

## Question 29

a, i, steel

ii, It can be used in this way because it is usually coated in a metal alloy such as zinc.

b, i, copper

ii, because they are not highly reactive.

c, Adding other elements to iron on the properties and uses of steels can increase or decrease the reactivity of the metals, thus making them more ~~appo~~ suitable to use.

d, i, Corrosion, also known as rusting, is the oxidation of ~~and~~ a metal. When Iron is oxidised, it forms the reaction  $\text{Fe}^{2+} + \text{O}_2 \rightleftharpoons \text{FeO}_2$

which is corrosion.

ii, Exposed a selected group of metals to the air, (oxygen), all under the same conditions and observe the rate in which they corrode. Metals can also be placed in solutions to determine the rate of reaction.



iii) Ensure all metals are under the same conditions, accurately ~~measure~~<sup>record</sup> all measurements, ensure temperatures are equal, use the same concentration of solutions which are used for all metals.

e, Iron from iron shipwrecks can be cleaned and stabilised by using solutions which reverse the process of rusting by means of equilibrium. This cleans and stabilises. Preservation can be undertaken by placing the metal in solution.