**Design & Technology**

**AQA GCSE** Logo

Description automatically generated with low confidence

**Material properties**

**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 a working property of a material?

**A** Absorbency

**B** Fusibility

**C** Malleability

**Q2.** A malleable material is one that

**A** Can be pressed into a shape or form

**B** Is able to withstand scratches and indents

**C** Is hard to break or snap

**Q3.** A tough material is described as one that can

**A** Bend and then return to its original shape

**B** Be shaped by pressing

**C** Withstand impacts without breaking

**Q4.** Aluminium is used in the manufacture of cooking pots because it has which property?

**A** Absorbency

**B** Electrical conductivity

**C** Thermal conductivity

**Q5.** A ductile material is commonly described as one that

**A** Can be drawn into a long length

**B** Does not scratch easily

**C** Resists corrosion and oxidisation

**Q6.** A kitchen sink has been manufactured from stainless steel.

Provide **two** physical and **two** mechanical characteristics of the metal chosen for the kitchen sink, along with an explanation for why each property is appropriate for this product **(8 marks)**

**Answers**

**Q1**. C

**Q2**. A

**Q3**. C

**Q4**. C

**Q5**. A

**Q6**.

Mechanical Properties

* Due to its hardness (1) since its surface resists scratches from cutlery, dishes, washing, etc (1)
* Toughness (1) prevents it from breaking if a pan is dropped on it (1)
* Malleability (1) means it is press-formable into the sink's shape (1)

Physical properties

* Corrosion resistance (1) won't rust or deteriorate when in contact with water (1)
* Chemical resistance (1) prevents detergent degradation (1)