**Design & Technology**

**AQA GCSE** Logo

Description automatically generated with low confidence

**Metals and alloy**

**Materials required for questions**

* Pencil
* Rubber
* Calculator

**Instructions**

* Use black ink or ball-point pen
* Try answer all questions
* Use the space provided to answer questions
* Calculators can be used if necessary
* For the multiple choice questions, circle your answer

**Advice**

* Marks for each question are in brackets
* Read each question fully
* Try to answer every question
* Don’t spend too much time on one question

**Good luck!**

**Q1.** Which one of the following is ferrous?

**A** Aluminium

**B** Zinc

**C** Iron

**Q2.** Aluminium is used in the manufacture of cooking pots because it has which property?

**A** Malleability

**B** Thermal conductivity

**C** Electrical conductivity

**Q3.** Copper is used for wiring because of what property?

**A** It is ductile

**B** It is soft

**C** It is brittle

**Q4.** What might stainless steel be used to make?

**A** Kitchen utensils

**B** Ship propellers

**C** Magnets

**Q5a**. What is an alloy **(2 marks)**

**Q5b.** Name one alloy **(1 mark)**

**Q5c.** Explain why metals are alloyed **(2 marks)**

**Answers**

**Q1**. C

**Q2**. B

**Q3**. A

**Q4**. A

**Q5a.**

* A mixture of two or more metals
* To create a new metal (alloy) with improved properties

**Q5b.**

* Brass
* Bronze
* Duralumin
* Pewter
* Steel (accept any specifically named steel eg die steel (tool steel), high speed steel (HSS), stainless steel)

**Q5c.**

* Where a mixture of at least 2 metals are combined to give enhanced properties
* To produce a tough corrosion resistant material eg stainless steel
* Titanium can be alloyed with other metals like aluminium and vanadium for increased strength, better corrosion resistance and easier workability
* Alloying metals can improve working properties and improve aesthetics

Possible reference to examples of use to enhance explanation:

* Stainless steel – cutlery to make hard wearing and corrosion resistant
* Brass – copper and zinc for brass musical instruments due to workability into different forms and profiles