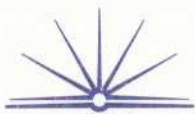


a) i) Steel

ii) Aluminium is extremely reactive and it automatically reacts with oxygen forming an oxide layer on it which protects it. After it has this oxide layer it becomes a very practical metal which is light-weight and has other positive properties.

b) i) Magnesium.

ii) sacrificial anodes are added to metal-hulled ships so that they can stop the ship from rusting and being corroded. The sacrificial anode will be eaten away before the metal of the ship is corroded. Therefore the sacrificial anode must be more reactive than the metal of the hull of the ship.



c) Adding other elements such as carbon to iron makes the properties and uses of the metal change. The ^{increase and decrease of} ~~more~~ carbon which is added to the iron, ~~the~~ ~~more~~ affects the hardness, brittle nature and the rigidity of the steel. Therefore if the hardness is increased it can be used as tools such as hammers etc. This also affects ~~the~~ the look of the metal with stainless steel being ~~extremely~~ shinier than normal steel. This is also the case with other metals being added.

As the ~~carbon~~ ^{the} percentage of carbon increases, the metal becomes ~~stronger~~ harder and less brittle. When the metal is harder and less brittle and stronger it can be used for heavier duty operations because it is more dependable.



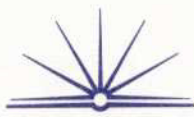
d)

i) corrosion is the eating away of a metal. It is a chemical reaction where the metal is displaced from its initial position.

ii) setting up each metal or alloy in ~~the same~~ separate test tubes or beakers with the same volume of solution and the same solution.

this way they are all in the same conditions. The variables must be set the same for every metal.

iii) They must all be in the same conditions such as temperature, light, volume and whether or not open to air. The metals must all also be the same shape and weight.



e) For silver, it must be electrolysed so as to remove the crust deposits on it. This can be done using a silver nitrate solution which will be replaced regularly to ensure the required amount of ions in the solution to perform the cleaning, ^{and to take out the 'mud'}. Another technique used in this process is leaching where the metal is placed in a neutral water solution (distilled water) and replaced with clean, new water regularly so as to drain the salt deposits from it. This stabilises the metal.

to preserve artefacts they can dip them in wax so that they have a protective coating on them which will stop them from reacting again. This keeps them air-tight which helps keeping them preserved.