MULTIPLE CHOICE QUESTIONS

1)Which one of the following can be used as an acid– base indicator by a visually impaired student?

(A) Litmus

(B) Turmeric

(C) Vanilla essence (D) Petunia leaves

Ans -C

2)Generally, when certain metals react with an acid they release gas.

(a) Nitrogen

(b) Oxygen

(c) Hydrogen

d) Argon

Ans -C

3)Which of the following statement is correct about an aqueous solution of an acid and of a base?

(i) Higher the pH, stronger the acid (ii) Higher the pH weaker the acid

(iii) Lower the pH ,stronger the base (iv) Lower the pH, weaker the base

(a) i & iii

(b) ii & iii (c) I & iv (d) ii & iv

Ans -d

4)What is formed when zinc reacts with sodium hydroxide?

(a) Zinc hydroxide and sodium

(b) Sodium zincate and hydrogen gas

(c) Sodium zinc-oxide and hydrogen gas

d) Sodium zincate and water

Ans:b

5)Rain is called acid rain when its:

(a) pH falls below 7 (b) pH falls below 6

(c) pH falls below 5.6 (d) pH is above 7

Ans;c

II) ASSERTION REASONING

DIRECTIONS 3x1=3

A. Both A and R are true, and R is the correct explanation of A

B. Both A and R are true, and R is not the correct explanation of A

C. A is true, but R is false

D. A is False, but R is true

1. Assertion (A): Zinc can easily displace copper on reacting with a solution of copper sulphate.

Reason (R): Copper is more reactive metal as compared to Zinc.

Ans:c

2. Assertion (A): Rusting of iron involves formation of red brown flakes and wearing away of metal iron.

Reason (R): Iron shows rusting on its reaction with the moist air around it in which it forms iron oxide hydrated

Ans:a

3. Assertion (A): Aluminium is more reactive than iron. Its corrosion is less than that of iron.

Reason (R): Aluminium is covered with a strong protective layer of oxide which protects the metal from further corrosion

Ans:a

III) ANSWER THE FOLLOWING IN SHORT2x2=4

1)What type of oxides are formed when non – metals combine with Oxygen?

When nonmetals react with oxygen, they form acidic oxides or neutral oxides.

Example: Carbon reacts with oxygen to form an acidic oxide called carbon dioxide. Hydrogen reacts with oxygen to form neutral oxide called water.
(OR)
Ionic compounds are solids. Give reasons.
Ionic compounds are solids because the particles which make up ionic compounds
4) What are amphoteric oxides? Give two examples of amphoteric oxides :-
Amphoteric oxides are oxides that react with both acids and bases to produce salt and water.
Eg. Lead oxide (PbO)
Aluminium oxide(Al_2O_3)

ANSWER THE FOLLOWING IN BRIEF3x1=3

1)How does metal displace Hydrogen from acid. Give Chemical equation.
Ans: Hydrogen is displaced by the metals from acids that are placed above hydrogen in the reactivity series of the metals.
This is because these metals are more reactive than hydrogen.
Ex: Reaction of calcium with hydrochloric acid.
$Ca+2HCl \rightarrow CaCl_2+H_2$
Here, Hydrogen is displaced by Calcium from Hydrochloric acid.

ANSWER THE FOLLOWING IN DETAIL 3x5=15

1)a) Define corrosion.
(b) What is corrosion of iron called?
(c) How will you recognize the corrosion of silver?
(d) Why is corrosion of iron a serious problem?
(e) How can we prevent corrosion of iron?
Ans:
(a) The process of slowly eating up of metals due to their conversion into oxides, carbonates, sulphides, etc., by the action of atmospheric gases and moisture is called corrosion.
(b) The corrosion of iron is called rusting.
(c) Silver articles become black after some time when exposed to air. This is due to formation of a coating of black silver sulphide (Ag_2S) on its surface by the action of H_2S gas present in the air.
(d) Corrosion of iron is a serious problem. Every year a large amount of money is spent to replace damaged iron articles. Corrosion causes damage to car bodies, bridges and iron railings, ships and to all objects made of metals especially those of iron.
(e) Corrosion of iron is prevented by coating it with a layer of oil. The reason being that the layer of oil does not allow air and water to react with the surface of iron. Corrosion of iron can also be prevented by painting, greasing, galvanizing, anodizing, electroplating or making alloys.
2). Suggest a method of reduction for the following
10
1.
Mohan and Priyanka were playing in the garden. Priyanka was stung by a bee and started crying and returned home. Her mother immediately observed the affected area and applied a thin coating of toothpaste as first aid, then took her to the nearest doctor.
(i) Why did Priyanka cry?
(ii) Name the chemical substance present in bee sting.
(iii) How is toothpaste effective in such an incident?
Answer:
(i) Priyanka cried because the bee injected an acid while stinging which caused pain and irritation.
(ii) Formic acid or Methanoic acid (HCOOH)
(iii) Toothpaste is basic in nature so it neutralise the effect of formic acid and gives relief.
3)(i) Explain, why is hydrochloric acid a strong acid and acetic acid, a weak acid?
(ii) Explain, why aqueous solution of an acid conducts electricity.

(iii) You have four solutions A, B, C and D. The pH of solution A is 6, B is 9, C is 12 and D is 7.
(a) Identify the most acidic and most basic solutions.
(b) Arrange the above four solutions in the increasing order of H+ ion concentration.
(c) State the change in colour of pH paper on dipping in solution C and D.
Ans:
(i) Hydrochloric acid (HCl) is a stronger acid than acetic acid (CH_3COOH) because it dissociates completely into H^+ and Cl^- ions in aqueous solution.
In
(ii) An aqueous solution of an acid releases ions in aqueous solutions. These ions conduct electricity.
(iii) (a) Most acidic is A (pH = 6) and most basic is C (pH = 12).
(b) The increasing order of H^+ ion concentration is: C < B < D < A.
(c) The pH paper acquires dark purple
When electricity is passed through a common salt solution, sodium hydroxide is produced along with the liberation of two gases 'X' and T. The gas 'X' burns with a pop sound whereas T is used for disinfecting drinking water.
(i) Identify X and Y.
(ii) Give the chemical equation for the reaction stated above.
(iii) State the reaction of Y with dry slaked lime.
Answer:
(i) The gas X' is H_2 and gas 'Y' is Cl_2.
(ii) The chemical equation for the reaction is:
(iii) Cl_2 reacts with slaked lime to form bleaching powder.
$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$
A compound which is prepared from gypsum has the property of hardening when mixed with proper quantity of water. Identify the compound. Write chemical equation to prepare the compound. Mention one important use of the compound.
Ans:
The compound is Plaster of Paris ($CaSO_4 . 1/2 H_2O$). It is formed fromA compound which is prepared from gypsum has the property of hardening
when mixed with proper quantity of water. Identify the compound. Write chemical equation to prepare the compound. Mention one important use of the compound.
Ans:
The compound is Plaster of Paris ($CaSO_4 . 1/2 H_2O$). It is formed fromA compound which is prepared from gypsum has the property of hardening
when mixed with proper quantity of water. Identify the compound. Write chemical equation to prepare the compound. Mention one important use of the compound.
Ans:
The compound is Plaster of Paris ($CaSO_4 . 1/2 H_2O$). It is formed from