Question-1
What are amphoteric oxides? Give two examples of amphoteric oxides.
Solution:
Amphoteric oxides are the oxides, which react with both acids and bases to form salt and water. E.g. ZnO and Al_2O_3.

Question-2
Name two metals, which will displace hydrogen from dilute acids, and two metals which will not.
Solution:
Very reactive metals like Zn and Mg displace hydrogen from dilute acids. On the other hand less reactive metals like Cu, Ag, etc. do not displace hydrogen from dilute acids.

Question-3
In the electrolytic refining of a metal M, what would you take as the anode, the cathode and the electrolyte?
Solution:
Anode is impure, thick block of metal M.
Cathode is a thin strip/wire of pure metal M.
Electrolyte is a suitable salt solution of metal M.

Question-4
State two ways to prevent the rusting of iron.
Solution:
By coating the surface of iron by rust proof paints.
By applying oil or grease to the surface of iron objects so that supply of air consisting of moisture is cut off form the surface.

Question-5
What types of oxides are formed when non-metals combine with oxygen?
Solution:
When non-metals combine with oxygen it forms either neutral or acidic oxides. CO is a neutral oxide; N_2O_5 or N_2O_3 is an acidic oxide.

Question-6
Give reason
i. Metals replace hydrogen from dilute acids, where as non-metals do not.
ii. Carbonate and sulphide ores are usually converted into oxides during the process of extraction.
Solution:
i. Metals are electropositive in nature. They readily lose electrons. These electrons reduce the protons liberated from the acid to liberate hydrogen gas, where as non-metals possess a tendency to gain electrons and hence they do not furnish electrons to protons liberated from acids. Hence H_2 gas is not liberated.
ii. As it is easier to reduce metal oxides to metal, prior to reduction, metal sulphides and carbonates must be converted to oxides.

Question-7
Differentiate between metals and non-metals on the basis of their chemical properties.
Solution:

Metals	Non-metals
Metals on heating with oxygen form ionic oxides, which are basic in nature and which dissolve in water to form bases, which turn red litmus blue.	Non-metals on heating with oxygen form covalent oxides which are acidic in nature and dissolve in water to form acids, which turn blue litmus red.
Lustrous	Non-lustrous except graphite
Conductor of electricity and heat	Non-conductor of heat and electricity, except graphite
All are solid except mercury	Solid-liquid-gaseous
Electro positive. Loses electrons readily and becomes a positive ion	Electro negative: gain electrons and become negative ions.
Metals are reducing agents	Non-metals are good oxidizing agents

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