**Design & Technology**

**Alloying**

**Materials required for questions**

* Pencil
* Rubber
* Calculator

**Instructions**

* Use black ink or ball-point pen
* Try to 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
* Don’t spend too much time on one question

**Good luck!**

**Q1.** Which one of the following materials is an alloy?

**A** Copper

**B** Zinc

**C** Brass

**Q2.** How are particles bonded together in metals?

**A** Covalent bonds

**B** Attractive forces between positive and negative ions

**C** Attractive forces between atoms and delocalised electrons

**Q3.** What is an alloy?

**A** A mixture of 2 or more elements, where at least 1 is a metal

**B** A mixture of 3 or more elements, where at least 1 is a metal

**C** A compound of 2 or more elements where at least 1 element is a metal

**Q4.** Which of these statements about alloys is correct?

**A** Most alloys are less useful than the individual elements that they are made from

**B** Most alloys are harder than the individual elements that they are made from

**C** Most alloys are softer than the individual elements that they are made from

**Q5.** Which of these materials is an alloy?

**A** Steel

**B** Iron

**C** Aluminium

**Q6.** Carbon steel is made from carbon and which other material?

**A** Copper

**B** Iron

**C** Brass

**Q7.** Which one of the following is iron alloyed with to make mild steel?

**A** Zinc

**B** Carbon

**C** Aluminium

**Q8.** Which one of the following not an alloy?

**A** Solder

**B** Bronze

**C** Nickel

**Q9.** A stainless steel fork is made from carbon, iron and other metals. Name two metals that can be alloyed with carbon and iron to make stainless steel. **(2 marks)**

**Answers**

**Q1.** C **Q2.** C **Q3.** A **Q4.** B **Q5.** A **Q6.** B **Q7.** B

**Q8.** C

**Q9.**

* Chromium
* Nickel
* Molybdenum
* Titanium
* Copper
* Niobium
* Manganese
* Aluminium
* Tin
* Magnesium

One mark per metal.