

BANGLADESH INTERNATIONAL TUTORIAL(UTTARA)

WORKSHEET (CHEMISTRY)

CLASS: IX

Day -01	
Week -01	<p>1) The symbol for Uranium in a periodic Table as-</p> <p>I) Calculate the number of protons-</p> <p>Ans:</p> <p>II) Calculate the number of Neutrons-</p> <p>Ans:</p> <p>III) Calculate the number of Electrons –</p> <p>Ans:</p>
	<p>2) Chlorine has two isotopes, Chlorine-35, and chlorine-37-</p> <p>a) What is isotope?</p> <p>Ans:</p> <p>b) State the number of Protons, Neutrons, and Electrons in the two isotopes-</p> <p>Ans:</p>
	<p>3) A naturally occurring sample of the element Chlorine contains 20% ^{35}Cl and 80% of ^{37}Cl. Calculate the relative atomic mass?</p> <p>Ans :</p>

^{238}U

92

Day -02

Week-01

1) The question refers to the electronic configurations below-

A 2,4

B 2,8,8

C 2,8,18,18,7

D 2,8,18,18,8

E 2,8,8,2

F 2,8,18,32,18,4

i) Explain which of these atoms are in group 4 of the periodic Table.

Ans:

ii) state which of these electronic configuration represents Carbon.

Ans:

iii) Explain Which atoms are in period 5 in the periodic Table?

Ans:

iv) state which of these electronic configuration represents an element in group 7 in periodic Table.

Ans:

v) State which of these electronic configuration represents Noble gases.

Ans:

vi) State the name of element **E** and explain how you arrived at your answer?

Ans:

Day-03

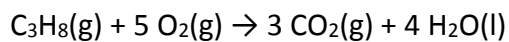
In the 1st 2 columns write the correct chemical formula, in the 2nd the correct name.

Week-01

<i>Name</i>	<i>Formula</i>	<i>Formula</i>	<i>Name</i>
Magnesium Fluoride		CaF ₂	
Lithium Chloride		KBr	
Calcium Chloride		CuCl	
Copper (I) Iodide		CuCl ₂	
Potassium Bromide		CuO	
Aluminum Oxide		AlCl ₃	
Iron(II) Oxide		AgCl	
Aluminum Sulfide		Mgl ₂	
Sodium Chloride		NaBr	
Barium Chloride		ZnCl ₂	
Iron (III) Sulfate		LiF	
Iron (III) Sulfide		PbO ₂	

Day-04

1. How many grams of CO₂ are produced in the combustion of 50.0 g of propane, C₃H₈? The molar mass of CO₂ is 44.01 g/mol and the molar mass of propane is 44.09 g/mol.



Ans:

Week-01

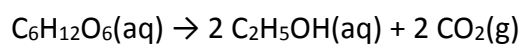
- 2) Determine the amount of oxygen produced when 0.549 g of KClO₃ decomposes. The molar mass of O₂ is 32.0 g/mol and the molar mass of KClO₃ is 122.6 g/mol.



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) Find the empirical formula of a compound containing 82.7% C and 17.3% H by mass.

Ans:

2) A compound has the empirical formula CH_2 . If the relative formula mass is 56, work out the molecular formula.

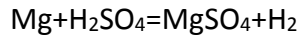
Ans:

3) Calculate the number of moles of 20g of MgO.

Ans:

Day-02

0.240g of Magnesium is reacted with an excess of dilute H_2SO_4 . (Ar:Mg=24).



i) Calculate the amount in moles of Mg 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 MgSO_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 _____

Na¹⁺ _____

explain:

ii)O _____

O²⁻ _____

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 _____

Al³⁺ _____

explain:

Week-02

N _____

N³⁻ _____

explain:

Mg _____

Mg²⁺ _____

explain:

Day-05

1) For each of the following pairs of elements, use electron dot diagrams to show the transfer of electrons between atoms, the formulas for ions formed, and the chemical formula of the ionic compound formed.

a) Sodium and fluorine

b) Calcium and chlorine

c) Magnesium and sulfur

d) Aluminum and oxygen

Week-02

Day-01

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. CCl_4 _____

b. Li_2O _____

c. NF_3 _____

d. CaSO_4 _____

e. SO_2 _____

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

Week-03

Day-02

7) Draw Lewis Structures for the following molecules:

a. CO_2

b. BeCl_2

c. H_2O

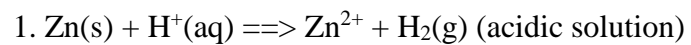
d. BF_3

e. CCl_4

Week-03

Day-03

Complete and balance the following redox reactions (skeleton equations) using the half-reaction method:

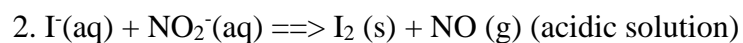


_____ (reduction)

_____ (oxidation)

_____ (overall)

Week-03



_____ (reduction)

_____ (oxidation)

_____ (overall)

Day-04

Which of the following terms would best classify a sample of pure sodium chloride?

- i) An element
- ii) A highly reactive metal
- iii) A poisonous gas
- iv) A compound

What feature of water molecules enables ionic substance to dissolve in water?

- i) The water molecules have a certain shape that allows them to surround the ions in solution.
- ii) The water molecules react with the ions.
- iii) The water molecules are sticky and can adhere to the ions.
- iv) The water molecules are polar and are attracted to the positive and negative ions, surrounding them.

Which of the following molecules would one expect to have a non-polar covalent bond?

- i) HCl
- ii) F₂
- iii) HF
- iv) ClF

How many electrons are being shared between the two carbon atoms in the compound ethyne? Ethyne has the Lewis structure: H-C≡C-H

- i) 1
- ii) 2
- iii) 3
- iv) 6

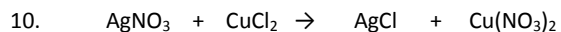
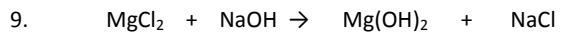
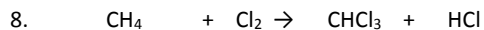
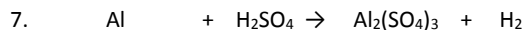
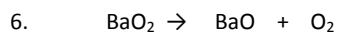
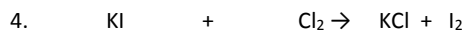
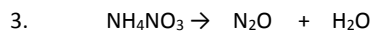
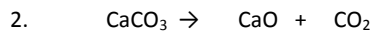
If a covalent bond were to be formed between a nitrogen atom (electronegativity 3.0) and an oxygen atom (electronegativity 3.5), which of the following statements would best describe such a bond?

- i) Non-polar covalent
- ii) Polar covalent where the oxygen atom carried the partial negative charge
- iii) Polar covalent where the nitrogen atom carried the partial negative charge
- iv) Polar covalent where the oxygen atom carried the partial positive charge.

Week-03

Day-05

Balance the following Equations :



Week-03

Reference Book: Edexcel Int'l GCSE(9-1)

(Chemistry) Student Book

By-Jim Clark ,Steve Owen