## CHEMICAL REACTIONS AND EQUATIONS

## LEARNING OBJECTIVES:

- Definition of a chemical change
- Characteristics of a chemical change& Examples
- Classification of chemical changes
- Chemical combination and Chemical decomposition
- Chemical displacement and Chemical double decomposition
- Photo chemical changes and Chemical Reactions
- Combustion & Electrolysis

### Real life Applications:

- $\Phi$  A plants applie a chemical reaction called Photo synthesis to convert CO<sub>2</sub> and water into wood and Oxygen. It is one of the most common everyday chemical reaction and also one of the most important since how plants produce wood for themselves and Animals and convert CO<sub>2</sub> and O<sub>2</sub>.
- $\Phi$  Aerobic cellular is the opposite process of synthesis in that energy molecules are combined with the oxygen. We breath to release energy needed by ourcells plus  $CO_2$  and water. Energy used by cell is chemical energy in the form **ATP**.

# Φ Hear is the overal equation Aerobic cellular respiration energy time is strike, burn a candle, build fire or light a grill, you see the combustion reaction.

- > Burning of paper is a chemical change.
- > Burning of wood is a chemical change.
- > Milk is converted in to curd.
- **Definition of a chemical change:** A change in which new substances are formed and which cannot be reversed by reversing the conditions is called a chemical change.
- **Characteristics of a chemical change:** New substances are formed and identity of the original substance is lost.

Properties of the substance before and after the change are different. Original properties disappear and new properties are observed. Change is brought permanently and change is irreversible.

**Examples of a chemical change:** Burning of paper is a chemical change. Burning of wood is a chemical change.

Rusting of iron is a chemical change. Burning of magnesium ribbon is a chemical change. Souring of milk is a chemical change.

Chemical changes are classified into four types : They are :

- 1) Chemical combination
- 2) Chemical decomposition
- 3) Chemical displacement
- 4) Chemical double decomposition

## 1. Chemical combination:

<u>Definition:</u> The chemical change in which two or more elements or compounds combine to form a new substance is called <u>"Chemical Combination"</u>.

Chemical Equation: 1. Sulphur + Oxygen 
$$\rightarrow$$
 Sulphur dioxide

$$S + O_2 \rightarrow SO_2$$

2. Calcium Oxide + Water  $\rightarrow$  Calcium hydroxide

 $CaO + H_2O \rightarrow Ca(OH)_2$ 

**Chemical Reactons & Equations** 

Apparatus:       Beaker, glass - rod.         Chemicals:       Calcium oxide (quick lime), Water.         Procedure:       Take a samil quantity of Calium oxide in a beaker and pour water till it is wet. Stir with a galss - rod.         Observation:       Touch the wall of the beaker. It will be warm. Quick lime dissoves in water forming slaked lime.         Conclusion:       The reactants, quck lime and water are compounds. Their properties are different. These substances combine to form a new substance slaked lime (Calcium , hydroxide). This new substace is also a compound. This new substace has new properties differing form those of the two compounds.         Equation: $CaO + H_2O \rightarrow Ca(OH)_2$ i)       Two elements react to form a new product.         Example:       Magnesium doxygen combine, when heated, to form magnesium oxide: 2Mg (s) + $O_2$ (g)	Activity: Experiment:					
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Calculum oxide       Water       (Slaked lime)         (Lime or Quicklime)       (Slaked lime)         (ii)       An element react with a compound to form a new product.         Example:       Carbon monoxide reacts with oxygen to form carbon dioxide:         2CO (g)       +       O <sub>2</sub> (g)         Carbon monoxide       Oxygen       Carbon dioxide         In this reaction, carbon monoxide compound reacts with oxygen element to form a new compound, carbon dioxide. So, this is a combination reaction.       2         2. Chemical decomposition:       Definition:       The chemical change in which a compound splits into two or more substances which I may be either elements or compounds is called, "chemical decomposition".         Chemical Equation:       Sodium Nitrate → Sodium Nitrite + Oxygen ↑         2NaNO <sub>3</sub> → 2NaNO <sub>2</sub> + O <sub>2</sub> ↑         Activity: Experiment:         Apparatus:       Hard glass test-tube, holder, spirit - lamp         Chemicals:       Sodium Nitrate.         Procedure:       Take a small quantity of sodium nitrate in a hard glass test - tube and hold it over the spirit - lamp with a test - tube hodler and heat it.         Observation:       Hold a burning splinter near the mouth of the test - tube and the splineter burns brightly showing that the evolving gas is Oxygen.         Conclusion:       Sodium nitrate is a compound and Oxygen is an element.         Chemical Equation:       Sodium	Celeium evide Weter					
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$\begin{array}{c} 2CO\left(g\right) + O_{2}\left(g\right) & \xrightarrow{Combination} & 2CO_{2}(g) \\ Carbon monoxide & Oxygen & Carbon dioxide \\ In this reaction, carbon monoxide compound reacts with oxygen element to form a new compound, carbon dioxide. So, this is a combination reaction. \\ \hline \\ $	<b>Example:</b> Carbon monoxide reacts with oxygen to form carbon dioxide:					
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<u>Chemical</u> <u>Equation</u> : Sodium Nitrate $\rightarrow$ Sodium Nitrite + Oxygen $\uparrow$ $2NaNO_3 \rightarrow 2NaNO_2 + O_2 \uparrow$	Socium nitrite is a compound and Oxygen is an element.					
$2NaNO_3 \rightarrow 2NaNO_2 + O_2 \uparrow$	<b>Chemical Equation</b> : Sodium Nitrate $\rightarrow$ Sodium Nitrite + Oxygen $\uparrow$					
VII- CLASS 2						

CHEMISTRY				Che	mical Reactons &	z Equations
A comp	ound decomposes	into two el	ements			
<b>Example:</b> When electric current is passed through acidified water, it decomposes to give hydrogen gas and oxygen gas. This reaction can be represented as :						
,   2ŀ	H <sub>2</sub> O( <i>I</i> )	$\xrightarrow{\text{Heat}}$	2H <sub>2</sub> (g)		+ $O_{2}(g)$	
l w	ater	L ,	Hydroger	l	Oxygen	
A chem	ical compound dec	composes ii	nto two co	mpounds.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
l Ex l ar	<b>cample 1.</b> When ca id carbon dioxide :	lcium carboi	nate is hea	ated, it deco	mposes to give ca	llcium oxide
CaCO <sub>3</sub> (	s)	$\xrightarrow{\text{Heat}}$	CaO(s)	+	CO <sub>2</sub> (g)	-
Calcium	carbonate		Calcium o	oxide	Carbon dioxide	
Limesto	one)		(Lime)			
3. Chemical C	The reaction in whi	ch an eleme	nt displace	e another el	ement from its con	nnound and
l <u>Dennicon.</u>	lace forming a new	compound is	s called ch	emical displa	coment	lipouriu ariu l
Fauation	Copper Sulphate +	Iron $\rightarrow$ Fer	rous Sulph	ate + Coppe	r	
	Cus	$F_{O} \perp F_{O} \rightarrow F$	$F_{0}SO = Cuprises$	ale coppe		
Activity: Exp	orimont <sup>.</sup>	$\mathbf{v}_4 + \mathbf{r} \mathbf{e} \rightarrow \mathbf{r}$		4	101	l
Apparatus:	Beaker					l
Chemicals:	Copper sulphate, a	shining iron	nail.	da		
Procedure:	Take copper sulpha	ite powder in	a beaker a	ind add wate	r so to make sulpha	ate solution.
	Place the iron nail i beaker.	n the solutio	n.Observe	after somet	ime what happens	in the
Observation:	Red deposit is formed	on the iron na	il. The blue s	solution turns lig	ght green in colour.	
Conclusion:	<i>Conclusion:</i> The copper atom in copper sulphate molecule is displaced by iron atom and occupies its palce. So Ferrous sulphate is formed in the solution. So the original blue solution turns light green. The displaced copper form copper sulphate deposits on the iron					
	nall. The deposit is	rea in colou nhata ± Iron	I.	e Sulphata 4	Coppor	
					Copper	
	<b>.</b>	$CuSO_4 +$	$Fe \rightarrow FeS$	$D_4 + Cu$		
4. Chemical o	When colutions of	<u>ion:</u> two solts are	mixed the	oro will bo a	mutual ovebange	of radicals
resulting in the	e formation of two n	ew compour	nds Such a	chemical rea	ctins are called "C	hemical
double deco	mposition".	on compour				
│ <u>Equation:</u> Pot	assium / iodide + Le	ad / Nitrate	ightarrow Lead / i	odide $\downarrow$ + Po	otassium / Nitrate	l
İ	$2K/I + Pb/(NO_3)_2 \rightarrow Pb I_2 \downarrow 2K NO_3$					
Activity : Exp	eriment:					Í
Apparatus:	Two test tubes.					
Chemicals:	Chemicals: Silver nitrate, Sodium chloride, Water.					
Procedure:   	By taking a small q perpare silver nitrate small quantity of so Add silver nitrate so	unatity of sil e solution. Lib odium chloric olution gradu	ver nitrate kewise prep de in anothe ually to the	in a test - tul pare sodium o er test - tube sodium chlo	be and adding suff chloride solution b and adding suffic ride solution.	icient water by taking a eint water.
Observation: Conclusion:	Formation of curd - Silver nitrate and S reaction the constit chloride is formed a	like precipita odium chlori uents of the as a precipita	ate in the te ide ar two o compound ate and soi	est - tube cor different com ls get mutua dum nitrate	ntaining sodium chl pounds. During ch Ily exchanges. As as a solution.	oride. nemical a rersult
VII- CLASS						3

Che	<u>Chemical Equation</u> : Potassium / iodide + Lead / Nitrate $\rightarrow$ Lead / iodide $\downarrow$ + Potassium / Nitrate						
į	$2K/I + Pb/(NO_3)_2 \rightarrow Pb \ I_2 \downarrow 2K \ NO_3$						
	<u>TLACIING IASK</u>						
Sing	le correct answer type questions						
i 1)	The reaction between magnesium and oxygen is.						
2)	Example for physical change.						
	A)Formation of snow B)Rusting of Iron C)Cooking of rice D)Curdling of milk						
3)	One compound change in to so many compounds and reversible.						
4)	A change will come along with chemical change.						
′ 	A)Composition B)Colour C)State D)All						
i <sup>5)</sup>	In atmosphere sulphurdioxide react with moisture to form sulphurous acid. This reaction is?						
	C)Chemical displacement D)Chemical double decomposition						
  6)	$2A\ell(OH)_{a(z)} \xrightarrow{D} A\ell_2 O_{2(z)} + 3H_2 O_{(z)}$						
	Which of the following statements is true for the above reaction?						
	A) A compound decomposes to form two elements.						
	B) A compound decomposes to form two new compounds.						
ļ	D) A compound decomposes to form another compound and an element.						
7)	The combination reactions may involve in the combination of :						
	A) Elements with another elements. C) Element with a compound D) All the above						
8)	Which of the following reactions illustrates a chemical combination between an element and a						
´ 	compound?						
ļ	A) $2HgO_{(s)} \longrightarrow 2Hg_{(\ell)} + O_2(g)$ B) $2KI + C\ell_{2(g)} \longrightarrow 2KC\ell_{(aq)} + I_{2(s)}$						
1	C) $2CO_{(g)} + O_{2(g)} \longrightarrow 2CO_{2(g)}$ D) Both 2 and 3						
9)	$2 Pb_3 O_{4(s)} \xrightarrow{\Delta} 6 PbO_{(s)} + O_{2(g)}$ illustrates a:						
	A) Chemical combination B) Chemical decombination						
	C) Chemical displacement D) Chemical double decomposition						
10)	What happens if Zinc strip dipped in $CuSO_4$ solution?						
   11)	A)Combination B)Double decomposition C)Decomposition D)Displacement A reaction is which two soluble compounds in solution react to form insoluble solid is. A)Neutralisation B)Precipitation C)Combination D)All						
12)	Some metals can not displace hydrogen from acids because.						
ļ	A)Those metals are more electropositive than hydrogen B)those metals are less electropositive than hydrogen						
1	C)both A & B D) None						
13) 	Which of the following reaction takes place at roomtemperature. A) Endothermic reaction B) Exothermic reaction C) both A & B D) None						
14) 	Fe + $CuSO_4 \longrightarrow FeSO_4$ + Cu Which of the following is true for the above reaction?A) Copper displaces ironB) Sulphur displaces copper						
VII-	VII- CLASS 4						



**Chemical Reactons & Equations** 



	C) A $\rightarrow$ Photo decomposition B $\rightarrow$ Electrolysis C $\rightarrow$ Photo decomposition. D) A $\rightarrow$ Thermal decomposition B $\rightarrow$ Photo decomposition C $\rightarrow$ Electrolysis.						
8.	$(A) + (AB) \longrightarrow (AC) + (B)$						
İ	The above reaction represents:						
İ	A) Simple displacement B) Decomposition C) Direct combination D) Double decomposition						
9.	Which of the following is not a single displacement reaction?						
	A) $Pb(NO_3)_2 + 2KI \rightarrow Pbl_2 + 2KNO_3$ B) $CuO + Mg \rightarrow MgO + Cu$						
10.	$CuSO_4$ (aq) + Zn(s) $\rightarrow$ A (aq) + Cu(s) Identify 'A'.						
	A) CuŠ B) ZnS C) $ZnSO_4$ D) ZnSO <sub>3</sub>						
111.	are:						
     12.	A) MgSO <sub>4</sub> , Cu B) MgS, Cu C) MgSO <sub>4</sub> , CuS D) MgS, CuS Study the following reaction:						
	$ZnO + 2HNO_3(dil) \longrightarrow Zn(NO_3)_2 + 2H_2O.$						
	Which of the following reactions is true for the above reaction.						
	C) It is a neutralisation reaction D) It is a catalytic reaction						
13.	The double displacement reaction in which one of the products is soluble salts and the other is   water is called:						
1	A) Combination B) Precipitation						
	C) Neutralisation D) Dissociation						
14. 	A) Copper displaces silver B) Silver displaces copper $[B]$						
	B) Nitrogen displaces copper D) Silver displaces nitrogen						
15. 	Fe + $2HC/ \rightarrow FeC/_2 + H_2$ , In this reaction, A) Hydrogen is more reactive than Iron						
į	B) Iron is more reactive than hydrogen						
	C) Both 1 and 2 D) None of these.						
16.	$2K + [I] \longrightarrow 2KOH + H_2$ $F_0 + 2HC( \longrightarrow [II] + [III]$						
l	$A I \rightarrow H_{2}O,  I \rightarrow FeC/_{a},  I  \rightarrow 2H_{a}$ $B I \rightarrow 2H_{a}O,  I \rightarrow FeC/_{a},  I  \rightarrow 2H_{a}$ $B I \rightarrow 2H_{a}O,  I \rightarrow FeC/_{a},  I  \rightarrow 2H_{a}$						
İ	$C) I \rightarrow 2H_2O, II \rightarrow FeCl_2, III \rightarrow 2H_2 \qquad D) I \rightarrow 2H_2O, II \rightarrow FeCl_2, III \rightarrow H_2 \qquad I$						
17. 	Chemical double displacement is also called:						
	B) Chemical displacement						
	C) Chemical double decomposition D) All the above						
10. 	A) Precipitation B) Neutralisation						
	B) Combination D) Decombination						
<u>Des</u>	criptive type						
19. 	1 atom of oxygen?						
<u>20.</u>	In chemical double displacement reaction how many compounds react to each other?						
V II-							



1	with statements (p, q, r, s) in <b>Column–II</b> . The answers to these questions have to be appropriately						
 	bubbled as illustrated in the following example.						
	If the correct matches are A-p,A-s,B	s-r,B-r	,С-р,С-q and	d D-s, then the correct bubbled 4*4 matrix			
	should be as follows:						
28.	Column-l	Coll	umn-II				
	a) $CO_2 + H_2O_2$	1)	HCO				
	b) $P_2O_5 + 3H_2O$	2)	2KOH				
	c) CaO + $H_2O$	3)	Ca(OH) <sub>2</sub>				
	d) $K_2O + H_2O$	4)	H <sub>2</sub> CO <sub>3</sub>				
		5)	$2H_{3}PO_{4}$				
29.	Column-l			Column-II			
	a) NaC/(aq)+AgNO <sub>3</sub> (aq) $\rightarrow$ AgC/(s)	)+Naľ	NO <sub>3</sub> (aq)	1) Neutralisation reaction			
	b) $NH_4OH(aq)+HC/(aq) \rightarrow NH_4C/(aq)$	iq)+H	<sub>2</sub> O( <i>I</i> )	2) Chemical displacement.			
	c) $2KI(aq)+CI_2(g) \rightarrow 2KCI(aq)+I_2(s)$	)		3) Precipitation reactions			
	d) CuSO <sub>4</sub> + Fe			4) FeSO <sub>4</sub> + Cu			
				5) FeSO <sub>4</sub> + Cu			
<b>30</b> .	Column-l		Column-l	I I			
	a) CuSO <sub>4</sub> + Fe	1)	NH <sub>4</sub> C/ + F	I <sub>2</sub> 0			
	b) KI + $CI_2$	2)	$K_{2}SO_{4} + 2$	2H <sub>2</sub> O			
	c) $H_2SO_4 + 2KOH$	3)	KCI + I <sub>2</sub>				
	d) NH <sub>4</sub> OH + HCI	4)	FeSO <sub>4</sub> + 0	Cu			
<u>Con</u>	prehension Type:		. 1	nu			
	This section contains paragraph. B	ased	upon each p	paragraph multiple choice questions have to			
	be answered. Each question has 4	choic	ces(A), (B),	(C ) and (D) out of which <b>ONLY ONE i</b> s			
	correct. Choose the correct option.	21		<u>01</u>			
	When more reactive metal displa	ces le	ess reactive	metal from its aqueous salt solution, the			
	chemical reaction is called che	mical	displacem	ent. A chemical reaction, in which two			
	compounds in their aqueous solu	tion r	eact by exc	hanging their radicals, is called chemical			
	double-decomposition or chemica	I dou	ble-displace	ement.			
31.	A teacher performed the following	g expe	eriment. He	took a strip of lead metal and placed in a			
	solution of copper chloride. Which c	of the	following is t	the correct equation for the above reaction?			
	A) $Cu_2Cl + Pb \longrightarrow PbCl_2 + 2Cu$						
	B) $CuSO_4 + Pb \longrightarrow PbSO_4 + Qb$	Cu					
I	C) $CuCl_2 + Pb \longrightarrow PbCl_2 + Cu$						
1	D) $C_{\mu}C_{\mu} + 2Pb \longrightarrow PbC_{\mu} + Cb$	u					
32	When hydrogen sulphide das is	nass	ed through	conner sulphate solution then a black			
02.	precipitate of copper sulphide is fo	rmec	along with	sulphuric acid solution			
	It is an example of	Jinice					
	$\Delta$ $\Delta$ displacement reaction between	on tw		19			
	B) A double displacement reaction	hetw	veen a com	pound and an element			
	C) A double decomposition reaction	n hei	tween two o	compounds			
	D) A combination between an eler	nent a	and a comp	ound			
22	A teacher performed the following experiment in the class						
00.	He took ammonium hydroxide solution and added to aluminium chloride solution, what is the						
	conclusion from the above experiment?						
	med						
	A) A black precipitate of aluminium hydroxide is formed.						
	C) A red precipitate of eluminium hydro.		vide alone i	s formed			
	D A white precipitate or aluminium	chlori	ide is forma	d			
L				u			
VII-	CLASS			9			

#### **Chemical Reactons & Equations**



#### **Chemical Reactons & Equations**

current is passed through an electrolyte chemical reaction take palce.

**1.** An important chemical reaction that takes place in an eletrolyte due to passage of current is chemical decomposition. What is meant by chemical decomposition ? It is the splitting of molecules into their respective atoms (or) ions.

**2.** For example we can split water molecules into Oxygen ions and Hydrogen ions by passing current through water.

**3.** Sodium chloride moleculs can be split into sodium ions and chlorine ions. This proces of spliting chemical compounds into their constituent elements using electric current is called electolysis.

**Definiation:** The Process in which electric currents (or) electrical energy is used to produce chemical decomposition splitting the compounds into their constituent elements (or) molecules into ions is called electrolysis. The solution through which current is passed is called electrolysis.

<u>SS</u> <u>Electrolysis of copper Sulphate:  $(CuSO_4)$ :</u> Electric current can be passed through copper sulphate solution and copper sulphate molecules can be split into copper ions (Cu<sup>++</sup>) and sulphate ions.

 $CuSO_4 \rightarrow Cu^{++} + SO_4^{--}$ 

TEACHING TASK

## MCQ's with only one answer is correct:

- When calcium carbonate is heated it's produces

   A) Ca, C and O<sub>2</sub>
   B) CaC<sub>2</sub> and O<sub>2</sub>
   C) CaO and CO<sub>2</sub>
   D) Ca and CO<sub>3</sub>

   When Hydrogen peroxide is heated it produces
- A)  $H_2$  and  $O_2$  B)  $H_2O$  and O C)  $H_2O$  and  $O_2$  D) None. **3.** decomposition of 2KNO<sub>3</sub> gives
- A) KNO + O<sub>3</sub> B) KNO<sub>2</sub> + O<sub>2</sub> C) 2KNO<sub>2</sub> + O<sub>2</sub> D) None 4.  $Zn + 2Hcl \rightarrow$

A) 
$$Zncl + H_2$$
 B)  $Zncl_2$  only C)  $Zncl_2 + H_2$  D) None

$$6. \qquad Zn+2Hcl \rightarrow Zncl_2+H_2$$

A) combination B) decomposition C) displacement D)double decomposition.
Sodium hydroxide (NaOH) reacts with hydrochloric acid (Hcl) to produce salt (Nacl) and water. This represents
A) combination B) decomposition C) displacement D)double decomposition.
In the manfacture of sulphric acid (H<sub>2</sub>SO<sub>4</sub>) the sulphur trioxide (SO<sub>3</sub>) gas is dissoved in water.

A) 
$$2Mg + O_2 \rightarrow 2MgO$$
B)  $CuCO_3 \rightarrow CuO + CO_2$ C)  $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ D)  $Bacl_2 + Na_2SO_4 \rightarrow BaSO_4 + 2Nacl$ 10. Which of the following is NOT a Chemical Change ?  
A) Conveerting water into steamB) Making curd from milk

**11.** Rusting of iron is a Chemical Change because

## **Chemical Reactons & Equations**

12.	<ul> <li>A) it is a temporary change</li> <li>B) it is a slow reaction</li> <li>C) a new substance fomed</li> <li>D) upon cleaning the original substance is recovered</li> <li>Which of the following is NOT a Chemical Changes ?</li> </ul>					
   	A) A banana turning brownB) Moulding a piece of gold into a ringC) Curdling of milkD) Baking of cake					
   13.	$Mg + H_2 SO_4 \rightarrow ?$					
	A) $MgSO_4 + H_2O$ B) $MgO + H_2$					
	C) $MgSO_4 + H_2$ D) $MgSO_4 + O_2$					
14.	Decomposition of hydrogen peroxide to water and oxygen is					
	A) Physical Change B) Reversible Change C) Chemical Change D) None of these					
і II. <u>м</u>	MCQ's with more than one option is correct:	İ				
♦	This section contains multiple choice questions. Each question has 4 choices (A), (B), (C),(D),					
   15.	Give examples of decomposition reactions					
	A) $CuCO_3 \rightarrow CuO + CO_2$ B) $S + O_2 \rightarrow SO_2$					
	C) $2HgO \rightarrow 2Hg + O_2$ D) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$					
16.	Types of chemical changes are					
   17.	A) 4 B) 5 C) A and B D) A only. Classification of chemical chagnes					
	A) chemical combination (B) Chemical decomperi	İ				
 	C) Chemical triple composition D) A and B Match the following:					
	This section contains Matrix-Match Type questions. Each question contains statements give	n				
	in two columns which have to be matched. Statements (A, B, C, D) in <b>Column-I</b> have to be	 1				
	appropriately bubbled as illustrated in the following example.	be				
	If the correct matches are A-p,A-s,B-r,B-r,C-p,C-q and D-s,then the correct bubbled 4*4 matr	ix				
   18.	<u>Chmical action</u> <u>Type of Chemical Change</u>					
	1.Sending of electric current intoa) Double decompositionacideified warter	ļ				
	2.Burning of magnesium wire in air b) Decomposition	l				
	3.Palcing magnesium wire in dilute c) Combination	 				
	4.Adding Sodium sulphate solution d) Displacement					
	to barium chloride salution					
	A) 1 - b, 2 - c, 3 - d, 4 - a B) 1 - c, 2 - b, 3 - d, 4 - a					
   N/ C	C) $1 - c$ , $2 - d$ , $3 - a$ , $4 - b$ D) $1 - d$ , $2 - d$ , $3 - b$ , $4 - a$					
<b>19.</b> Chemical decomposition, Chemical combination, Chemical raction . Chemical displacement						
V. <u>C</u>	V. Correct the Sentences if it is wrong. Otherwise rewrite the sentence					
20.	. The chemical reaction in which a substance decmposes into two or more	new				
	substances is called composition.					
21.	In the reaction of combination two elements or two compounds may participate.					





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