EXTRACTION OF METALS HW1

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

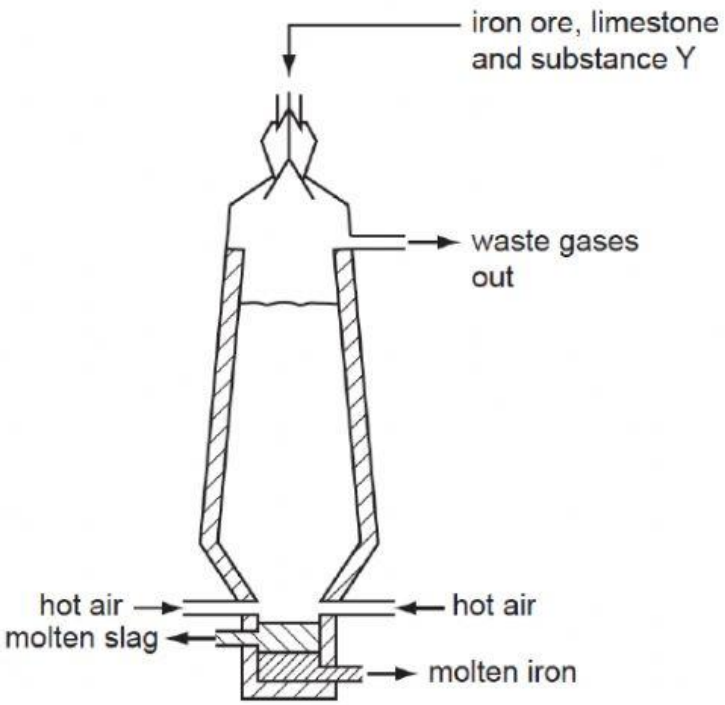
A carbon

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 $FeCr_2O_4 + 4C \rightarrow Fe + 2Cr + 4CO$

B $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$

C $SiO_2 + CaO \rightarrow CaSiO_3$

D $SiO_2 + 2NaOH \rightarrow Na_2SiO_3 + H_2O$

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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.

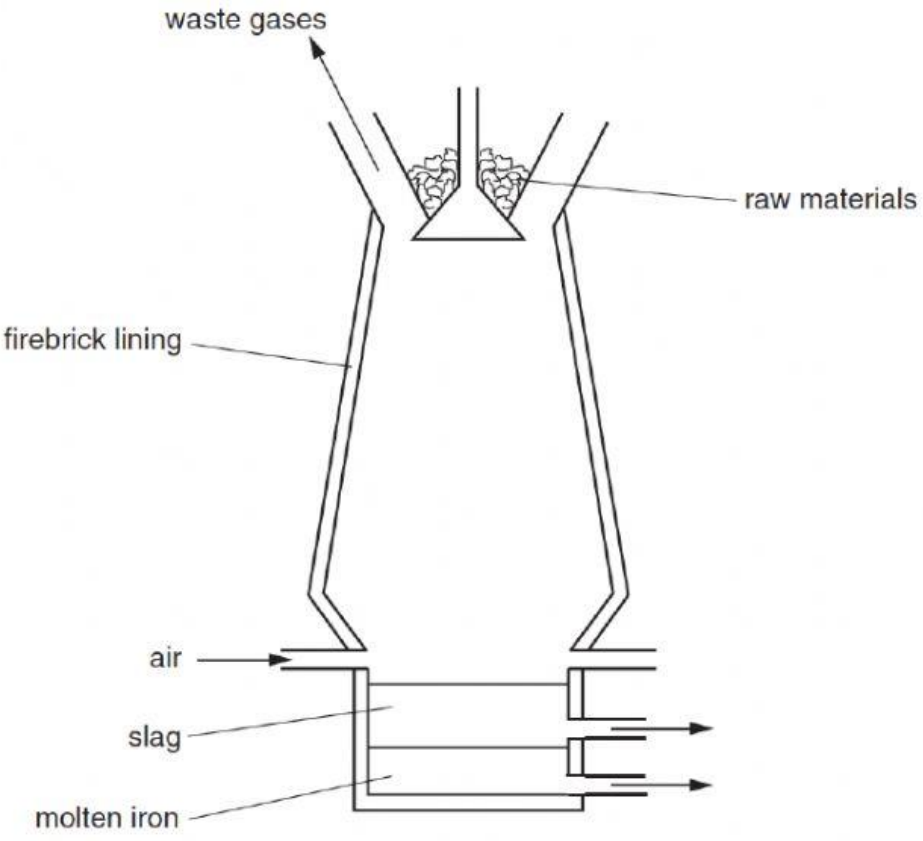


Fig. 7.1

(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.

$$Fe_2O_3 + \text{.....}\ CO \longrightarrow \text{.....}Fe + \text{.....}\ CO_2$$

[1]

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

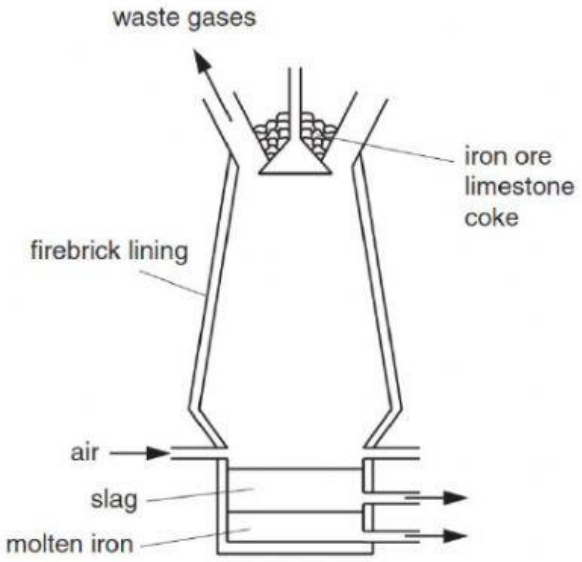


Fig. 1.1

(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.

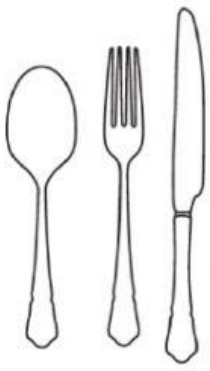


Fig. 1.2

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

.....

.....[1]

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