MARK SCHEME

GCSE

CHEMISTRY

AQA - TRIPLE SCIENCE

C8 - TEST 1

CHEMICAL ANALYSIS

Beginner

Mark schemes

1. drinks / colours B **and** C are safe

1

drinks / colours A **and** D are not safe

*accept a pair of one safe colour **and** one not safe colour identified for **1** mark*

*accept A, B, C and D all contain one safe colour for **1** mark*

ignore references to shading

1

[2]

2. (a) F

accept indium / In

1

(b) C

accept sodium / Na

1

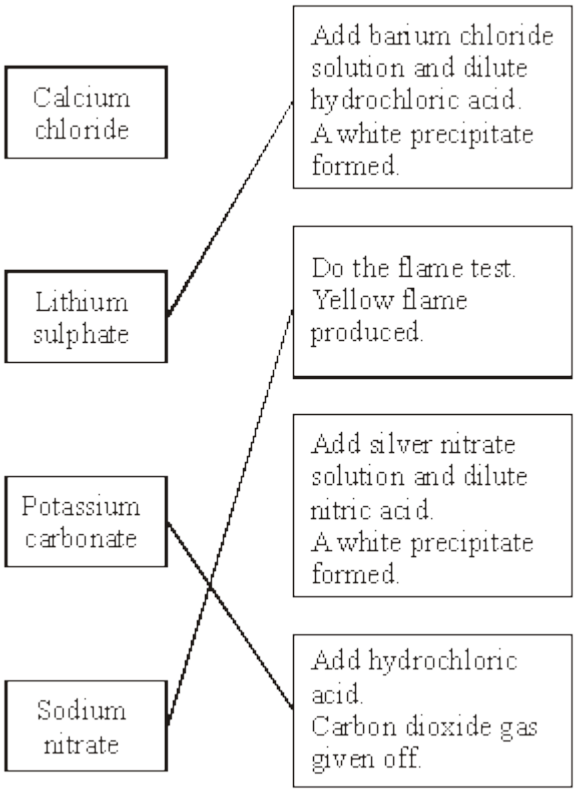
(c) A

accept hydrogen / H / H_2

1

[3]

3. (a)



all three correct = ***2***

one or two correct = ***1***

2

(b) blue

1

precipitate

solid

1

[4]

4. (a) copper sulfate → blue precipitate

1

iron(II) sulfate → green precipitate

1

(b) eg some idea of contamination

allow so you can see the colour change clearly / easily

or

give misleading / incorrect results / lead to wrong conclusion

allow to get accurate / reliable results

ignore fair test

1

(c) white

1

[4]

5.

(a) (i) chromatography

1

(ii) 3 / three

1

(iii) the colour / E104 is not on the same level as any of the colours in the food

accept E104 does not match

1

(b) (i) to improve the appearance of the food

ignore adds yellow / colour

ignore taste / flavour

1

(ii) further / or different tests (for harmful effects) **or** obtain more evidence (that it is harmful)

allow do a survey / study

1

[5]

6.

(i) any **two** from:

- **A** has four colours(*)
- **B** has three colours(*)

(*) if first two bullets not stated
*accept **A** has more colours (than **B**) **or B** has less colours (than **A**) for **1** mark only*

- **A / B** have two colours the same
- **B** has one different colour

2

(ii) chromatography

1

[3]

7.

(a) (i) yellow

1

(ii) lilac

1

(iii) melting point

1

(b) (i) barium chloride

1

solid

1

(ii) white

1

dissolved

1

[7]

8.

(a) (i) so there are no impurities

accept no other chemicals / not contaminated

allow to get the correct result

1

(ii) high melting point

1

unreactive

1

(iii) yellow-orange

1

(b) (i) bubbles / fizz / effervescence

ignore any named gas

1

(ii) milky

1

(c) fast(er)

1

small(er) amount

1

[8]

9.

(a) (i) sodium hydroxide

1

green

1

solid

1

(ii) barium chloride

1

white

1

sulfate ions, SO_4^{2-}

1

(b) some indication of contact between (colourless) flame and the chemical

ignore colour of flame

1

(c) any **one** from:

ignore reference to cost / safer

- accurate
- precise
- sensitive
- reliable
- rapid
- only small amount needed

1

[8]

10. (a) (i) get wrong coloured flame/result owtte

or

to get the correct result

allow contaminated

1

(ii) high melting point

1

unreactive

1

(iii) yellow-orange

1

(b) (i) bubbles / fizz / effervescence

ignore any named gas

1

(ii) milky

1

(c) fast(er)

1

small(er) amount

1

11. (a) crush the flower

1

use more flowers

1

(b) the start line is drawn in ink

1

uses water as the solvent

1

(c) flower A contains a single pure colour

1

the colour in flower C is a mixture

1

(d) $\frac{7.2}{9.0}$

1

= 0.8

1

*an answer of 0.8 scores **2** marks*
ignore units

[8]