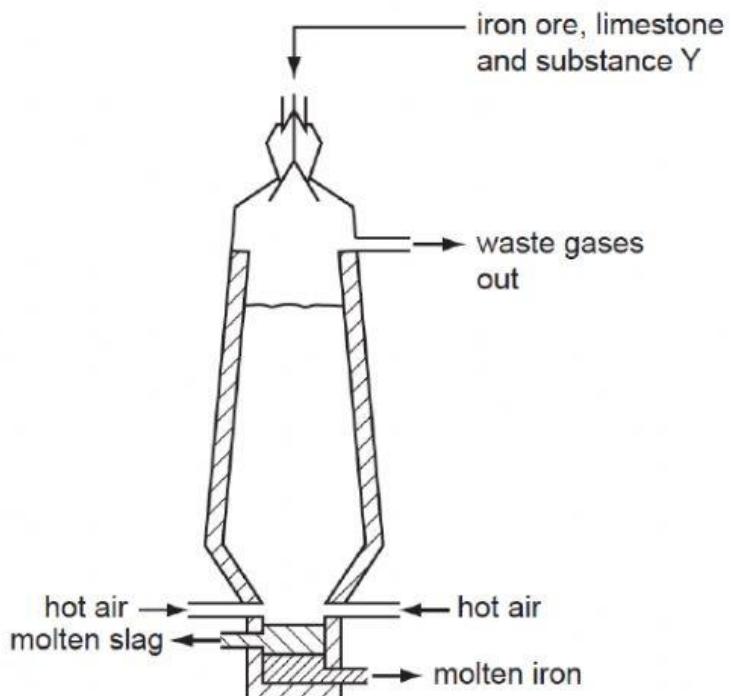


EXTRACTION OF METALS HW1

1 Which substance is added to a blast furnace to remove impurities from iron ore?

A carbon
B limestone
C sand
D slag

2 The diagram shows a blast furnace used to extract iron from iron ore.



What is Y?

A bauxite
B coke
C oxygen
D sand

3 Which reaction takes place in the blast furnace?

A $\text{FeCr}_2\text{O}_4 + 4\text{C} \rightarrow \text{Fe} + 2\text{Cr} + 4\text{CO}$
B $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$
C $\text{SiO}_2 + \text{CaO} \rightarrow \text{CaSiO}_3$
D $\text{SiO}_2 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SiO}_3 + \text{H}_2\text{O}$

4 Iron is extracted from its ore using carbon.

Aluminium cannot be extracted from its ore using carbon.

Which statement explains why iron is extracted using carbon?

- A Iron is less reactive than aluminium.
- B Iron is less reactive than carbon.
- C Iron is more dense than aluminium.
- D The melting point of iron is more than that of aluminium.

5 Fig. 7.1 shows a blast furnace for the extraction of iron from haematite, Fe_2O_3 .

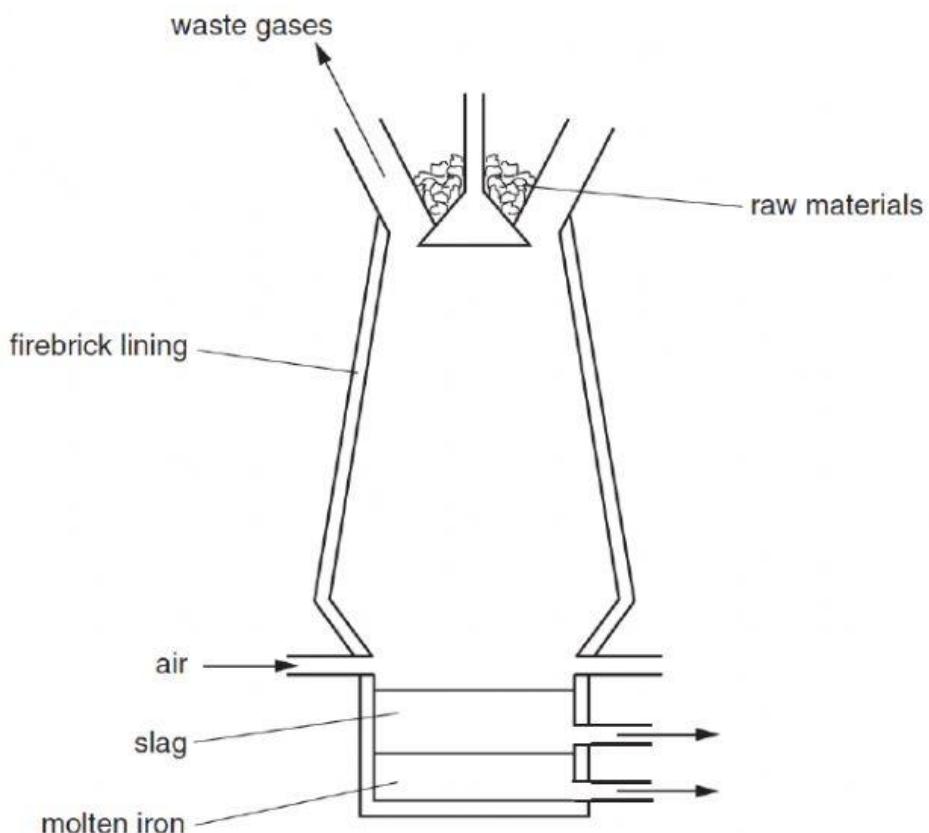


Fig. 7.1

(a) Name the raw materials put in at the top of the blast furnace with the haematite.

..... and [2]

(b) (i) Balance the following equation for the reduction of haematite to iron.



[1]

6 Fig. 1.1 shows the extraction of iron from iron ore using a blast furnace.

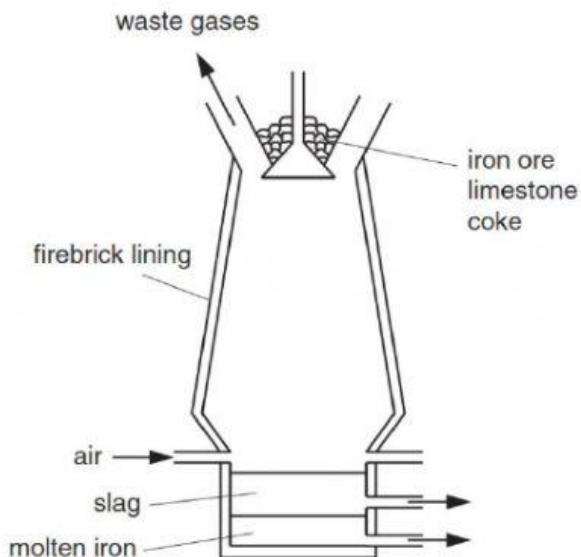


Fig. 1.1

(a) (i) State the name of an iron ore. [1]

(ii) Why is limestone added to the blast furnace?

..... [1]

(b) In the blast furnace, iron is extracted from its ore by reduction using carbon. Explain why sodium cannot be extracted from its ore by reduction using carbon.

..... [2]

(c) The cutlery in Fig. 1.2 is made from stainless steel.

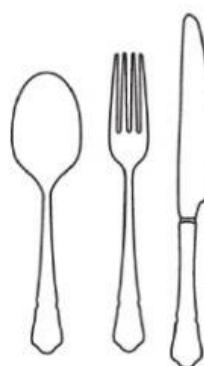


Fig. 1.2

(i) Stainless steel is an alloy.
What is an *alloy*?

..... [1]

