



BRAIN INTERNATIONAL SCHOOL

SESSION 2024-25

CLASS: X

REVISION SHEET

SUBJECT: Chemistry

Chapter 1: Chemical Reactions and Equations

1. MULTIPLE CHOICE QUESTIONS:

- Which law is obeyed when we balance the chemical equation?
 - Law of Momentum
 - Law of Conservation of Energy
 - Law of Conservation of Mass
 - Law of Conservation of Time
- Magnesium ribbon burns with a dazzling white light in air and form a white powder. Identify the chemical composition of white powder.
 - Magnesium Carbonate
 - Magnesium Oxide
 - Magnesium Nitrate
 - Magnesium Sulphate
- Seema got her room walls white washed with slaked lime. After two-three days she found that whitewashing gave a shiny finishing on the walls because calcium carbonate reacts with carbon dioxide. Predict the reaction that has taken place on whitewashed walls.
 - Slaked lime reacts with CO_2
 - Slaked lime reacts with NO_2
 - Slaked lime reacts with O_2
 - Slaked lime reacts with SO_2

2. ASSERTION-REASON QUESTIONS:

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- Both A and R are true and R is correct explanation of the assertion.
- Both A and R are true but R is not the correct explanation of the assertion.
- A is true but R is false.
- A is false but R is true.

(a) Assertion: White silver chloride turns grey in sunlight.

Reason: Copper reacts with zinc sulphate to form copper sulphate and zinc is deposited.

(b) Assertion: Iron articles get coated with reddish brown powder when left for sometime in the open.

Reason: Iron is attacked by substances around it such as moisture, acids, etc.

3. Answer the following questions :

1. A metal 'X' when dipped in aqueous solution of aluminium sulphate no reaction is observed whereas when it is dipped in an aqueous solution of ferrous sulphate, the pale green solution turns colourless. Identify metal 'X' with reason.
2. When CaO is added to water taken in a beaker, rise in temperature is observed. However, when Ba(OH)₂ is mixed with NH₄Cl, a fall in temperature is observed. Why?
3. A brown substance 'X' on heating in air forms a substance 'Y'. When hydrogen gas is passed over heated 'Y', it again changes back into 'X'.
 - (i) Name the substance 'X' and 'Y'.
 - (ii) Name the type of chemical reactions occurring during both the changes.
 - (iii) Write the chemical equations of the reactions.
4. What happens when a piece of
 - (a) Zinc metal is added to copper sulphate solution?
 - (b) Aluminium metal is added to dilute HCl?
 - (c) Silver metal is added to copper sulphate solution?
5. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, white precipitate is obtained.
 - (a) Write a balanced chemical equation of the reaction involved.
 - (b) What other name can be given to this precipitation reaction?
 - (c) On adding dilute HCl to the reaction mixture, white precipitate disappears. Why?

Chapter 2: Acids, Bases and Salts

- 1. Question nos. (a) to (d) are based on the two tables given below. Study this table and answer the questions that follow:**

S. No.	Salt	Base	Acid	pH
1.	Na ₂ SO ₄	NaOH	H ₂ SO ₄	=7
2.	NH ₄ Cl	NH ₄ OH	HCl	<7
3.	KNO ₃	KOH	HNO ₃	=7
4.	NaCl	NaOH	HCl	=7

- (a) Why is the pH of ammonium chloride less than 7?
- (b) What is the nature of ammonium sulphate solution?
- (c) Sodium hydrogen carbonate gives brisk effervescence when reacts with
 - (i) HCl
 - (ii) NH₄Cl
 - (iii) NaOH
 - (iv) K₂CO₃
- (d) Which species formed on heating sodium hydrogen carbonate is used to make bread and cakes fluffy, soft and spongy?
 - (i) Na₂CO₃
 - (ii) CO₂
 - (iii) H₂O
 - (iv) H₂CO₃

2. MULTIPLE CHOICE QUESTIONS:

1. While washing clothes you noticed that after adding lots of detergent sufficient foam is not being formed. What can be added to the wash for better cleaning?
 - (a) Table Salt
 - (b) Washing soda
 - (c) Baking soda
 - (d) Bleaching powder

2. When you add lemon juice to a cup of tea, how will the pH change?
- (a) It becomes neutral
 - (b) It becomes more acidic
 - (c) It becomes more basic
 - (d) It forms a salt
3. Which of the following is a common example of neutralization reaction in daily life?
- (a) Boiling water with salt for cooking pasta
 - (b) Mixing lemon juice with honey
 - (c) Using soap to remove oil stains
 - (d) Adding vinegar to baking soda for cleaning

3. ASSERTION-REASON QUESTIONS:

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- (i) Both A and R are true and R is correct explanation of the assertion.
- (ii) Both A and R are true but R is not the correct explanation of the assertion.
- (iii) A is true but R is false.
- (iv) A is false but R is true.

(a) Assertion: Antacids are used to get rid of pain caused by indigestion.

Reason: Antacids neutralize the excess acid produced in the stomach.

(b) Assertion: Tooth decay starts when the pH of the mouth is lower than 5.5.

Reason: Bee-sting leaves an acid which causes pain and irritation.

4. Answer the following questions :

1. How is baking soda obtained from common salt? Explain its use (a) as medicine (b) in food and drinks (c) fire extinguisher.
2. Why do we need to brush our teeth with toothpaste after eating sugary food?
3. How is bleaching powder produced? Give the reaction involved.
4. When zinc metal is treated with a dilute solution of a strong acid, a gas is evolved, which is utilized in the hydrogenation of oil. Name the gas evolved. Write the chemical equation of the reaction and also write a test to detect the gas formed.
5. What is meant by water of crystallization? Explain that the crystalline salts contain water of crystallization.

Chapter 3: Metals and Non-metals

1. MULTIPLE CHOICE QUESTIONS:

1. The constituent of haemoglobin is:
(a) Iron (b) Sodium (c) Copper (d) Magnesium
2. Cinnabar is an ore of :
(a) Mercury (b) Copper (c) Calcium (d) Lead
3. Which of the following represents an electronegative element :

(a) 2,8

(b)2,7

(c)2,8,2

(d)2,8,1

2. ASSERTION-REASON QUESTIONS:

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below :

(a) Both A and R are true and R is correct explanation of the assertion.

(c) Both A and R are true but R is not the correct explanation of the assertion.

(d) A is true but R is false.

(e) A is false but R is true.

(a) Assertion: Silver articles become black when exposed to air.
Reason: Silver articles become black when exposed to air.

Reason: Copper reacts with moist carbon dioxide in the air and gains a green coat.

(b) Assertion: Metals at the top of reactivity series are not formed in nature as free element.

Reason: Galvanisation is a method of protecting steel and iron from rusting.

3. Case Based Questions:

Shweta saw a kerosene bottle in the science lab of her school. She saw a metal placed in that bottle and asked her teacher about it. Her teacher said that this metal vigorously catches fire if it is kept in open air. The metal is too reactive that it catches fire even if we keep it in the water.

a) Identify the metal.

b) Why is metal 'M' stored under kerosene?

c) Write the formula of the compound formed when this metal is exposed to air and also write the reactions involved in it.

d) If the hydroxide of this metal reacts with hydrochloric acid what would be the products formed? What do we call this reaction?

4. Answer the following questions :

1. Why do metals not evolve hydrogen gas with nitric acid?

2. What is thermite reaction? State one use of this reaction.

3. Why is aluminium oxide considered an amphoteric oxide?

4. Give reasons for the following:

(i) Lemon is used for restoring the shine of tarnished copper vessels.

(ii) Copper wires are used in electrical connections.

Chapter 4: Carbon and Its Compounds

1. MULTIPLE CHOICE QUESTIONS:

1. Which of the following are the first two members of homologous series having function group - Cl.

- (a) CH_3Cl , CHCl
 (b) HCl , NaCl
 (c) CH_3Cl , $\text{C}_2\text{H}_5\text{Cl}$
 (d) CHCl_3 , CHCl_4
2. Name the following compound $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-COOH}$
 a) Butanoic acid (b) Prapanoic acid (c) Propanal (d) Butanal
3. In the members of any homologous series which of the following remain same:
 (a) the melting point and boiling point
 (b) the solubility in water
 (c) the chemical properties
 (d) the physical properties

2. ASSERTION-REASON QUESTIONS:

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- (a) Both A and R are true and R is correct explanation of the assertion.
 (b) Both A and R are true but R is not the correct explanation of the assertion.
 (c) A is true but R is false.
 (d) A is false but R is true.

- (a) Assertion: Carbon does not lose four electrons from other atoms to attain noble gas configuration.

Reason: The nucleus of carbon has six protons.

- (b) Assertion: While converting ethanol to ethane, some drops of conc. H_2SO_4 is added.

Reason: In the reaction of conversion of ethanol to ethane, concentrated H_2SO_4 removes water molecules and also acts as a catalyst.

3. Case Based Questions:

1. A student Mohan took an organic acid 'X'. It is a liquid which often freezes during winter time. On warming it with ethanol in the presence of a few drops of concentrated sulphuric acid, Mohan found that a compound 'Y' with a sweet smell is formed.
- Identify 'X' and 'Y'.
 - Write a chemical equation for the reaction involved.
 - Write the name of above process. What are the uses of the product formed.
2. While standing in assembly line, Harsh got an interesting thought. He thought that we children are standing here in a straight line. If we spread our hands, we would make branched rows. We can stand in circle also. This means we act like Carbon. Carbon compounds may have long chains of carbon, branched chains of carbon or even carbon atoms arranged in rings. In addition, carbon atoms may be linked by single, double or triple bonds.
- Which type of compounds will be formed if carbon atoms link to make long chains with single bonds only?
 - Give one example of compounds where Carbon atoms are (a) arranged in branched chain b) linked by triple bond.

- (iii) Compare in between Benzene and Cyclohexane and write one similarity and one difference between these.

4. Answer the following questions :

1. (a) Differentiate between saturated and unsaturated compounds. Give structures of both the type of compounds having four carbon atoms in their molecule.
(b) Write the name of the following: (i) $\text{CH}_3\text{CH}_2\text{COOH}$ (ii) $\text{CH}_3\text{CH}_2\text{Br}$
(c) Draw the electron dot structure of ethene (C_2H_4).
2. (a) Identify the type of bonds in Common salt and vinegar. Compare them with reason on the basis of (i) Melting point (ii) electric conductivity
(b) Draw electron dot structure to show bonding in NH_3
3. Tanmay took two test tubes A and B with 10 ml of hard water in each. He added few drops of soap solution in test tube A, and in test tube B, few drops of detergent solution. Then he said both the test tube for some time.
(a) In which test tube the formation of foam will be more and why?
(b) Why did curdy solid form in another test tube?
(c) With help of a diagram show the working of soap on oily dirt.