Question-22
Why is sodium kept immersed in kerosene?
Solution:
Sodium metal is kept immersed in kerosene to prevent their reaction with oxygen, moisture and carbon dioxide of air.

Question-23
Why do ionic compounds have high melting points?
Solution:
These compounds are made up of positive and negative ions. There is a strong force of attraction between the oppositively charged ions, so a lot of heat energy is required to break this force of attraction and melt the ionic compounds. This is why ionic compounds have high melting points.

Question-24
A man went door to door posing as a goldsmith. He promised to bring back the glitter of old and dull gold ornaments. An unsuspecting lady gave a set of gold bangles to him which he dipped in a particular solution. The bangles sparkled like new but their weight was reduced drastically. The lady was upset but after a futile argument the man beat a hasty retreat. Can you play the detective to find out the nature of the solution he had used?
Solution:
Aqua regia (By volume, this contains 3 parts of concentrated hydrochloric acid and 1 part of concentrated nitric acid) is the solution, which is used to sparkle the bangles like new, but their weight will be reduced drastically.

Question-25
Write equations for the reactions of
(i) iron with water
(ii) calcium and potassium with water
Solution:
(i) Iron reacts with steam to form magnetic oxide of Fe with the liberation of H_2.

$3Fe(s) + 4\,H_2O(g) \longrightarrow Fe_3O_4(s) + 4H_2(g)$

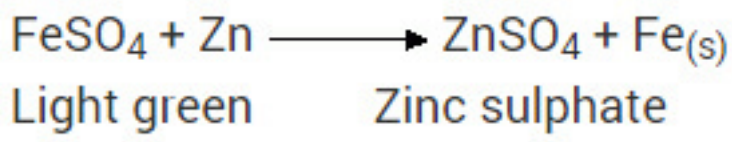
(ii) Calcium reacts with water to form calcium hydroxide and hydrogen.

$Ca(s) + 2H_2O(l) \longrightarrow Ca(OH)_2(aq) + H_2(g)$

Potassium reacts with cold water violently immediately with evolution of H2 which catches fire.

$2K(s) + 2H_2O(l) \longrightarrow 2KOH(aq) + 2H_2(g)$

Question-26
What would you observe when zinc is added to a sodium of iron(II) sulphate? Write the chemical reaction that takes place?
Solution:
Zinc is more reactive (more electro positive) than iron. Therefore it displaces iron from its salt solution. The colour of ferrous sulphate is pale green which becomes colourless.



Question-27
Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test-tube over the burning sulphur.
What will be the action of this gas on:
Dry litmus paper?
Moist litmus paper?
Write a balanced chemical equation for the reaction taking place.
Solution:
a) When sulphur is brunt in air then sulphur dioxide gas is formed.
(i) Sulphur dioxide gas has no action on dry litmus paper.
(ii) Sulphur dioxide gas turns moist blue litmus paper to red.
b) $S_{(s)} + O_{2(g)} \rightarrow SO_{2(g)}$

********** END **********