



13

CARBONATES

Learning Outcomes:

Candidates should be able to:

Core

- (a) Describe the manufacture of lime (calcium oxide) from calcium carbonate (limestone) in terms of thermal decomposition
- (b) Name some uses of lime and slaked lime as in treating acidic soil and neutralising acidic industrial waste products, e.g. flue gas desulfurisation
- (c) Name the uses of calcium carbonate in the manufacture of iron and of cement

13 Carbonates

Questions

13-1-Q-01

examined in 2012 Jun P2 Q3

Metal carbonates react with acids.

- (i) Give the word equation for the reaction of calcium carbonate with hydrochloric acid. [3]
- (ii) Calcium carbonate can be used to treat acidic soil.
Give another use of calcium carbonate. [1]
- (iii) Name another compound that can be used to treat acidic soil. [1]



13-1-M-02

examined in 2012 Jun P3 Q1

Fish live in neutral water, which neither acidic nor alkaline. Acid rain acidifies water in lakes and rivers by decreasing the pH of the water.

Both of the bases, calcium oxide and calcium carbonate, can be used to neutralise this acid and increase the pH.

Explain why between the two, calcium carbonate is a better choice. [2]



13-1-M-03

examined in 2012 Jun P3 Q5

Reactive metals tend to form unreactive compounds. The following shows part of the reactivity series.

Sodium	most reactive
Calcium	↓
Zinc	
Copper	
Silver	least reactive

Sodium hydroxide and sodium carbonate do not decompose under heat.

The corresponding calcium compounds however decompose when heated.

Complete the following equations.



[2]





Answer keys:

13

Questions

13-1-Q-01

(i) calcium carbonate +
hydrochloric acid →
calcium chloride +
carbon dioxide +
water

(ii) making lime

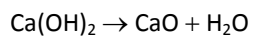
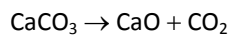
(iii) calcium oxide

13-1-Q-02

Calcium oxide is soluble in
water.

Calcium carbonate
insoluble in water

13-1-Q-03



Notes: