

Quick Quiz

Topic	Answers			
	Q1	Q2	Q3	Q4
7Ea	C	B	A	C
7Eb	A	C	D	B
7Ec	B	D	B	C
7Ed	C	B	C	A
7Ee	B	C	C	A

End of Unit Test Mark Scheme

Question	Part	Step	Answer	Mark scheme
1	a	3rd	sieve	1 mark
	b	4th	The holes in the sieve will let everything else through but not the beads.	1 mark
2		4th 4th 6th	symbols for filter funnel, filter paper and flask used symbols correctly labelled symbols drawn correctly using ruler and sharp pencil	3 marks – 1 mark for correct symbols, 1 mark for correct labels, 1 mark for correct drawing
3	a	4th	'until no more solid dissolves in the solution' underlined in Step C	1 mark
	b	4th	the solid disappears	1 mark
	c	4th 4th	Any answer that clearly separates the actions into different steps presented in the correct order. For example: <ul style="list-style-type: none"> • Pour the water into the beaker. • Add a spatula of solid to the beaker. • Stir the water in the beaker until all the solid dissolves. 	2 marks – 1 mark for separating actions into different steps; 1 mark for presenting steps in logical order
	d	5th	Keeping count of spatulas needs to be written in step C when they are being added.	1 mark
4	a	4th	C chromatography	1 mark
	b	5th	dark blue/purple because it would be a mix of the two colours	1 mark for both parts of answer only
	c	5th	B at the centre of the piece of paper	1 mark
	d	6th 6th	colours dissolved in water; which carried them along the paper at different speeds (Accept 'carried by water' for 1 mark.)	2 marks – 1 mark for each correct point made.
	e	5th 6th	It is used to separate out some of the dissolved substances in the drinking water. This is so that their concentration can be analysed to make sure the water is safe for drinking.	2 marks – 1 mark for correct description, 1 mark for correct explanation

Question	Part	Step	Answer	Mark scheme
5	a	2nd	D evaporating basin	1 mark
	b	3rd	the liquid turns into a gas and escapes from the solution into the air;	1 mark
		3rd	the solid cannot evaporate so it is left in the dish	1 mark
	ci	3rd	The apparatus will get hot and could cause a burn if touched. (Accept answers to ci and cii either way round.)	1 mark – answer must include harm that may be caused
	cii	3rd	If solution heated until too dry, it will spit very hot liquid that could burn or scald. (Accept answers to ci and cii either way round.)	1 mark – answer must include harm that may be caused
6	d	4th	One of the following. <ul style="list-style-type: none"> Wear heat-resistant gloves or use tongs to touch apparatus. Evaporate until only a little solution left in the dish, then turn off heating to let rest of liquid evaporate using heat from the dish. Wear eye protection. 	1 mark
	a	4th	A Heat causes the water in the solution to evaporate.	1 mark
	b	4th	Cool water in the condenser reduces the temperature of the water vapour/steam so that it condenses to liquid water.	1 mark
7	a	6th	sodium nitrate, more sodium nitrate dissolves in 100 g water	1 mark – answer must include both correct substance and explanation
	bi	5th	D It will all dissolve. (Accept equivalent answers.)	1 mark
	bii	6th	C Only 30 g will dissolve. (Accept 'it will not all dissolve'.)	1 mark
	biii	6th 6th	The solubility at 20 °C is only 30 g/100 g, so it will form a saturated solution and not all of it will dissolve.	2 marks – 1 mark for each correct point made
	c	6th 6th	All of the potassium nitrate would dissolve because the solubility is greater than 60 g/100 g at this temperature, or because the solubility increases with temperature.	2 marks – 1 mark for correct answer, 1 mark for correct explanation

Final Step Calculation

Marks	Step
1–3	Below 2nd
4–7	2nd
8–12	3rd
13–18	4th
19–23	5th
24–32	6th

Quick Check answers

Topic	Step	Answers
7Ea Lit		Method should be written within all the rules given. For example: <ol style="list-style-type: none"> 1 Measure 5 g table salt using a weighing balance. 2 Pour the salt into a conical flask. 3 Measure 10 g sand using the same balance. 4 Pour the sand into a conical flask. 5 Measure out 50 cm³ of water into a measuring cylinder using the scale to make the measurement. 6 Pour the 50 cm³ of water into the conical flask containing the sand and salt. 7 Swirl the water, sand and salt around in the conical flask until they are well mixed.
7Ea	4th–5th	No answers since it's a loop exercise
7Eb	4th–5th	Any suitable questions that display understanding of the topic of dissolving and solutions. For example: <ol style="list-style-type: none"> 1 What term do we give to a liquid in which soluble substances dissolve? 2 Dirty water is cleaned at water treatment plants to produce what? 3 A young child stirred salt into water and said it disappeared. What had really happened? 4 Copper sulfate crystals were stirred in a beaker of water. What was formed? 5 Which term describes the amount of solute that dissolves in a particular amount of solvent at a particular temperature? 6 Animals that live in water do not breathe oxygen directly from the air. Where do they get their oxygen from? 7 What do we call a solution in which no more solute will dissolve? 8 How can you calculate the mass of a solution before the solute is dissolved in the solvent?
7Ec WS	3rd	Hazards: Any obvious hazards shown in the picture with appropriate guidance on how to reduce risk. For example: Splashes of solution could get into eyes. / Wear eye protection. Burns from hot equipment. / Use tongs. Long hair dangling where it could easily catch light. / Tie hair back out of the way. Solution is spitting. / Turn down flame on Bunsen burner. Solution of solid could contaminate clothing. / Wear lab coats.
7Ec	4th–5th	I1 A4 E6 I4 A3 E2 E7 I3 A1 E1 E3 E9 I2 A2 E5 E8 E4
7Ed	4th–5th	<ol style="list-style-type: none"> 1 solute, solvent 2 liquid → solution, substances → solutes 3 coloured substances → many mixtures of different substances 4 same speed → different speeds 5 <ol style="list-style-type: none"> a two → three (2 cases) b D → C c seven → four
7Ee	4th–5th	<ol style="list-style-type: none"> 1 D 2 B 3 I 4 A 5 F