

Q4

Three elements X, Y and Z belong to the same period in the Periodic Table.

A student made three statements about the properties of their oxides.

- 1 Oxide of X: Soluble in both dilute nitric acid and aqueous sodium hydroxide.
- 2 Oxide of Y: Insoluble in water and aqueous sodium hydroxide but dissolves readily in dilute nitric acid.
- 3 Oxide of Z: Decolourises purple acidified potassium manganate(VII).

What is the order of the three elements in increasing atomic number?

- A X, Y, Z
- B Y, X, Z
- C Y, Z, X
- D Z, Y, X

Q5

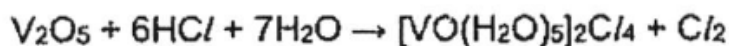
Lakes polluted by acid rain may be treated by limestone, CaCO_3 . If large lumps of impure limestone are used instead of powder, the reaction stops after a short time.

Which statement best explains why does the reaction stop after a short while?

- A A layer of insoluble calcium sulfate forms on the surface of the lumps.
- B The limestone contains small amounts of calcium carbonate.
- C Powdered limestone is more reactive than limestone lumps.
- D The acid reacts with calcium sulfate formed instead of calcium carbonate.

Q6

Vanadium(V) oxide reacts with hydrochloric acid to form an ionic compound according to the following equation.



What is vanadium(V) oxide acting as in this reaction?

- A a base
- B a dehydrating agent
- C an oxidising agent
- D a reducing agent

Q7

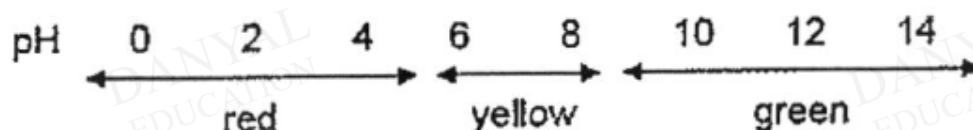
To grow well, plants require neutral or slightly alkaline soil and nitrogen found in the soil. However, acid rain may cause the pH of soil to drop.

Which of the following fertilisers should be used to grow plants on soil affected by acid rain?

Fertiliser	Components
A	$\text{Ca}(\text{OH})_2$, NH_4Cl
B	$\text{Ca}(\text{OH})_2$, NaNO_3
C	$\text{Ca}(\text{NO}_3)_2$, HNO_3
D	$\text{Ca}(\text{NO}_3)_2$, $(\text{NH}_4)_2\text{SO}_4$

Q8

The colour of an indicator X in solutions of different pH is shown below.

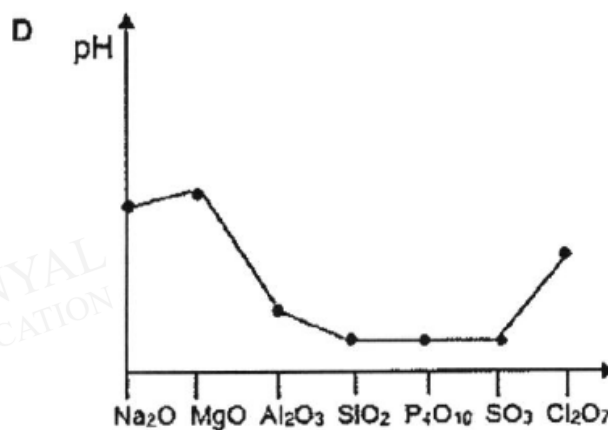
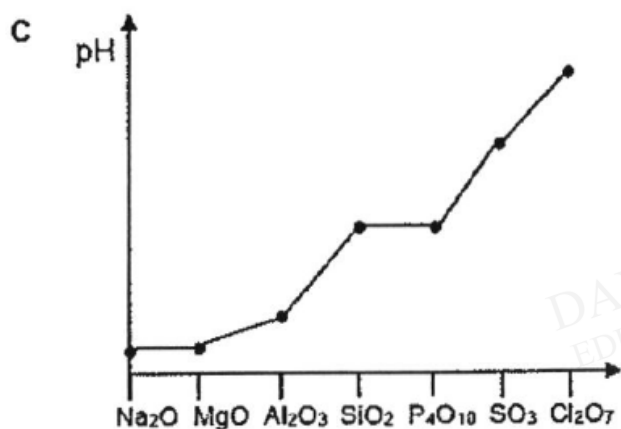
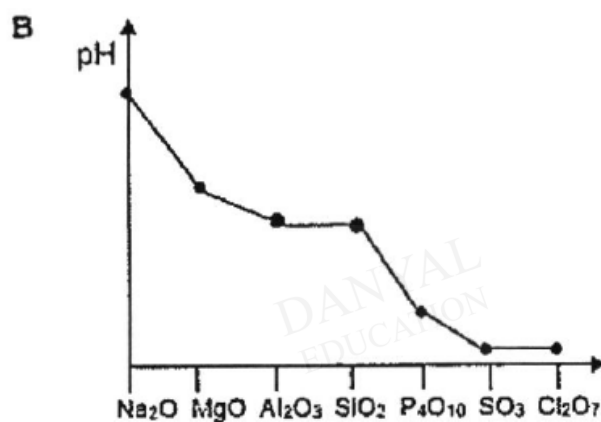
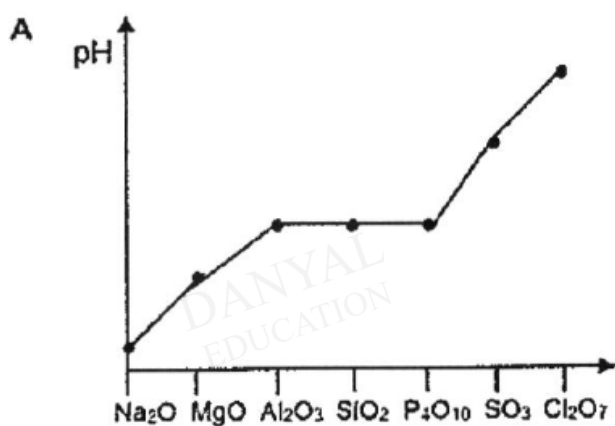


Indicator X could be used to distinguish between _____.

- A aqueous sodium chloride and aqueous sodium hydroxide
- B aqueous sodium hydroxide and aqueous ammonia
- C hydrochloric acid and nitric acid
- D sulfuric acid and acid rain

Q9

The oxides of the elements of Period 3, sodium to chlorine, are separately added to water. Which one of the following diagrams best represents the pH of the solutions produced?



Q10

Why do farmers and gardeners often treat soil with ammonium sulfate?

- A To reduce acidity of soil.
- B To kill insects which are harmful to plants.
- C To increase the sulfur content of the soil.
- D To increase the nitrogen content of the soil.

Answers

Acids and Bases Test 4.0

Q1 D

Q2 C

Q3 C

Q4 B

Q5 A

Q6 A

Q7 B

Q8 A

Q9 B

Q10 D

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION

DANYAL
EDUCATION