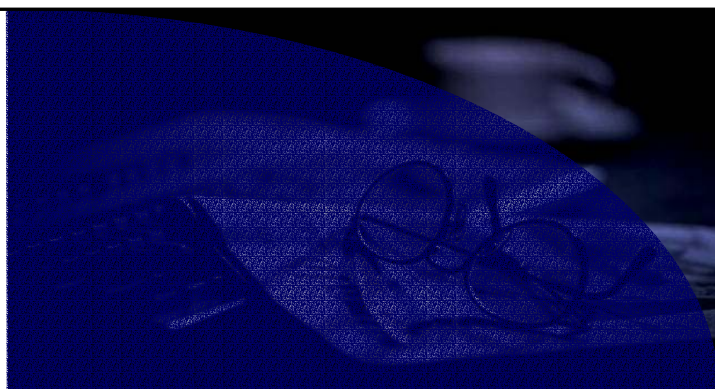


assessment for learning

year 7



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7E Acids and alkalis

Assessment for learning...year 7 (level 3-6)

Answer all questions:

Total marks	26
Time allowed	25 mins.

Question 1:

pH paper is used to show whether a solution is acidic, neutral or alkaline.

One type of pH paper shows the following range of colours.

colour of pH paper	red	orange	yellow	green	blue	purple
pH value	0 - 4	5	6	7	8 - 10	11 - 14

Some solutions were tested with pH Paper. The results are shown below.

(a) Complete the following table by placing a tick in the correct column for each substance.

substance	colour of pH paper	acidic	neutral	alkaline
orange juice	red			
egg white	blue			
oven cleaner	purple			
milk	yellow			

4 marks

(b) Which substance was the most alkaline?

.....

1 mark

(c) Equal amounts of egg white and milk are mixed. What is the most likely pH of the mixture?

Tick the correct box.

pH2 pH6 pH7 pH14

1 mark

Maximum 6 marks

Question 2:

(a) Vinegar is sometimes put on chips. It has a sharp, sour taste. What does the taste tell you about vinegar?

Tick the correct box.

It contains salt.

It contains sugar.

It is an acid.

It has turned bad.

1 mark

(b) Washing soda crystals react with acid to give off carbon dioxide.

If you added some washing soda crystals to vinegar, what would you **see** happening?

.....

1 mark

(c) Red cabbage can be used to test for acids and alkalis. It is bright red in acids and purple in alkalis.

(i) What colour is it in lemon juice?

.....

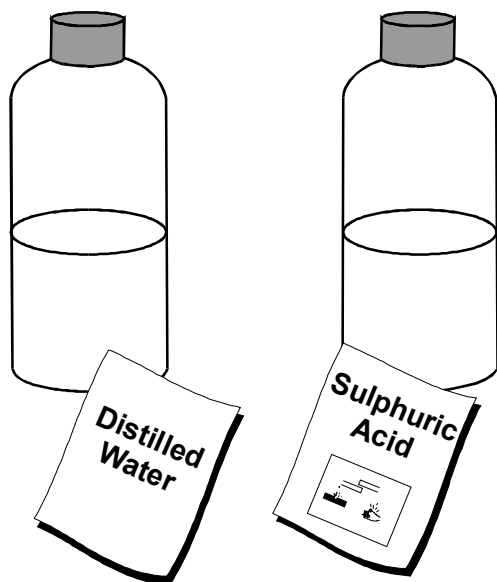
1 mark

(ii) Complete the sentence below.

Substances which change colour when you add acid or alkali are called

1 mark

(d) The labels have fallen off two bottles. The labels say 'Distilled Water' and 'Sulphuric Acid'.



(i) Why should you **not** taste the liquids to see which is which?

.....
.....

1 mark

(ii) You can use some washing soda crystals to find out what is in each bottle. Describe what you would **do** and what you would **see** in each case.

.....
.....
.....
.....

2 marks

Maximum 7 marks

Question 3:

The table below gives information about four gases. It shows the volume of each gas that will dissolve in 1000 cm³ of water at two different temperatures.

gas	volume dissolved in 1000 cm ³ water at 20°	volume dissolved in 1000 cm ³ water at 60°
ammonia	680 000 cm ³	200 000 cm ³
carbon dioxide	850 cm ³	360 cm ³
hydrogen chloride	442 000 cm ³	339 000 cm ³
oxygen	30 cm ³	19 cm ³

Use the information in the table to answer the following questions.

(a) (i) Which **one** of the four gases is the most soluble at 60°C?

.....

1 mark

(ii) Which **one** of the four gases is the least soluble at 20°C?

.....

1 mark

(b) How does a rise in temperature affect the amount of gas which will dissolve?

.....

.....

1 mark

(c) The table below shows the pH of a solution of each of the four gases.

gas	pH of a solution of the gas
ammonia	10
carbon dioxide	6
hydrogen chloride	1
oxygen	7

Which gas dissolves in water to form:

(i) an acid?

1 mark

(ii) an alkali?

1 mark

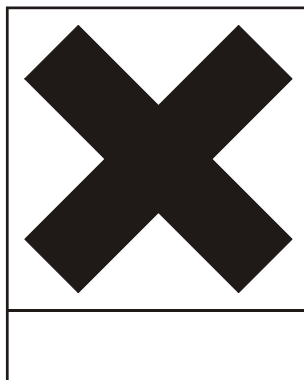
(iii) a neutral solution?

1 mark

Maximum 6 marks

Question 4:

The following warning sign was on a bottle of bleach.



(a) A word is missing from the box on the warning sign. Choose the correct word from the list below and write it in the empty box.

Corrosive flammable irritant poison

1 mark

(b) The following words are written by the side of the warning sign.

WARNING! Do not mix with other products. May release dangerous gases (chlorine).

A teacher shows what happens if the warning is ignored. In a fume cupboard, he pours some bleach into a beaker of acid. It reacts to give off chlorine gas.

(i) What would you see in the liquid when a gas is being formed?

.....
.....

1 mark

(ii) The teacher gets a few drops of bleach on his hand by accident. What should he do?

.....
.....

1 mark

Maximum 3 marks

Question 5:

The table shows the pH of five soil samples.

soil sample	pH of soil
A	6.0
B	7.5
C	7.0
D	4.5
E	8.0

Use letters from the table to answer questions (a), (b) and (c).

(a) Which soil sample is neutral?

1 mark

(b) (i) Most types of heather grow better in acidic soil.
In which of the soil samples should heather grow well?

1 mark

(ii) Cabbage grows better in alkaline soil. In which
of the soil samples should cabbage grow well?

1 mark

(c) Lime is an alkaline substance which is sometimes put onto acidic soils.
What type of reaction takes place between the lime and the acid?

.....

1 mark

Maximum 4 marks