH_2CH_2C\equiv CCH_3$
- f.  $CH_3CH_2CH_2CH_2C\equiv CH$

## Day-04

1. How many grams of CO<sub>2</sub> are produced in the combustion of 250.0 g of Methane, CH<sub>4</sub>?  
The molar mass of CO<sub>2</sub> is 44.01 g/mol and the molar mass of propane is 44.09 g/mol.



Ans:

## Week-01

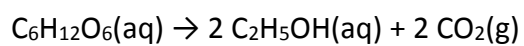
- 1) Determine the amount of oxygen produced when 2.5 g of KClO<sub>3</sub> decomposes.  
The molar mass of O<sub>2</sub> is 32.0 g/mol and the molar mass of KClO<sub>3</sub> is 122.6 g/mol.



Ans:

## Day-05

3. How many grams of  $C_6H_{12}O_6$  are needed to form 7.500 g of  $C_2H_5OH$ ? The molar mass of  $C_6H_{12}O_6$  is 180.156 g/mol and the molar mass of  $C_2H_5OH$  is 46.068 g/mol.



Ans:

## Week-01

4) Find the percentage by mass of Copper in Copper(II)Oxide.

Ans:

## Day-01

Week-02

- 1) An oxide of aluminum is formed by the reaction of 4.151 g of aluminum and 3.692 g of oxygen. Calculate the empirical formula for this compound.

Ans:

- 2) A compound has the empirical formula  $\text{CH}_2$ . If the relative formula mass is 56, work out the molecular formula.

Ans:

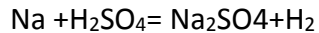
- 3) Calculate the number of moles of 20g of  $\text{Na}_2\text{SO}_4$

Ans:



## Day-02

1.204 g of Sodium is reacted with an excess of dilute  $\text{H}_2\text{SO}_4$  . (Ar:Na=23).



i) Calculate the amount in moles of Na which reacted.

Ans:

ii) Calculate the number of moles of Hydrogen produced in the reaction.

Ans:

## Week-02

iii) Calculate the volume of Hydrogen ( Measured at rtp) produced in the reaction.

Ans:

iv) Calculate the molecular mass of  $\text{Na}_2\text{SO}_4$ ?

Ans:

## Day-03

1) State the number of valence electrons in each of the following atoms, and then draw electron dot diagrams to represent them.

Na \_\_\_\_\_

O \_\_\_\_\_

Si \_\_\_\_\_

F \_\_\_\_\_

C \_\_\_\_\_

Na

O

Si

F

C

2) State the Octet rule. Write the electron configuration for the following atoms and ions, and explain how the Octet rule applies in each case:

Week-02

Octet Rule:

i)Na \_\_\_\_\_

Na<sup>1+</sup> \_\_\_\_\_

explain:

ii)O \_\_\_\_\_

O<sup>2-</sup> \_\_\_\_\_

explain:

## Day-04

1) State the Octet rule. Write the electron configuration for the following atoms and ions, and explain how the Octet rule applies in each case:

Al \_\_\_\_\_

Al<sup>3+</sup> \_\_\_\_\_

explain:

Week-02

N \_\_\_\_\_

N<sup>3-</sup> \_\_\_\_\_

explain:

Mg \_\_\_\_\_

Mg<sup>2+</sup> \_\_\_\_\_

explain:

## Day-05

1) How are ionic bonds and covalent bonds different?

Ans:

2) Describe the relationship between the length of a bond and the strength of that bond.

Ans:

3) Identify the type(s) of bond(s) found in the following molecules:

a.  $\text{CCl}_4$  \_\_\_\_\_

b.  $\text{Li}_2\text{O}$  \_\_\_\_\_

c.  $\text{NF}_3$  \_\_\_\_\_

d.  $\text{CaSO}_4$  \_\_\_\_\_

e.  $\text{SO}_2$  \_\_\_\_\_

f.  $\text{Mg}(\text{OH})_2$  \_\_\_\_\_

Week-02

Reference Book: Edexcel Int'l GCSE(9-1)  
(Chemistry) Student Book  
By-Jim Clark ,Steve Owen