AQA Chemistry GCSE

Required Practical 6 - Chromatography

Mark Scheme

Q1

.(a) (i) (phosphoric) acid

allow phosphoric

1

(ii) H^+ / hydrogen (ion)

if ion symbol given, charge must be correct

1

(b) (i) pencil

1

so it will not run / smudge / *dissolve*

ignore pencil will not interfere with / affect the results

or

because ink would run / smudge / *dissolve*

ignore ink will interfere with / affect the results

1

(ii) any **three** from:

*reference to spots / dots = max **2***

allow colouring for colour

- *3* colours in Cola

*allow more colours in cola **or** fewer colours in fruit drink*

- *2* colours in Fruit drink
- one of the colours is the same
- two of the colours in Cola are different
- one of the colours in Fruit drink is different

allow some of the colours in the drinks are different

- *one of the colours in Cola is the most soluble*

accept one of the colours in Cola has the highest R_f value

3

(c) different substances travel at different speeds **or** have different retention times

accept different attraction to solid

ignore properties of compounds

1

Q2.

M2.(a) water level above the start line

and

start line drawn in ink

allow water level too high

1

water level

food colours would dissolve into water

or

start line

the ink would 'run' on the paper

1

(b) (distance moved by **A**) 2.8cm **and** 8.2 cm (distance moved by solvent)

allow values in range 2.7 – 2.9 cm and 8.1 – 8.3 cm

1

$\frac{2.8}{8.2}$

1

0.34

allow 0.33 or 0.35

*allow ecf from incorrect measurement to final answer for **2** marks if given to 2 significant figures*

*accept 0.34 without working shown for **3** marks*

1

(c) 6.6 cm

allow values between 6.48 and 6.64 cm

1

(d) solvent moves through paper

1

different dyes have different solubilities in solvent

1

and different attractions for the paper

1

and so are carried different distances

1

Q3

(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

Q4.

(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]

Q5.

.

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]