



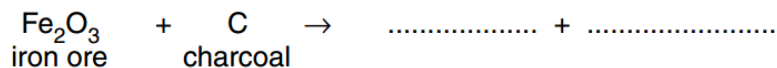
TOPPERZ @ WORK EDUCATION CENTRE

CLASS: IGCSE IX
SUBJECT: CHEMISTRY

TOPIC: EXTRACTION OF METALS
TIME: 30 MINUTES

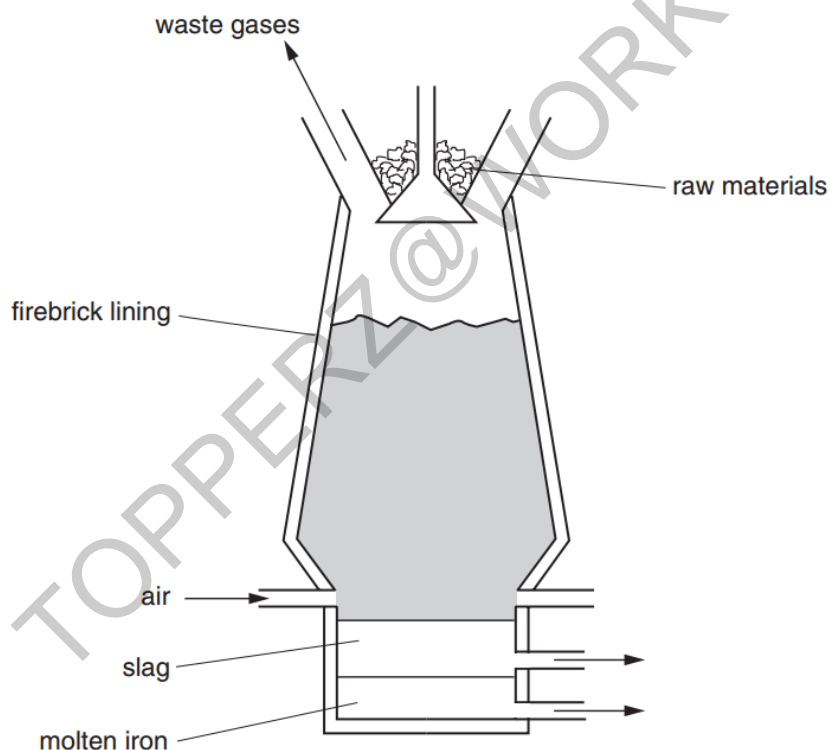
1 No one knows where iron was first isolated. It appeared in China, the Middle East and in Africa. It was obtained by reducing iron ore with charcoal.

(a) Complete the following equation.



[2]

(b) In 1705 Abraham Darby showed that iron ore could be reduced using coke in a blast furnace.





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- (i) The temperature in the furnace rises to 2000 °C. Write an equation for the exothermic reaction that causes this high temperature.

.....

- (ii) In the furnace, the ore is reduced by carbon monoxide. Explain how this is formed.

.....

.....[3]

- (c) The formation of slag removes an impurity in the ore. Write a word equation for the formation of the slag.

.....[2]

- (d) Stainless steel is an alloy of iron. It contains iron, other metals and about 0.5% of carbon.

- (i) State a use of stainless steel.

.....

- (ii) Name a metal, other than iron, in stainless steel.

.....

- (iii) The iron from the blast furnace is impure. It contains about 5% of carbon and other impurities, such as silicon and phosphorus. Describe how the percentage of carbon is reduced and the other impurities are removed.

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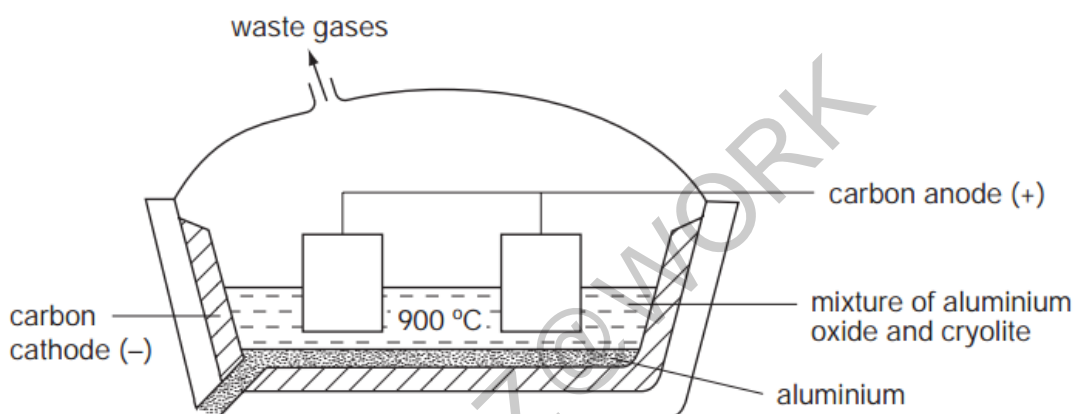
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.....[6]

2 The position of aluminium in the reactivity series of metals is shown below.

magnesium
aluminium
zinc
copper

(a) Aluminium is extracted by the electrolysis of its molten oxide.



(i) Name the main ore of aluminium.

..... [1]

(ii) Why does the molten electrolyte contain cryolite?

..... [1]

(iii) Oxygen is produced at the positive electrode (anode). Name another gas which is given off at this electrode.

..... [1]