

O Level Combined Chemistry MCQs

Metals Test 1.0

Q1

Which statement about the production of iron from haematite is correct?

- A Coke is used to oxidise the slag.
- B Limestone is used to produce oxygen for the coke to burn.
- C Molten iron floats on slag at the furnace base.
- D The haematite is reduced by carbon monoxide.

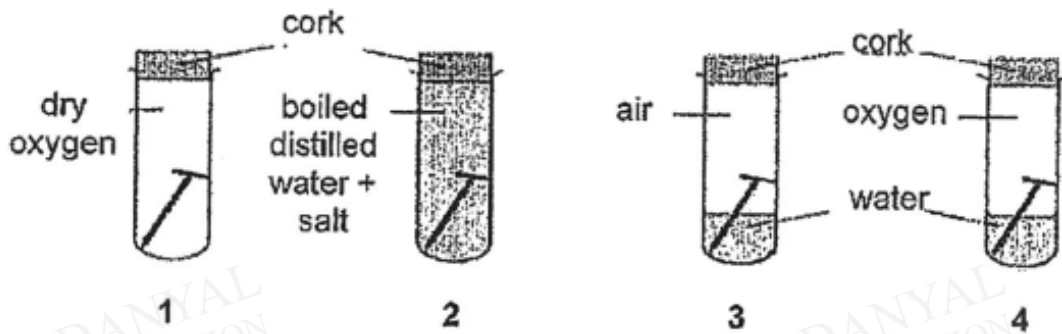
Q2

Which statement about the extraction of iron in the blast furnace is correct?

- A The oxide of iron is oxidised by carbon monoxide.
- B Slag is the basic impurity present in iron ore.
- C Slag sinks below molten iron at the base of the furnace.
- D The reaction between the oxide of iron and carbon monoxide liberates carbon dioxide.

Q3

An experiment was set up as shown below to investigate the rate of rusting under different conditions.

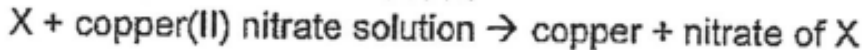
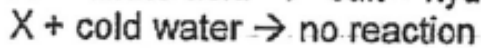
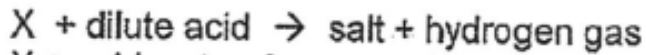


Predict the order of the test-tubes in which rust would first appear.

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

Q4

A metal X reacts as follows:



By comparing X with Ca and Cu, we can deduce that the correct order of the metals in decreasing reactivity is:

- A Ca Cu X
- B Ca X Cu
- C X Cu Ca
- D Cu Ca X

Q5

Three metals, X, Y and Z were heated separately with oxides of four metals, P, Q, R and S, to find out the order of reactivity.

The results are shown in the table.

metal	metal oxide			
	P	Q	R	S
X	x	x	x	x
Y	✓	✓	x	✓
Z	x	✓	x	x

key

✓ = reaction observed

x = no reaction observed

What is the order of reactivity of the metals from the least reactive to most reactive?

- A $X \rightarrow Z \rightarrow Y$
- B $X \rightarrow Y \rightarrow Z$
- C $Y \rightarrow Z \rightarrow X$
- D $Z \rightarrow Y \rightarrow X$

Q6

Which reaction occurring in the blast furnace is an acid base reaction?

- A $C + CO_2 \rightarrow 2CO$
- B $C + O_2 \rightarrow CO_2$
- C $CaO + SiO_2 \rightarrow CaSiO_3$
- D $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

Q7

Metal P is more reactive than metal Q which is more reactive than metal R.
The sulfates of P and R are colourless; the sulfate of Q is blue.

Which observation is correct when one of these metals was added to the sulfate solution of another metal?

	metal added	solution of sulfate	colour change of solution
A	P	Q	blue → colourless
B	Q	P	colourless → blue
C	Q	R	blue → colourless
D	R	Q	blue → colourless

Q8

Which is a reason for recycling aluminium?

- A aluminium made by recycling is less pure than that made by extraction
- B less energy is needed for recycling than extraction
- C recycling aluminium is less expensive than extraction
- D to reduce damage to the environment caused by extraction

Q9

Iron is extracted in the blast furnace using the raw materials haematite, coke and limestone.

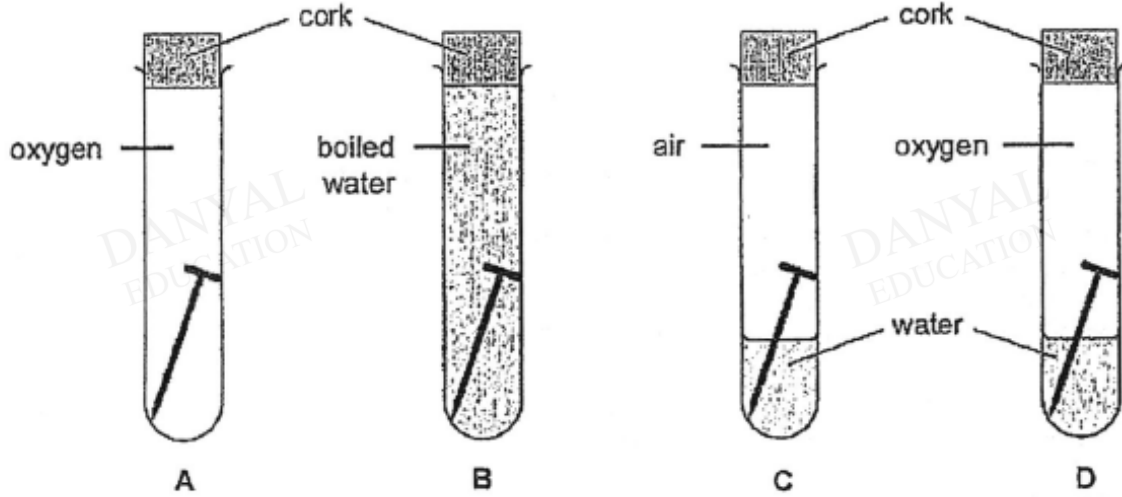
Which substance undergoes thermal decomposition?

- A carbon monoxide
- B coke
- C haematite
- D limestone

Q10

Four iron nails were placed into four different test-tubes to investigate the rate of rusting under different conditions.

In which test-tube would the iron nail rust first?



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Answers

Metals Test 1.0

Q1 D

Q2 D

Q3 B

Q4 B

Q5 A

Q6 C

Q7 A

Q8 D

Q9 D

Q10 D

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