



CHEMICAL EQUATIONS

1. What happens when a magnesium ribbon is ignited? Give chemical reaction
2. Why do we rub magnesium ribbon with a sand paper before igniting?
3. Name and state the law which is kept in mind when we balance a chemical equation?
4. What is a balanced chemical equation? Why should chemical equation be balanced?
5. Write the chemical equation of the reaction in which following changes have been taken place
 - Change in colour
 - Change in temperature
 - Formation of precipitate

TYPES OF CHEMICAL REACTIONS

1. What happens chemically when quick lime is added to water
2. List any two observations when ferrous sulphate is heated in dry test tube.
3. If copper metal is heated over a flame it develops a coating. What is the colour and composition of coating
4. Hydrogen and oxygen gases are produced at the cathode and Anode respectively in the electrolysis of water what is the ratio of volume of hydrogen and oxygen gas?
5. What are exothermic and endothermic reaction?
6. Write a balance chemical equation
Carbon monoxide react with hydrogen gas at 340 atm to form methyl alcohol
7. Which one is the chemical change fermentation of fruit or dilution of fruit juices
8. Which colour change and smell are observed when crystal of ferrous sulphate are heated? Give chemical reaction also? Number of water crystal present in ferrous sulphate
9. Is burning of candle wax a physical change or chemical change?
10. State one basic difference between a physical change and a chemical change?
11. A, B, C are 3 element which undergoes chemical reaction according to the following equation

$$A_2O_3 + 2B \rightarrow B_2O_3 + 2A$$

$$3CSO_2 + 2B \rightarrow B_2(SO_4)_3 + 3C$$

$$3CO + 2A \rightarrow A_2O_3 + 3C$$
 1. Which element is the most reactive?
 2. Which element is the least reactive?
12. Name the type of chemical reaction represented by the following question
 - I. $CaCO_3 \rightarrow (Heat) CaO + CO_2$
 - II. $CaO + H_2O \rightarrow Ca(OH)_2$
13. A solution of substance X is used for testing carbon dioxide. what will be the reaction of X with carbon dioxide. write balance equation for this reaction
14. Copper powder was heated in China dish. Answer the following questions
 - I. State the chemical of reactant and product of the chemical reaction
 - II. Write the chemical equation for this process

THE WISDOM TREE ACADEMY

15. A small amount of quick lime is added to water in a Beaker

- Name and define the type of reaction that has taken place
- Write balance equation for this observation. Write the chemical name of product obtained
- State to observation that you will make in this reaction

16. In the electrolysis of water

- Name the gas collected at anode and the cathode
- Why is the volume of gas collected at one electrode is double of the other?
- Why are a few drop off dilute sulfuric acid(H_2SO_4) added to water?

17. Write balanced chemical equation for this reaction that plays during respiration. Identify the type of combination reaction that takes place during the process and justify the name. Give one more example of this type of reaction.

18. An aqueous solution of metal nitrate P react with sodium bromide solution to form yellow precipitate compound Q Which is used in photography. Q On Expose to sun lies undergoes decomposition reaction to form metal present in along with a reddish brown gas. Identify P and Q .Write balance equation for this chemical reaction. List two categories in which this reaction can be placed

19. Write the essential condition for the following reaction to take place
 $2AgBr \rightarrow 2Ag + Br_2$ Write one application of this direction
 Complete the following equation of chemical reaction
 $2FeSO_4 \rightarrow (Heat) Fe_2O_3 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
 What happens when water is added to Quick lime

20. Take 3g of barium hydroxide in test tube now add about 2g ammonium chloride and mix the content with the help of glass rod now touch the test tube from outside

- What do you feel on touching this tube?
- State the inference about this type of reaction occur
- Write the balance Chemical equation of this reaction involved

21. Classify the following chemical reaction as exothermic or endothermic

- Water is added to quick lime
- Dilute sulfuric acid to added to zinc granual
- When ammonium chloride is dissolved in water in a test it is become cold
- The decomposition of vegetable matter into compost
- Silver chloride turns grey in the presence of sunlight to form silver metal

22. Write chemical equation for this reaction taking place when

- When magnesium reacts with dilute nitric acid HNO_3
- Sodium react with water
- Zinc react with the hydrochloric acid

23. Decomposition reaction require energy either in form of heat or light or electricity four breakdown the reactant. Write one equation each for decomposition reaction where energy is supplied in the form of heat light energy



24. One gram of copper powder was taken in China dish and heated. What change take place on heating? When hydrogen gas is passed over this heated substance a visible change is seen. Give the Chemical reaction, The name and the colour of product form in each case.

25. Mention with reason the colour change is observed when

- Silver chloride is exposed to sunlight
- Copper powder is strongly heated in the presence of oxygen
- A piece of zinc is dropped in copper sulphur reaction

26. Lead nitrate solution is added to a test tube containing potassium iodide solution

- Write the name and colour of compound precipitate
- Write the balance chemical equation for the reaction involved
- Name the type of this reaction justifying your answer

27. On heating blue coloured powder of copper nitrate in a boiling tube, copper oxide (black), oxygen gas and a brown gas X is formed

- Write a balance chemical equation for this reaction
- Identify the brown gas X evolved
- Identify the type of reaction
- What could be the Ph range of aqueous solution of gas X?

28. Can we stir silver nitrate solution with a copper spoon? Why or why not? Support your answer with reason
Why a brown coating is formed on the iron rod when Iron Rod is kept dipped in copper sulphate solution for some time? What change will be observed in the colour of solution?
A green coating develops on the copper vessel in a raining season why?

29. Illustrate an activity along with a label diagram to show that a change in state of matter and change in temperature takes place during a chemical reaction

30. Natural gas burns and combined with oxygen to produce CO_2 and water, write the chemical equation for this reaction

31. What colour changes do you observe when:

- You add zinc to solution of copper sulphate
- You add lead to solution of cupric chloride

32. Write the balance chemical equation for the following reaction:

- Sodium carbonate on reaction with hydrochloric acid is equal molar concentrate gives sodium chloride and sodium hydrocarbonate
- Sodium hydrocarbonate on reaction with hydrochloric acid gave sodium chloride water and liberates carbon dioxide
- Copper sulphate on treatment with potassium iodide precipitate cuprous iodide liberate I_2 gas and also form potential sulfuric

33. Why is silver chloride store in dark bottle in the laboratory?

34. A metal Nitrate A on heating gives a metal oxide along with evolution of brown colour gas B And a colourless gas which help in burning.



Aqueous solution of A when reacted with Potassium iodide forms a yellow precipitate
1. Identify a and b 2. Name the type of both the relation involved in the above treatment

35. A substance X, An oxide of a metal is usually extensively in the cement industry. This element is found in our bone also. On treatment with water it forms solution which took red litmus blue. Identify X and also write the chemical Reaction.

36. State the kind of chemical reaction in the following examples
A. Digestion of food in stomach
B. Combustion of Coal in air
C. Heating of limestone

37. Identify the type of reaction taking place in each of following cases and write chemical equation for the reaction
A. Zinc react with silver nitrate to produce zinc nitrate and silver
B. Potassium iodide react with lead nitrate ride to produce potassium nitrate and lead iodide.

38. Student perform the experiment of heating ferrous sulphate crystal in boiling tube. He smelt fumes of a Pungent gas and colour of ferrous sulphate disappear
A. Name the gas is produced during heating
B. State the colour of ferrous sulphate crystal both before heating and after heating
C. Why does the colour of crystal disappear
D. Write the chemical formula of pungent gas
E. Identify the nature of this reaction

39. Identify the type of chemical reaction in the following processes
A. Barium chloride solution is mixed with copper sulphate and a white precipitate is formed
B. Silver nitrate solution reacts with sodium chloride solution and a white precipitated is formed
C. When few drop of Barium Chloride Solutions are headed to an aqueous solution of sodium sulphate a white precipitate is obtained

40. You are provided with a container made up of aluminium. You are also provided with solution of dilute HCl, Dilute HNO₃, ZnCl₂ and H₂O out of this solution this solution can be kept in aluminium container name the type of reaction taken place

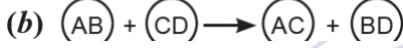
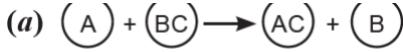
41. A zinc plate was put into a solution of copper sulphate kept in a glass container. It was found that blue colour of the solution gets fader and fader with the passage of time. After a few days when zinc plate was taken out of the solution, a number of holes were observed on it. [CBSE 2020]
(a) State the reason for changes observed on the zinc plate.
(b) Write the chemical equation for the reaction involved.

42. What is observed when a solution of potassium iodide solution is added to a solution of lead nitrate? Name the type of reaction. Write a balanced chemical equation to represent the above chemical reaction. [CBSE 2023, 22, 14, 13]



(b) Why copper can displace silver from silver nitrate and silver cannot displace copper from copper sulphate solution?

43. Identify the types of reaction mentioned above in (a) and (b). Give one example for each type in the form of a balanced chemical equation.[CBSE Sample Paper 2023]



44. A metal nitrate 'A' on heating gives yellowish brown coloured metal oxide along with brown gas 'B' and a colourless gas 'C'. Aqueous solution of 'A' on reaction with potassium iodide forms a yellow precipitate of compound 'D'. Identify 'A, B, C, D'. Also identify the types of both the reactions. Metal present in 'A' is used in alloy which is used for soldering purposes.

45. What happens when

(i) a piece of magnesium metal is placed in copper sulphate solution?

(ii) a piece of copper metal is placed in iron sulphate solution?

(b) Giving an example list two information which make a chemical equation more useful (informative).

46. A reddish brown coloured metal, used in electrical wires, when powdered and heated strongly in an open china dish, its colour turns black. When hydrogen gas is passed over this black substance, it regains its original colour. Based on the above information answer the following questions.

(a) Name the metal and the black coloured substance formed.

(b) Write balanced chemical equations for both the reactions. [CBSE 2023] [DoE]

47. Tina finds a paper covered with a white substance in a chemistry lab. She keeps the paper near the window of the lab and comes back to pick it up after five hours to take it home. She noticed that the white substance had turned grey.

(a) What could be the most likely substance on the paper that Tina found?

(b) The substance changed from white to grey. Write the chemical equation for this reaction.

(c) State ONE application of this property of the substance seen in daily life.

REDOX

1. Define oxidation and reduction
2. Why do firefly glow at night

Fireflies have a protein which in the presence of an enzyme undergoes aerial oxidation this is a chemical reaction which evolves emission of visible light

3. Name the substance oxidized and reduced and also identify oxidizing agent and reducing agent in following reaction

- $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
- $3MnO_2 + 4Al \rightarrow 3Mn + 2Al_2O_3$
- $2H_2S + 3SO_2 \rightarrow 3S + H_2O$
- $4Na + O_2 \rightarrow 2Na_2O$
- $CuO + H_2 \rightarrow Cu + H_2O$
- $Hg_2Cl_2 + Cl_2 \rightarrow 2HgCl_2$

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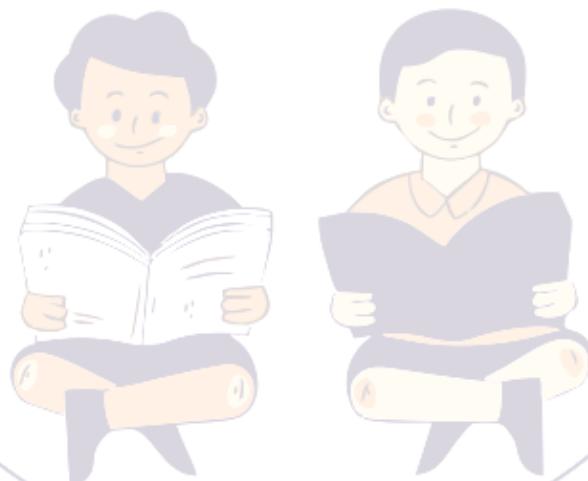


4. Identify the oxidizing agent and reducing agent in the following reaction

- A. $\text{H}_2\text{S} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{S}$
- B. $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- C. $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$

THE EFFECTS OF OXIDATION AND REDUCTION REACTIONS IN EVERYDAY LIFE

1. Potato chips manufacturers fill the packet of chips with nitrogen gas .why?
2. Iron articles lose their shine gradually
3. Foods should be kept in air tight conditions
4. You must have tasted or smelt the fat containing food but they were left for a long time. SUCH taste and smell bad. What is the reason for this? Name the phenomenon responsible for it? List two measure to prevent it
5. What happens when the food material containing fat and oils are left for a long Time? List two observable changes and suggest 3 way by which this phenomena can be prevented



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