Revision Question Bank

Chemical reaction

1. Give the reaction taking place during respiration in the body cells.
2. Name the reaction in which one of the reacting species loses, while the other gains electrons.
3. Why is decomposition reaction called opposite of combination reaction? Write equations for these reactions.
4. Write balanced chemical equation for each of the following.
   (a) Methane burns in air to give carbon dioxide, water and heat.
   (b) Ferric oxide reacts with sulphuric acid to give ferric sulphate and water.
5. All single displacement reactions are irreversible reactions. Explain.
6. Write equations for each decomposition reactions where energy is supplied in the form of heat, light or electricity.
7. In what way are chemical equations useful for us?
8. Lime water turns milky when carbon dioxide gas is passed through it and further turns colourless when excess of carbon dioxide is bubbled through it. Explain.
9. Can a displacement reaction be a redox reaction also? Explain.
10. Explain any case in which corrosion has advantage also.

Acids, Bases and Salts

1. How is plaster of Paris chemically different from gypsum? How can they be inter converted? Write one use of plaster of Paris.
2. Given below are the pH values of four different liquids 7.0,14.0,4.0,2.0
   Which of these could be that of
   (a) lemon juice (b) distilled water
   (c) 1 M, sodium hydroxide (NaOH) solution (d) tomato juice
3. State Arrhenius concept of acids and bases. Select a strong acid and a weak base from amongst the following substances H_2CO_3, HNO_3, NaOH, NH_4OH.
4. A solution turns red litmus blue, its pH is likely to be
   (a) 1 (b) 4 (c) 5 (d) 10
5. What effect does the concentration of $H^+(aq)$ have on the acidic nature of the solution?
6. Given two test-tubes 'A' and 'B'. Test-tube 'A' contains blue litmus solution and test-tube 'B' contains red litmus solution. A solution with pH 2 is added in both the test-tubes, in which of the two would you observe a colour change?
7. Write the chemical reaction involved when zinc is added to warm dilute sodium hydroxide solution. Can all metals react with caustic soda solution?
8. To an aqueous solution of sodium hydroxide, a few drops of phenolphthalein were added. What do you observe? To this solution small amount of dilute HCl was added. What do you observe now? Explain your answer.
9. Give preparation and uses of bleaching powder.
10. Explain the process of preparation of washing soda.

For Solutions: www.pioneermathematics.com/latestupdates

Previous Years Questions

(Chemical Equations and Reactions)

1. (a) Write chemical equations : **[CBSE Boards 2016-17]**

(i) when carbon dioxide gas is passed through lime water

(ii) When excess of carbon dioxide gas is passed through lime water

(b) List two different natural forms of calcium carbonate

2. State the types of chemical reactions represented by the following equations: **[CBSE Boards 2016-17]**

(i) $A + BC \rightarrow AC + B$ (ii) $A + B \rightarrow C$ (iii) $X \rightarrow Y + Z$

(iv) $PQ + RS \rightarrow PS + RQ$ (v) $A_2O_3 + 2B \rightarrow B_2O_3 + 2A$ (vi) $P + Q \rightarrow R$

3. Identify the type of chemical reaction in the following statements and define each of them :

(i) Digestion of food in our body **[CBSE Boards 2016-17]**

(iii) Heating of manganese dioxide with aluminium powder **[CBSE Boards 2014-15]**

(iv) Blue colour of copper sulphate solution disappears when iron filings are added to it

(v) Dilute hydrochloric acid is added to sodium hydroxide solution to form sodium chloride and water

4. What change will you observe when lead nitrate is heated in a test tube? Write the equation for the reaction and type of reaction involved. **[CBSE Boards 2016-17]**

5. (a) A student has been collecting silver coins. One day she observed black coating on silver coins. Which chemical phenomenon is responsible for this coating? Give the chemical name of the black coating.

(b) Compound 'A' When dissolved in water gives compound 'B and liberates heat. Compound 'B' reacts with CO_2 to form white precipitate 'C' identify 'A ' 'B' and 'C'. Write down the reactions involved,

[CBSE Boards 2016-17]

6. You must have tasted or smelt the fat containing food material left for a long time. Such foods taste and smell bad. What Is the reason for this? Name the phenomenon responsible for it. List two measures for its prevention. **[CBSE Boards 2016-17]**

7. Balance the following chemical equations: **[CBSE Boards 2016-17]**

(i) $Mg(OH)_2 + HCl \rightarrow MgCl_2 + H_2O$ (ii) $N_2 + H_2 \rightarrow NH_3$ (iii) $P_4 + O_2 \rightarrow P_2O_5$

8. Classify the following chemical reactions as exothermic or endothermic: **[CBSE Boards 2016-17]**

(i) Water is added to quicklime.

(ii) Dilute sulphuric acid is added to zinc granules,

(iii) When ammonium chloride is dissolved in water in a test tube it becomes cold.

(iv) The decomposition of vegetable matter into compost.

(v) Electrolysis of water.

(vi) Silver chloride turns grey in the presence of sunlight to form silver metal.

9. Balance the following chemical equations and state whether they are exothermic or endothermic:

(i) $Na + H_2O \rightarrow NaOH + H_2$ (ii) $FeSO_4 \rightarrow Fe_2O_3 + SO_2 + SO_3$ **[CBSE Boards 2016-17]**

10. (a) Define corrosion. **[CBSE Boards 2016-17]**

(b) What is corrosion of iron called?

(c) How will you recognise the corrosion of silver?

(d) Why corrosion of iron is a serious problem?

(e) How can we prevent corrosion of iron?

11. Take 3g of barium hydroxide in a test tube, now add about 2g of ammonium chloride and mix the contents with the help of a glass rod. Now touch the test tube from outside. **[CBSE Boards 2016-17]**

(i) What do you feel on touching the test tube?

(ii) State the inference about the type of reaction occurred.

(iii) Write the balanced chemical equation of the reaction involved.

12. (a) Write two point of differences between combination and decomposition reaction.

(b) Define rancidity. **[CBSE Boards 2016-17]**

13. Describe an activity to show how the following metals can be arranged in the decreasing order of reactivity with dil sulphuric acid : Al, Zn, Cu, Fe, Mg **[CBSE Boards 2016-17]**

14. What is observation when carbon dioxide gas is-passed through limewater **[CBSE Boards 2016-17]**

(i) for a short duration

(ii) for long duration ? Also write the chemical equations for the reactions involved

15. State reason for the following: **[CBSE Boards 2016-17]**

(i) Silver articles become black after some time when exposed to air.

(ii) Although aluminium is a highly reactive metal, yet its articles do not corrode.

16. P, Q and R are three elements which undergo chemical reactions according to the following equations

$P_2O_3 + 2Q \rightarrow Q_2O_3 + 2P$

$3RSO_4 + 2Q \rightarrow Q_2(SO_4)_3 + 3R$

$3RO + 2P \rightarrow P_2O_3 + 3R$

Answer the following questions with reasons:

(a) Which element is the most reactive?

(b) Which element is the least reactive?

(c) State the types of reactions listed above. **[CBSE Boards 2016-17]**

17. You are given samples of three metals - sodium, magnesium and copper. Suggest any two activities to arrange them in order of their decreasing reactivity. **[CBSE Boards 2016-17]**

18. When SO_2 gas is passed through saturated" solution of Hydrogen sulphide, the following reaction occurs:

$SO_2 + 2H_2S \rightarrow 2H_2O + 3S$ **[CBSE Boards 2016-17]**

For this reaction the substance oxidised, reduced, the oxidising agent and reducing agent.

19. (a) Which metal from the following can displace zinc from zinc sulphate solution?

Lead, copper, magnesium, silver.

Write the equation of the chemical reaction involved.

(b) Arrange metals Ca, Al, Cu, and Au in decreasing order of reactivity. **[CBSE Boards 2016-17]**

20. State the type of chemical reactions with chemical equations mat take place in the following:

(i) Magnesium wire is burnt in air.

(ii) Electric current is passed through water.

(iii) Ammonia and hydrogen chloride gases are mixed. **[CBSE Boards 2016-17]**

21. Give one example each of the following decomposition reactions. Write one balanced chemical equation in each case:

(i) The reaction which occurs on passing electric current.

(ii) The reaction which occurs in the presence of sunlight.

(iii) The reaction which occurs on heating of a substance. **[CBSE Boards 2016-17]**

22. (a) Can a displacement reaction be a redox reaction? Explain with the help of an example.

(b) Write the type of chemical reaction in the following:

(i) Reaction between an acid and a base (ii) Rusting of iron. **[CBSE Boards 2016-17]**

23. State reason for the following: **[CBSE Boards 2016-17]**

(i) Potato, chips manufacturers usually flush bags of chips with nitrogen gas. **[CBSE Boards 2013-14]**

(ii) Iron articles lose their shine gradually.

(iii) Foods should be kept in air tight containers.

24. On passing excess carbon dioxide gas through lime water, it first turns milky and then becomes colourless. Explain why? Write all the chemical equations of the reactions involved.

[CBSE Boards 2016-17]

25. (a) Can a displacement reaction be a redox reaction? Explain with the help of an example.

(b) Write the type of chemical reaction in the following:

(i) Reaction between an acid and a base **[CBSE Boards 2016-17]**

26. On heating copper powder in air, the surface of copper powder becomes coated with black CuO. How can this black coating be converted into brown copper? Write chemical equation for the reaction that occurs during the colour change. **[CBSE Boards 2015-16]**

27. Two reactions are given below:

(i) $2KI + Cl_2 \longrightarrow 2KCl + I_2$ (ii) $2K + Cl_2 \longrightarrow 2KCl$

Identify the type of reaction giving justification in each case. **[CBSE Boards 2015-16]**

28. What are combination reactions? Explain with a suitable example. **[CBSE Boards 2014-15]**

29. What are decomposition reactions? Give one example each of **[CBSE Boards 2014-15]**

(a) thermal decomposition reaction. (b) photolytic decomposition reaction.

30. (a) Silver articles become black after some time when kept in open for a few days. Give reason for the above statement.

(b) Name and write the formula of the black substance formed. **[CBSE Boards 2013-14]**

(c) Write balanced chemical equation for the above phenomenon. **[CBSE Boards 2014-15]**

31. Write the balanced chemical equations for the following reactions and name the type of reaction in each case :

(i) Calcium carbonate (s) $\xrightarrow{\text{Heat}}$ Calcium oxide(s)+ Carbon dioxide(g)

(ii) Zinc(s) + Copper sulphate(aq) $\longrightarrow$ Zinc sulphate (aq)+ Cu(s) **[CBSE Boards 2014-15]**

32. (a) Manganese dioxide reacts with hydrochloric acid to form manganese chloride and chlorine gas. Write a balanced chemical equation for the reaction. Name the substance oxidized and the substance reduced.

(b) When copper powder is heated in a china dish the surface of copper powder heroines coated with black copper (II) oxide, If hydrogen gas is passed over this heated material (CuO) the black coating on the surface turns brown and copper is obtained. Write two chemical equations for the reactions given above and mention the substance oxidized and the substance reduced in both the reactions.

[CBSE Boards 2014-15]

33. State what would happen if:

(i) some zinc pieces are placed in blue copper sulphate solution.

(ii) some copper pieces are placed in green ferrous sulphate solution.

(iii) an iron nail is dipped in a solution of copper sulphate for some time. **[CBSE Boards 2014-15]**

34. State reasons for the following statements:

(i) Stain of curry on a white cloth becomes reddish brown when soap is scrubbed on it and turns yellow again when the cloth is washed with plenty of water. **[CBSE Boards 2014-15]**

(ii) Curd should not be kept in copper or brass vessels. What is done to protect it?

35. Study the following equation of a chemical reaction $H_2 + Cl \rightarrow 2HCl$ **[CBSE Boards 2014-15]**

(i) Identify the type of reaction

(ii) Write a balanced chemical equation of another example of this type of reaction.

36. (i) Why is respiration considered as an exothermic reaction? **[CBSE Boards 2014-15]**

(ii) Write chemical name and the formula of the brown gas produced during thermal decomposition of lead nitrate.

(iii) Why do chips manufacturers Rush bags of chips with gas such as nitrogen?

37. What is a reduction reaction?

Identify the substances that are oxidised and the substances that are reduced in the following reaction.

(a) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$ (b) $2PbO + C \rightarrow 2Pb + CO_2$ **[CBSE Boards 2014-15]**

38. 2g of Ferrous Sulphate crystals are heated in a boiling tube.

(i) State the colour of Ferrous Sulphate crystals both before heating and after heating,

(ii) Name the gases produced during heating,

(iii) Write the chemical equation for the reaction. **[CBSE Boards 2014-15]**

39. 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 substances 'X' and 'Y'.

(ii) Name the chemical processes occurring during both the changes.

(iii) Write the chemical equations involved in both the changes. **[CBSE Boards 2014-15]**

40. Can we place silver nitrate solution in iron vessel? Why or why not? **[CBSE Boards 2013-14]**

41. (a) Although calcium is heavier than water but it starts floating over water after some time when it is placed in water. Explain why? **[CBSE Boards 2013-14]**

(b) Why should a magnesium ribbon be cleaned before burning in air?

42. On heating a white powder of lead (II) nitrate in a boiling tube, lead oxide, oxygen gas and a brown gas 'X' is formed

(i) Write the balanced chemical equation of the reaction? (ii) Identify the brown gas 'X' formed

(iii) Identify the type of the reaction. **[CBSE Boards 2013-14]**

43. What is a redox reaction? Explain with example. **[CBSE Boards 2013-14]**

44. (a) Why do silver chloride articles turn grey in sunlight?

(b) What is double displacement reaction? Explain with the help of reaction. **[CBSE Boards 2013-14]**

Previous Years Question Bank

(Acids, Bases & Salts)

1. Name the acids and bases from which the following salts may be obtained: **[CBSE Boards 2016–17]**
Potassium sulphate and calcium chloride.

2. You are provided with magnesium ribbon and sulphur powder. Explain with the help of an activity that metal oxides are basic and non-metal oxides are acidic in nature. **[CBSE Boards 2016–17]**

3. State reason for the following statements : **[CBSE Boards 2016–17]**
(i) Tap water conducts electricity whereas distilled water does not
(ii) Dry hydrogen chloride gas does not turn blue litmus red whereas dilute hydrochloric acid does.
(iii) During summer season, a milkman usually adds a very small amount of baking soda to fresh milk.
(iv) For dilution of an acid, acid is added into water and not water into acid.
(v) Ammonia is a base but does not contain a hydroxyl group.

4. Why is aluminium oxide considered an amphoteric oxide? Support your answer with the help of chemical equations. **[CBSE Boards 2016–17]**

5. (a) What do you understand by water of crystallisation? Give two salts having water of crystallisation.
(b) What do you mean by setting of Plaster of Paris? **[CBSE Boards 2016–17]**
(c) How can pH change be the cause of tooth decay?
(d) Differentiate roasting and calcination.

6. Name the gas which is liberated when an acid reacts with a metal. Illustrate with an example. How will you test the presence of this gas? **[CBSE Boards 2016–17]**

7. A white powdery substance having strong smell of chlorine gas is used for disinfecting drinking water to make it free from germs. Identify the substance and write its chemical formula. Also write chemical equation for its preparation. **[CBSE Boards 2016–17]**

8. (a) What are amphoteric oxides? Select the amphoteric oxides from the following:
ZnO, Al_2O_3, Na_2O, CO_2, H_2O
(b) Give chemical equation for the reaction of any one of the above chosen oxides with an acid.
[CBSE Boards 2016–17]

9. (a)List two natural and two synthetic indicators. **[CBSE Boards 2016–17]**
(b)What are olfactory indicators? Mention two examples.
(c) Differentiate between strong acid and weak acid.

10. What is baking powder? Write chemical equation of the reaction involved when baking powder is heated **[CBSE Boards 2016–17]**

11. Name the acid present in each of the following foodstuffs which provides a sour taste to them :

(i) Lemon juice (iv) Tomato (iii) Vinegar **[CBSE Boards 2016–17]**

(v) Orange (vi) Tamarind (iv) Curd

12. (a) Define a universal indicator. Mention its one use. **[CBSE Boards 2016–17]**

(b) Solution A gives pink colour when a drop of phenolphthalein indicator is added to it. 'Solution B gives red colour when a drop of methyl orange is added to it. What type of solutions are A and B and which one of the solutions A and B will have a higher pH value?

(c) Name one salt whose solution has pH more than 7 and one salt whose solution has pH less than 7.

13. With the help of an example explain what happens when a base reacts with a non - metallic oxide. What do you infer about the nature of non-metal oxide? **[CBSE Boards 2016–17]**

14. How the following substances will dissociate to produce ions in their solutions?

(i) Hydrochloric acid (iv) Sodium hydroxide

(ii) Nitric acid (v) Potassium hydroxide

(iii) Sulphuric acid (vi) Magnesium hydroxide **[CBSE Boards 2016–17]**

15. On the basis of their pH values, how will you identify neutral, acidic and basic salt solutions. How can these salts be prepared? **[CBSE Boards 2016–17]**

16. (a) What are anhydrous and hydrated salts? Explain with a suitable example of each.

(b) How is Plaster of Paris prepared? What reaction takes place when it sets to a hard mass?

[CBSE Boards 2016–17]

17. Give the chemical name and formula of washing soda. **[CBSE Boards 2016–17]**

18. Explain with the help of an activity what happens when we add zinc metal in a test tube containing dilute hydrochloric acid. **[CBSE Boards 2016–17]**

19. (a) With the help of a balanced equation, explain the preparation of bleaching powder.

(b) Give any two uses of bleaching powder. **[CBSE Boards 2016–17]**

20. (a) Why baking soda is used in baking products? **[CBSE Boards 2016–17]**

(b) Give the chemical name and chemical formula for the following:

(i) Baking soda (ii) Plaster of Paris

21. Write the chemical name and formula of gypsum. What happens when gypsum is heated at 373 K. Write chemical equation for the reaction. **[CBSE Boards 2016–17]**

Or

How is plaster of paris chemically different from gypsum? How can they be interconverted? Write two uses of plaster of paris. **[CBSE Boards 2016–17]**

22. How the following substances will dissociate to produce ions in their solutions?

(i) Hydrochloric acid (ii) Sodium hydroxide (iii) Nitric acid **[CBSE Boards 2016–17]**

(iv) Potassium hydroxide (v) Sulphuric acid (vi) Magnesium hydroxide

23. Indicate with the help of a diagram the variation of pH with change in concentration of $H^+_{(aq)}$ and $OH^-_{(aq)}$ ion showing :

(i) Increase of acidic and basic nature

(ii) Increase and decrease of H^+ ion concentration

24. (a) Define indicator. Name two indicators obtained from plants. **[CBSE Boards 2016–17]**

(b) Write balanced chemical equation for the reaction that takes place when sodium oxide reacts with water. How will this solution behave towards phenolphthalein and red litmus paper?

(c) State what happen when sodium hydroxide solution reacts with dilute hydrochloric acid. What is this reaction called?

25. Give suitable reason for the following statements: **[CBSE Boards 2016–17]**

(i) Rain water conducts electricity but distilled water does not.

(ii) We feel burning sensation in the stomach when we overeat.

(iii) A tarnished copper vessel regains its shine when rubbed with lemon,

(iv) The crystals of washing soda change to white powder on exposure to air

(v) An aqueous solution of sodium chloride is neutral but an aqueous*solution of sodium carbonate is basic.

26. Menlion the pH of aqueous solution of the following salts as 7, more than 7 or less than 7:

(i) Potassium chloride (ii) Sodium carbonate

(iii) sulphate nitrate (iv) Sodium nitrate **[CBSE Boards 2016–17]**

27. List the raw materials used in the manufacture of baking soda. Write two important uses of this compound. **[CBSE Boards 2016–17]**

28. Write balanced chemical equations for the following statements: **[CBSE Boards 2016–17]**

(i) NaOH solution is heated with zinc granules.

(ii) Excess of carbon dioxide gas is passed through lime water.

(iii) Dilute sulphuric acid reacts with sodium carbonate.

(iv) Egg shells are dropped in hydrochloric acid.

(v) Copper (II) oxide reacts with dilute hydrochloric acid.

29. Write chemical formula of washing soda. How is it obtained from baking soda? Name one industrial use of washing soda other than washing clothes. **[CBSE Boards 2016–17]**

30. (a) Write three properties each of acids and bases. **[CBSE Boards 2016–17]**

(b) How will you show with an example that metal oxides are basic in nature

Give chemical equation also.

31. State what happens when zinc granules are heated with sodium hydroxide solution. Write the balanced chemical equation for this reaction. Name the main product formed in this reaction.

[CBSE Boards 2016–17]

32. State what happens when; **[CBSE Boards 2016–17]**

(i) electricity is passed through an aqueous solution of brine.

(ii) bleaching powder is exposed to air. (iii) baking soda is heated.

Also write the chemical equation in each case.

33. State reason for the following: **[CBSE Boards 2016–17]**

(i) Acids do not show acidic behavior in the absence of water but aqueous solution of an acid conducts electricity.

(ii) Distilled water does not conduct electricity whereas rain water does.

(iii) Pickles and other sour food stuffs should not be kept in copper and brass vessels.

34. Aluminum oxide and zinc oxide react with both acids as well as bases to produce salt and water. What are these oxides called? Write chemical equation in each case. **[CBSE Boards 2016–17]**

35. (a) Define indicator. Name two indicators obtained from plants. **[CBSE Boards 2016–17]**

(b) Write balanced chemical equation for the reaction that takes place when sodium oxide reacts with water. How will this solution behave towards phenolphthalein and red litmus paper?

(c) State what happen when sodium hydroxide solution reacts with dilute hydrochloric acid. What is this reaction called?

36. Define an acid and a base. Name one weak acid and one strong acid. **[CBSE Boards 2015–16]**

37. (a) The blue colour of crystals of a substance changed on heating in a closed test tube but the colour was regained after sometime on cooling. Name the substance and write its chemical formula. Explain the phenomenon involved.

(b) Write name and chemical formula of two such compounds whose one formula unit is associated with 10 and 2 water molecules, respectively. **[CBSE Boards 2015–16]**

38. Five solutions A, B, C, D and E showed pH as 4, 7, 1, 11 and 9 respectively when tested by universal indicator. Which solution is:

(i) Neutral (ii) Strongly acidic (iii) Strongly alkaline (iv) Weakly alkaline (v) Weakly acidic

Arrange the pH in increasing order of H^+ ion concentration. **[CBSE Boards 2015–16]**

39. What is acid rain? What is its pH? How does it affect the aquatic life? **[CBSE Boards 2015–16]**

40. Write the name and chemical formula of the compound used for disinfecting water? How is it manufactured? **[CBSE Boards 2015,16]**

41. (a) How does baking soda help to make cake and bread soft and spongy?

(b) How does a fire extinguisher help in extinguishing fire? Write the constituents of fire extinguisher.

(c) Is the pH value of baking soda solution lesser or greater than 7? **[CBSE Boards 2015–16]**

42. (a) What is the common name of compound used in hospitals for setting fractured bones?

(b) Write its chemical name and formula. How is it prepared? Write the chemical reaction involved. (c) Give its reaction with water. **[CBSE Boards 2015–16]**

43. (a) Name the compound used in hospitals for setting fractured bones.

(b) Write its chemical name and formula. (c) How is it prepared? Write chemical reaction involved.

(d) Give Its one important use. **[CBSE Boards 2014–15]**

44. (a) At what pH in the mouth is tooth decay faster and why? **[CBSE Boards 2014–15]**

(b) Why is it advised not to use copper or brass vessels to store pickles or curd?

45. Slate what happens when zinc granules are heated with sodium hydroxide solution. Write I he balanced equation for this reaction. Name the main product formed in this reaction. **[CBSE Boards 2014–15]**

46. Name the material used for the preparation of plaster of Paris. Write chemical equation for the reaction involved. What will happen if heating is not controlled while preparing plaster of Paris. Which property of plaster of Paris is utilised in making casts for broken limbs in hospital. Write an equation to show the reaction between plaster of Paris and water. **[CBSE Boards 2014–15]**

47. (a) What are the bases which are soluble in water called?

(b) Write any four uses of bases. **[CBSE Boards 2014–15]**

48. Write the names of the products formed when zinc reacts with NaOH. Also write the balanced chemical equation for the reaction involved. Write a test to confirm the presence of the gas evolved during this reaction. **[CBSE Boards 2014–15]**

49. (i) What is water of crystallization?

(ii) Write the common name and chemical formula of a commercially important compound which has ten water molecules as water of crystallization,

(iii) How is this compound obtained ?

(iv)Write the chemical equation for the formation of the above compound,

(v) List any two uses of this compound. **[CBSE Boards 2014–15]**

50. (a) What is Baking Powder?

(b) Why does pain occur in the stomach during indigestion?

(c) What is to be done to get rid of this pain? **[CBSE Boards 2013–14]**

51. (a) What is baking soda? Write its chemical formula and chemical name.

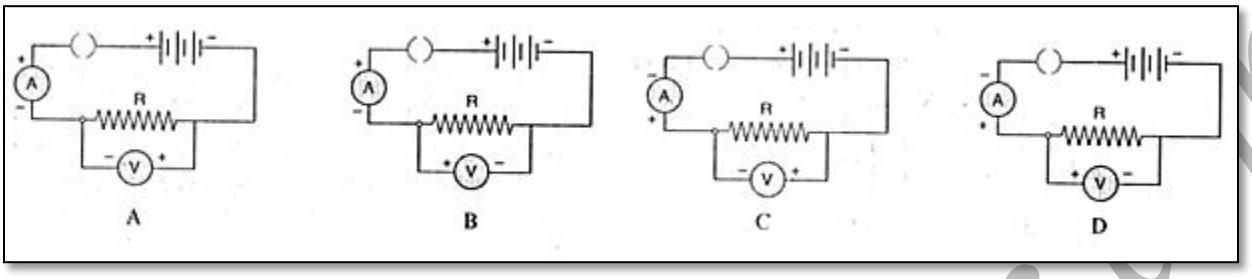
(b) How is baking soda produced? Write the chemical reaction.

(c) What is the effect of heat on baking soda?

(d) Write two applications of baking soda in our daily life. **[CBSE Boards 2013–14]**

MCQs [Practical Based Questions]

1. Out the four circuits shown tor studying the dependence of the current on the potential difference across a resistor, the correct circuit is:



(a) A (b) B (c) C (d) D

2. The rest positions of the needles in a milliammeter and voltmeter when not being used in shown in the figure. The 'zero error' and 'least count' of these two instruments are:

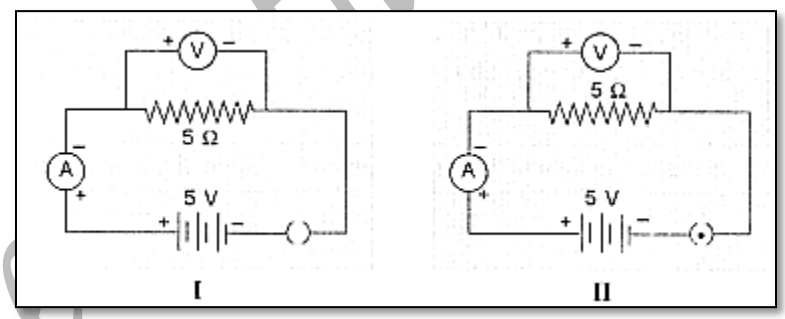
(a) 4 mA,– 0.2 V) and (1 mA, 0.1 V) respectively.

(b) (+4 mA, – 0.2 V) and (2 mA, 0.2 V) respectively.

(c) (–4 mA, + 0.2 V) and (2 mA, 0.2 V) respectively.

(d) (–4 mA, + 0.2 V) and (2 mA. 0.1 respectively.

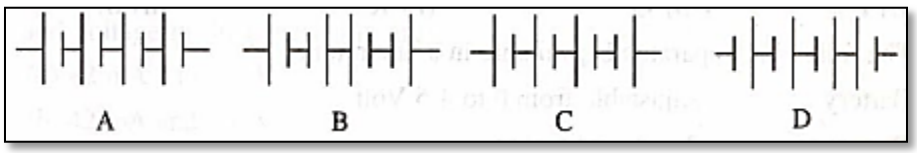
3. For the circuits shown in figures I and II, the ammeter readings would be:



(a) 1 A in circuit I and 0 A in circuit II. (b) 0 A in both circuits.

(b) 1 A in both circuits. (d) 0 A in circuit I and 1 A in circuit II.

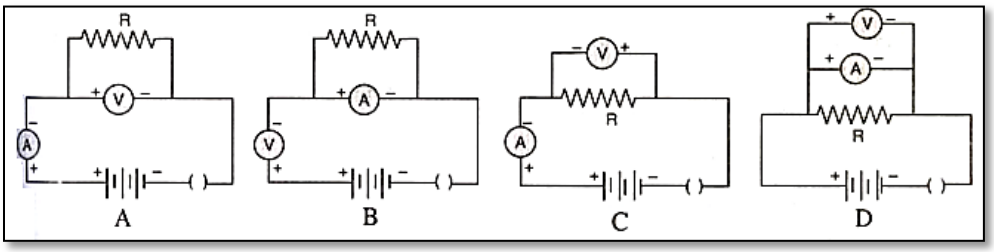
4. A student has to connect 4 cells of 1.5 V each, to form a battery of voltage 6 V.



The correct way of connecting these cells is shown in figure:

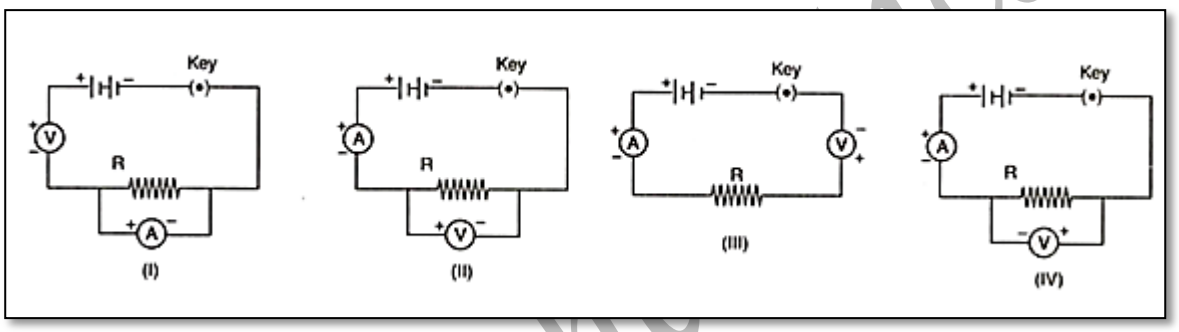
(a) A (b) B (c) C (d) D.

5. The correct set-up for studying the dependence of the current on the potential difference across a resistor is:



(a) A (b) B (c) C (d) D

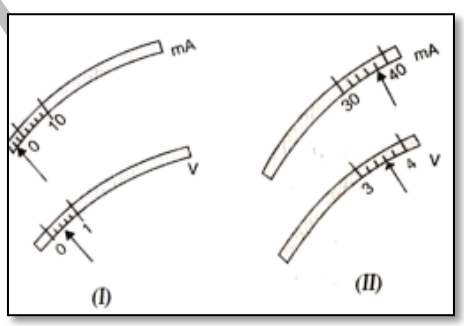
6. While performing the experiment on studying the dependence of current (I) on the potential difference (V) across a resistor, four students I, II, III and IV set-up the circuit as shown:



The correct result will be obtained by the student:

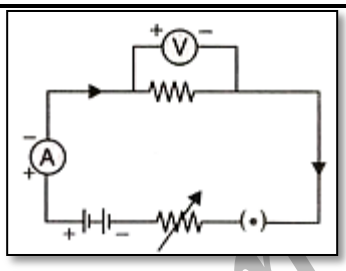
(a) I (b)II (c) III (d)IV.

7. The rest positions of the needles in a milliammeter and voltmeter not in use are as shown in Fig. I. When a student uses these in his experiment, the readings of the needle are in the positions shown in Fig. II. The corrected values of current and voltage in the experiment are:



(a) 42 mA and 3.2 V (b) 42 mA and 4 0 V (c) 34 mA and 3.2 V (d) 34 mA and 4.0 V.

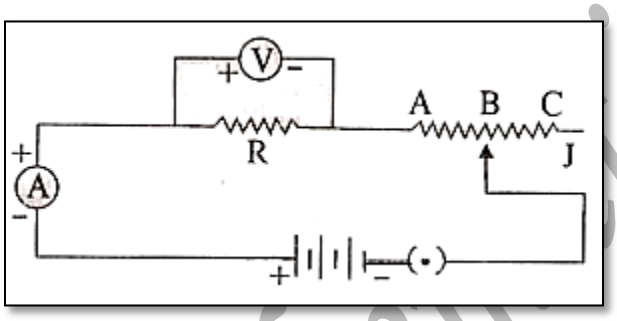
8. The following circuit diagram shows the experimental set-up for the study of dependence of current on potential difference. Which two circuit components are connected in series?



(a) battery and voltmeter (b) ammeter and voltmeter

(c) ammeter and rheostat (d) resistor and voltmeter.

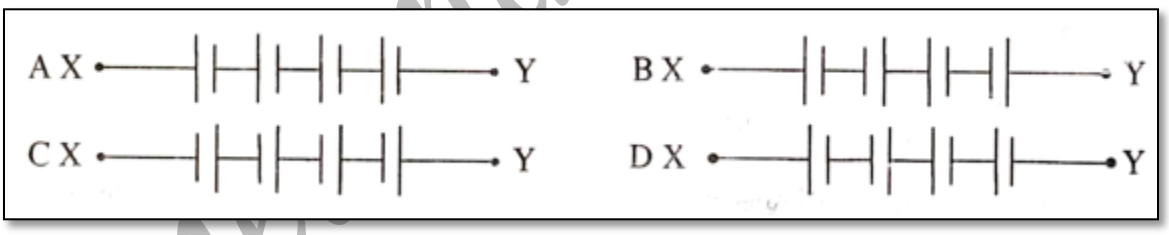
9. To study the dependence of current (I) flowing on across a resistor, a student sets- up his applied potential difference (V) across a resistor, a student sets-up his apparatus as shown. He puts the sliding contact J, in the positions A, B and C, one by one and notes the three readings of the voltmeter as V_A, V_B V_C and that of the ammeter as I_A, I_B and Ic. He would observe :



(a) $V_A=V_B=V_C$ but $I_A \neq I_B \neq I_C$ (b) $V_A \neq V_B \neq V_C$ but $I_A=I_B=I_C$

(c) $V_A < V_B < V_C$ but $I_A < I_B < I_C$ (d) $V_A > V_B > V_C$ but $I_A > I_B > I_C$

10. Four identical cells, of emf 1.5 V each, were connected in four different ways as shown. The potential difference, between the points X and Y, would equal 6.0 V, in case/cases:



(a) A and B (b) A and C (c) A and D (d) A only

Answers

1.	b	**2.**	c	**3.**	d	**4.**	a	**5.**	a
6.	a	**7.**	a	**8.**	c	**9.**	d	**10.**	b

Chapter Test

(Chemical reaction)

Maximum Marks 30 **Maximum Time: 40 Min.**

1. Why do iron railings on roadside get rusted if not painted? **[1]**

2. When the powder of a common metal is heated in an open China dish, its colour turns black. However, when hydrogen is passed over the hot black substance so formed, it regains its original colour.
Based on the given information, answer the following questions
(a) Name the metal initially taken in the powder form.
(b) What type of chemical reaction takes place in each of the two given steps? Write balanced chemical equations for both reactions. **[2]**

3. A solution of sodium sulphate is added to barium chloride solution. Write a balanced chemical equation for the reaction and the type of reaction. **[2]**

4. Why $CuSO_4$ solution can't be stored in iron container? Give chemical equation also. **[2]**

5. Complete the reactions and state their types. **[2]**
(a) $2KClO_3\,(s) \xrightarrow{\Delta}$ (b) $N_2(g) + 3H_2(g) \longrightarrow$
How are the two reactions different?

6. Draw the apparatus for electrolysis of water. Why is the amount of hydrogen produced, double the amount of oxygen? **[3]**

7. Balance the following chemical equations **[3]**
(a) $HNO_3 + Ca(OH)_2 \longrightarrow Ca(NO_3)_2 + H_2O$ (b) $FeSO_4 \xrightarrow{\Delta} Fe_2O_3 + SO_2 + SO_3$
(c) $C_6H_{12}O_6 + O_2 \longrightarrow CO_2 + H_2O$ + Heat

8. Write balanced equations for the following, mentioning the type of reaction involved.
(a) Aluminium + Bromine $\longrightarrow$ Aluminium bromide
(b) Calcium carbonate $\longrightarrow$ Calcium oxide +Carbon dioxide
(c) Silver chloride $\longrightarrow$ Silver + Chlorine **[3]**

9. What is rancidity? How is it prevented? Why do we fill chips packets with nitrogen gas? How does it help? **[4]**

10. A piece of sodium is dropped in water. What happens in this process? Which gas is evolved in the process? How is it detected? **[4]**

11. Define rusting. How does it occur? Write the reaction involved. What are its effects? Suggest two ways of preventing rusting. **[4]**

Chapter Test

(Acids, Bases and salts)

Maximum Marks 30 **Maximum Time: 40 Min.**

1. (a) Out of HCl and CH_3COOH which solution has higher value of pH?

(b) A student tests a sample of drinking water and reports its pH as 6 at room temperature, which compound do you think may have been added to water? **[2]**

2. Distinguish between strong acid and weak acid with examples. **[2]**

3. What is aqua regia? How is it obtained? State its properties. **[2]**

4. Give reasons for the following

(a) Iron develops brown layer on its surface in air.

(b) Copper develops green colour appearance in air.

(c) Iron articles are galvanised. **[3]**

5. What is water of crystallisation? Describe an activity to demonstrate that crystals contain water of crystallisation. **[3]**

6. Define chlor-alkali process. What are the uses of its products? **[3]**

7. Write the chemical equations for the reaction of

(a) potassium

(b) calcium, with air and water.

(c) Give two examples of metals which don't react with air and water. **[3]**

8. (a) For making cake, baking powder is taken. If at home your mother uses baking soda instead of baking powder in cake,

(i) How will it affect the taste of the cake and why?

(ii) How can baking soda be converted into baking powder?

(iii) What is the role of tartaric acid added to baking soda?

(b) Name the acid present in ant sting and give its chemical formula. Also give the common method to get relief from the discomfort caused by the ant sting. **[4]**

9. (a) A metal carbonate X on reacting with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y, it gives a compound Z, used for disinfecting drinking water. Identify XXG and Z.

(b) What happens when nitric acid is added to egg shell? **[4]**

10. What is the chemical name for baking soda? How is it produced? Why is it used in baking? Write the reactions involved. **[4]**

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