

10.4. USES OF METALS

01. 0620_w16_qp_23 Q: 27

Cryolite, Na_3AlF_6 , is added to aluminium oxide in the electrolytic extraction of aluminium.

What is the reason for this?

- A** to decrease the melting point of the electrolyte
 - B** to protect the anodes
 - C** to produce more aluminium
 - D** to stop the aluminium reacting with air
-

10.4 Uses of metals

02. 0620_m21_qp_22 Q: 26

Which statements about the uses of metals are correct?

- 1 Iron is used to make aircraft because iron has a low density.
- 2 Copper is used to make electric cables because copper is a good conductor of electricity.
- 3 Aluminium is used to make brass because aluminium is strong and hard.
- 4 Iron is mixed with additives to make an alloy used in chemical plant.

- A** 1 and 2 **B** 3 and 4 **C** 1 and 3 **D** 2 and 4
-

03. 0620_s21_qp_21 Q: 27

Which substances are used in the extraction of aluminium?

- A** bauxite and cryolite
 - B** bauxite and hematite
 - C** cryolite and zinc blende
 - D** hematite and zinc blende
-

04. 0620_s21_qp_21 Q: 28

Different types of steel alloys are manufactured by changing the percentage of carbon in the alloy.

The properties of four steel alloys are shown.

alloy mixture	percentage of carbon in the alloy	strength of the alloy	hardness of the alloy
1	0.00 to 0.20	high	low
2	0.21 to 0.30	high	medium
3	0.31 to 0.40	medium	high
4	0.41 to 1.50	low	high

What are the properties of the steel alloy containing 0.23% of carbon?

	strength	hardness
A	high	low
B	low	high
C	high	medium
D	medium	high

05. 0620_s21_qp_22 Q: 28

Mild steel consists mostly of iron. Mild steel can be prevented from rusting by a process called galvanising.

Copper is not a very strong metal, however if it is mixed with a suitable metal a strong alloy called brass is produced.

Which statement is correct?

- A** Copper corrodes very quickly when wet and brass does not.
- B** Copper is mixed with zinc to produce brass.
- C** Galvanising mild steel changes it from a pure metal into an alloy.
- D** When a steel object is galvanised this means it is coated with a thin layer of tin.

10.4. USES OF METALS

06. 0620_s21_qp_23 Q: 31

Metal X is a good conductor of electricity and is used for electrical wiring.

Metal Y is used to make an alloy which is resistant to corrosion and is used to make cutlery.

Metal Z is light and strong and is used in the manufacture of aircraft.

What are X, Y and Z?

	X	Y	Z
A	aluminium	iron	copper
B	copper	iron	aluminium
C	aluminium	copper	iron
D	copper	aluminium	iron

07. 0620_w21_qp_21 Q: 27

Aluminium objects do not need protection from corrosion.

Iron objects must be protected from corrosion.

Which statement explains why aluminium resists corrosion?

- A** Aluminium does not form ions easily.
- B** Aluminium does not react with water or air.
- C** Aluminium has a protective oxide layer.
- D** Aluminium is below iron in the reactivity series.

08. 0620_w21_qp_22 Q: 27

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09. 0620_w21_qp_23 Q: 27

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10. 0620_m20_qp_22 Q: 28

Some properties of aluminium are listed.

- 1 It conducts heat.
- 2 It has a low density.
- 3 It is strong.
- 4 It is resistant to corrosion.

Which of these properties make aluminium suitable for making food containers for chilled food products?

- A 1, 2 and 4
 - B 1, 3 and 4
 - C 1 only
 - D 4 only
-

10.4. USES OF METALS

11. 0620_w20_qp_21 Q: 30

What is the symbol of the metal used in the manufacture of aircraft because of its strength and low density?

- A** Al **B** Cu **C** Fe **D** Zn
-

12. 0620_w20_qp_22 Q: 30

Why is aluminium metal unreactive with air?

- A** It is covered with a layer of oxide.
B It is low in the reactivity series.
C It is produced by electrolysis of its oxide.
D It melts at a high temperature.
-

13. 0620_s19_qp_21 Q: 27

Why is aluminium used to make containers for storing food?

- A** It conducts electricity.
B It has a high melting point.
C It is resistant to corrosion.
D It is strong.
-

14. 0620_s19_qp_22 Q: 27

Which property of aluminium makes it useful in the manufacture of aircraft?

- A** conducts electricity
B high boiling point
C low density
D silver colour
-

15. 0620_s19_qp_23 Q: 27

Aluminium is used to make containers for storing food.

Which property makes it suitable for this use?

- A** conducts heat
B low density
C resists corrosion
D shiny surface
-

16. 0620_w19_qp_21 Q: 27

Which statement is correct?

- A** Aluminium is used in the manufacture of aircraft because it has a high density.
- B** Copper is used for cooking utensils because it is a good conductor of heat.
- C** Mild steel is used for car bodies because it is resistant to corrosion.
- D** Stainless steel is used for cutlery because it is a conductor of electricity.

17. 0620_w19_qp_22 Q: 27

Which row describes the uses of aluminium, copper and mild steel?

	aluminium	copper	mild steel
A	aircraft bodies	electrical wiring	car bodies
B	car bodies	cooking utensils	electrical wiring
C	electrical wiring	aircraft bodies	food containers
D	food containers	aircraft bodies	cooking utensils

18. 0620_w19_qp_23 Q: 27

Which statement about metals and their uses is correct?

- A** Aluminium is used in the manufacture of aircraft because it has a high density.
- B** Copper is used to make cooking utensils because it is a poor conductor of heat.
- C** Mild steel is used to make car bodies because it is brittle and breaks easily.
- D** Stainless steel is used to make cutlery because it is resistant to corrosion.

19. 0620_m18_qp_22 Q: 27

Which statement about the uses of aluminium, copper and iron is correct?

- A** Aluminium is used for aircraft manufacture because it has a high density.
- B** Aluminium is used for food containers because it is a good conductor of electricity.
- C** Copper is used for cooking utensils because it is a good conductor of heat.
- D** Stainless steel is used for car bodies because it corrodes easily.

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20. 0620_s18_qp_21 Q: 27

Which statement explains why aluminium is used in the manufacture of aircraft?

- A It conducts heat well.
- B It has a low density.
- C It is a good conductor of electricity.
- D It is easy to recycle.

21. 0620_s18_qp_22 Q: 27

Which row describes the use of an alloy and the property upon which the use depends?

	alloy	use	property
A	mild steel	cutlery	resistant to corrosion
B	mild steel	machinery	strong
C	stainless steel	cutlery	low density
D	stainless steel	machinery	good conductor of electricity

22. 0620_s18_qp_23 Q: 27

Which statement explains why aluminium is used to manufacture aircraft?

- A It has a low density.
- B It is a good conductor of electricity.
- C It is a good conductor of heat.
- D It is ductile.

23. 0620_w18_qp_21 Q: 26

Which row shows uses of the metals listed?

	aluminium	copper	mild steel
A	aircraft manufacture	food containers	cutlery
B	cutlery	electrical wiring	chemical plant
C	electrical wiring	aircraft manufacture	cooking utensils
D	food containers	cooking utensils	car bodies

24. 0620_w18_qp_22 Q: 26

Which statement about the uses of metals is **not** correct?

- A** Aluminium is used in aircraft because of its strength and good electrical conductivity.
- B** Copper is used in electrical wiring because of its good electrical conductivity.
- C** Stainless steel resists corrosion and is used to make cutlery.
- D** Transition elements are often used as catalysts.

25. 0620_w18_qp_23 Q: 26

Which row describes the use of a metal and the property upon which the use depends?

	metal	use	property
A	aluminium	aircraft bodies	aluminium is a heat conductor
B	aluminium	cooking utensils	aluminium has a low density
C	copper	cooking utensils	copper has a high density
D	copper	electrical wiring	copper is a good conductor of electricity

26. 0620_s17_qp_21 Q: 28

Stainless steel is an alloy of iron and other metals. It is strong and does not rust but it costs much more than normal steel.

What is **not** made from stainless steel?

- A** cutlery
- B** pipes in a chemical factory
- C** railway lines
- D** saucepans

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27. 0620_w17_qp_21 Q: 27

Which row describes how the metals are used?

	mixed with zinc to form brass	used to galvanise iron
A	aluminium	tin
B	aluminium	zinc
C	copper	tin
D	copper	zinc

10.4. USES OF METALS

28. 0620_w17_qp_22 Q: 27

Which statement about the metal zinc is **not** correct?

- A It forms an oxide more readily than iron.
 - B It is manufactured by the electrolysis of zinc blende.
 - C It is used to make brass.
 - D It is used to prevent iron from rusting.
-

29. 0620_w17_qp_23 Q: 27

Metal M is mixed with copper to produce brass.

What is M?

- A chromium
 - B nickel
 - C vanadium
 - D zinc
-

30. 0620_m16_qp_22 Q: 25

Brass is an alloy of two metals.

Which row gives a correct use for the two metals from which brass is made?

	metal 1	metal 2
A	used for electrical wiring	used for galvanising steel
B	used for galvanising steel	used for making aircraft
C	used for making aircraft	used for making cutlery
D	used for making cooking pans	used for electrical wiring

31. 0620_s16_qp_21 Q: 27

Which statement about the uses of metals is correct?

- A Aluminium is used in the manufacture of aircraft because of its strength and high density.
 - B Copper is used in electrical wiring because of its strength and high density.
 - C Mild steel is used in the manufacture of car bodies because of its strength and resistance to corrosion.
 - D Stainless steel is used in the construction of chemical plant because of its strength and resistance to corrosion.
-

32. 0620_s16_qp_23 Q: 27

Copper is a transition element used to make saucepans.

Which property is **not** correct for copper?

- A good conductor of heat
- B insoluble in water
- C low melting point
- D malleable (can be hammered into shape)

33. 0620_w16_qp_22 Q: 28

The alloy brass is a mixture of copper and another metal.

Brass is used to make the pins of electrical plugs.

Copper is used to make electrical wiring.

Which row about brass is correct?

	hardness	electrical conductivity	other metal
A	harder than copper	better than copper	tin
B	harder than copper	worse than copper	zinc
C	softer than copper	better than copper	tin
D	softer than copper	worse than copper	zinc

34. 0620_w16_qp_23 Q: 28

Different forms of steel contain different proportions of carbon.

Steel P contains a high proportion of carbon.

Steel Q contains a low proportion of carbon.

Which statement is correct?

- A P is stronger and more brittle than Q.
- B P is stronger and less brittle than Q.
- C P is less strong and more brittle than Q.
- D P is less strong and less brittle than Q.

SN	Paper	Q. No.	Answer
01	0620_w16_qp_23	27	A
02	0620_m21_qp_22	26	D
03	0620_s21_qp_21	27	A
04	0620_s21_qp_21	28	C
05	0620_s21_qp_22	28	B
06	0620_s21_qp_23	31	B
07	0620_w21_qp_21	27	C
08	0620_w21_qp_22	27	C
09	0620_w21_qp_23	27	C
10	0620_m20_qp_22	28	D
11	0620_w20_qp_21	30	A
12	0620_w20_qp_22	30	A
13	0620_s19_qp_21	27	C
14	0620_s19_qp_22	27	C
15	0620_s19_qp_23	27	C
16	0620_w19_qp_21	27	B
17	0620_w19_qp_22	27	A
18	0620_w19_qp_23	27	D
19	0620_m18_qp_22	27	C
20	0620_s18_qp_21	27	B
21	0620_s18_qp_22	27	B
22	0620_s18_qp_23	27	A
23	0620_w18_qp_21	26	D
24	0620_w18_qp_22	26	A
25	0620_w18_qp_23	26	D
26	0620_s17_qp_21	28	C
27	0620_w17_qp_21	27	D
28	0620_w17_qp_22	27	B
29	0620_w17_qp_23	27	D
30	0620_m16_qp_22	25	A
31	0620_s16_qp_21	27	D
32	0620_s16_qp_23	27	C
33	0620_w16_qp_22	28	B
34	0620_w16_qp_23	28	A