

**GCSE Chemistry A (Gateway Science)**  
**J248/02 C4-C6 and C7 Foundation (Foundation Tier)**

**Question Set 20**

1 This question is about metals and alloys.

(a) The table gives information about some alloys.

Alloy	Main metal or metals	Use
Brass	.....copper and zinc.....	Musical instruments and coins
Bronze	.....copper and tin.....	Statues
Duralumin	.....aluminium and copper.....	Aircraft parts
Solder	Lead and tin	Joining metals
Steel	Iron	Bridges, cars

Complete the table.

Choose your answers from the list.

**Aluminium and copper**

**Aluminium and iron**

**Copper and tin**

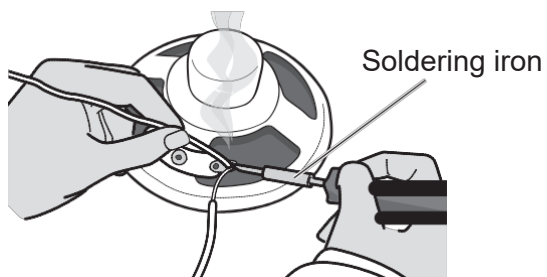
**Copper and zinc**

**Copper and lead**

**Lead and zinc**

[3]

(b) Solder can be used to join metals together. A hot soldering iron is used to melt the solder.



The table gives some information about solder, copper and tin.

Metal	Melting point (°C)	Density (g/cm <sup>3</sup> )	Relative hardness
Copper	1085	8.96	Soft
Tin	232	7.31	Soft
Solder	130	10.3	Quite hard

Solder is better than copper or tin for joining metals together.

Suggest why. Use the information in the table.

Because solder is hard, the joint made would be stable and it has low melting point thus it is easier to handle/melt. [2]

(c) Steel is an alloy containing iron.

Complete the **word equation** for the corrosion of iron.

Iron + oxygen + water → hydrated iron (III) oxide  
or  
ferric oxide [2]

(d) (i) Iron can be plated with a layer of **zinc** to prevent it corroding.

This is called **galvanising**.

Explain how galvanising prevents iron from corroding.

It prevents **corrosive substances** from reaching <sup>the</sup> **underlying iron**. [2]

(ii) Iron can also be plated with a layer of **tin** to prevent it corroding.

Describe a **disadvantage** of tin plating for preventing corrosion.

If the **tin plating** is scratched or penetrated the **underlying iron** would corrode more rapidly [1]

**Total Marks for Question Set 20: 10**

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