



**SUBJECT: CHEMISTRY**

**CLASS 10**

**CHAPTER 1 : CHEMICAL REACTIONS AND EQUATIONS**

Guidelines

Dear Students

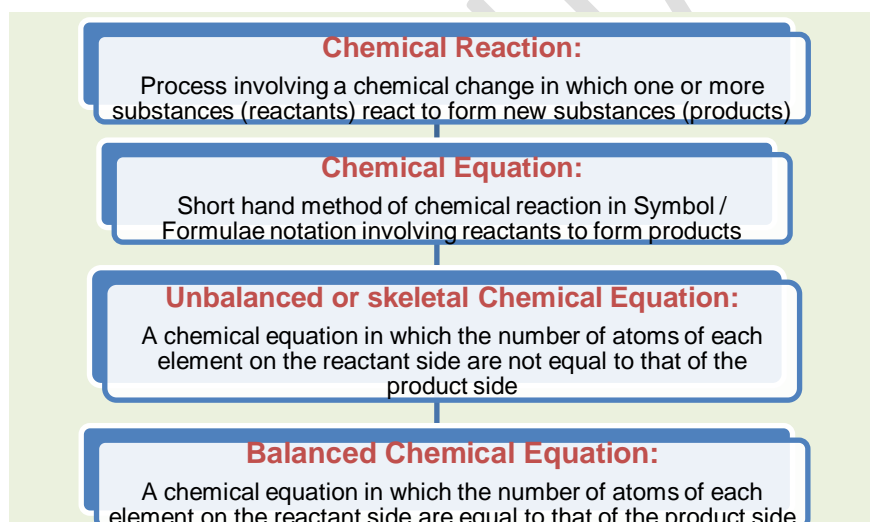
- Refer the content below, view the links, and attempt the assignment provided at the end in your chemistry notebook
- It would help you to read the NCERT before you begin to answer the questions.
- Link of the chapter is as follows:

<http://ncert.nic.in/textbook/textbook.htm?jesc1=1-16>

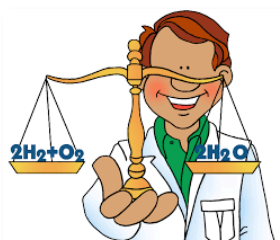
**SUB TOPICS:**

1. Recapitulation
2. Balancing of chemical equations
3. How to make a chemical equation more informative
4. Limitations of a chemical equation

**1. Recapitulation**



**2. Balancing of Chemical Equations**



a) Balancing equation by hit and trial method:

Step I: Write the chemical reaction in word form.

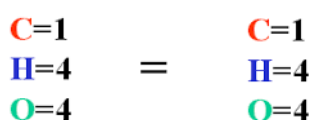
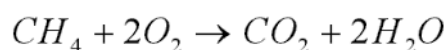
Step II: Write the unbalanced / skeletal chemical equation in symbol / formulae.

Step III: Count the number of atoms of all the reactants (LHS) and the atoms of all the products (RHS).

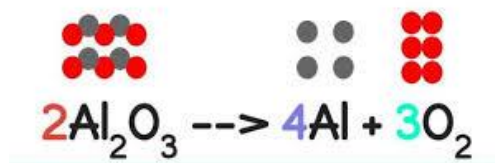
Step IV: Select the biggest formulae and balance the element with the highest number of atoms, followed by other elements until the atoms of all the elements are equal on both the sides.

Step V: Check the correctness of the balanced equation.  
(LHS = RHS)

Example 1:



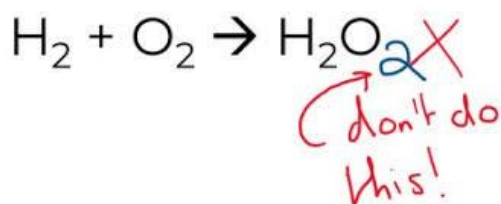
Example 2:



Example 3:

$2 \text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2 \text{H}_2\text{O}$		
Element	Before	After
Na	2	2
O	6	6
H	4	4
S	1	1

**Remember not to change the formula of the product / reactant by putting a subscript:**





B. Zinc + Silver nitrate  $\rightarrow$  Zinc nitrate + Silver

Skeletal equation: \_\_\_\_\_

Balanced equation: \_\_\_\_\_

C. Aluminium + Copper chloride  $\rightarrow$  Aluminium chloride + Copper

Skeletal equation: \_\_\_\_\_

Balanced equation: \_\_\_\_\_

D. Potassium bromide(aq)+Barium iodide(aq)  $\rightarrow$  Potassium iodide(aq)+Barium bromide(s)

Skeletal equation: \_\_\_\_\_

Balanced equation: \_\_\_\_\_

E. Zinc carbonate(s)  $\rightarrow$  Zinc oxide(s) + Carbon dioxide(g)

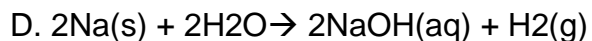
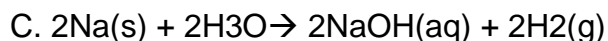
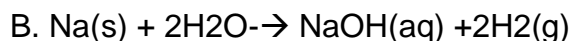
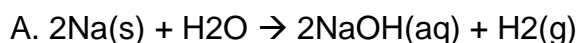
Skeletal equation: \_\_\_\_\_

Balanced equation: \_\_\_\_\_

Q 2) The given equation represents the reaction of Sodium metal with water:

Sodium + Water  $\rightarrow$  Sodium hydroxide + Hydrogen

Which of the following chemical equations represent a complete balanced chemical equation for the given word equation?



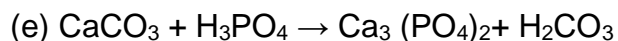
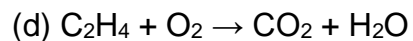
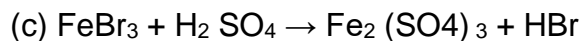
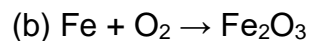
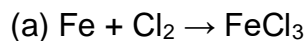
Q 3) Write a chemical equation (along with state symbols) which represents a complete balanced equation for the reactions:

- Barium chloride solution reacts with sodium sulphate solution to produce a precipitate of barium sulphate and sodium chloride solution.
- Magnesium ribbon is burnt in a gas jar containing nitrogen gas to form a white powder of Magnesium nitride.
- Solid Ferric oxide is heated with Aluminium metal to form molten iron and Aluminium oxide.

- d) Solid Silver Bromide breaks in the presence of sunlight to form silver metal and liquid bromine.
- e) Solid Zinc sulphide when heated in air forms zinc oxide and sulphur dioxide gas.

Q 4 a) How is a balanced chemical equation different from an unbalanced equation?  
b) Why do we need to balance a chemical equation?

Q 5) Balance each of the following equations:



BBPS, PITAMPURA