AQA GCSE Science Combined Foundation

Practice answers

Question	Answers	Extra information	Mark	AO / Specification reference
01.1	exothermic increase endothermic decrease conserved	four marks for all correct three marks for three correct two marks for two correct one mark for one correct	4	AO1 5.5.1.1
01.2	combustion		1	AO1 5.5.1.1
01.3	self-heating can/hand warmer/burning fuels/respiration	accept any reasonable answer	1	AO1 5.5.1.1
02.1	thermometer/data logger/temperature probe		1	AO2 5.5.1.1
02.2	wear goggles/wash hands			AO3 5.5.1.1
02.3	26.5 - 25.0 = 1.5 °C		1 1	AO1 5.5.1.1
02.4	Plot point at (60, 26.2)		1	AO2 5.5.1.1
02.5	exothermic temperature increased/heat energy released		1 1	AO2 AO3 5.5.1.2
03.1	pack B – cold pack A – hot		1	AO2 5.5.1.1

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03.2	35 minutes		1	AO2 5.5.1.1
03.3	pack A		1	AO2 5.5.1.1
03.4	endothermic		1	AO2 5.5.1.1
03.5	**Level 3:** At least one advantage and disadvantage provided of both new temperature pack and hot water bottle. Justified conclusion given on whether club should switch or not.		5-6	AO3 5.5.1.1
	Level 2: Advantages and disadvantages for new packs and hot water bottle provided, but an advantage OR disadvantage missing for one. A conclusion on whether the club should switch given, but justification is simple or not clear.		3-4	
	Level 1: Conclusion given but no justification. Attempt at evaluating the pack against a hot water bottle, but advantages and disadvantages have not been provided for one OR an advantage/disadvantage missing from both.		1-2	
	No relevant content.		0	

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	Indicative content: new pack – advantages • quick (no preparation) • can carry them around with you • instant relief new pack – disadvantages • can only be used once • goes to landfill **or** not recycled • no temperature regulation hot water bottle – advantages • reusable • minimal cost/don't need to buy packs/only cost in electricity of boiling/freezing water how water bottle – disadvantages • takes time to produce • cannot control temperature • needs a supply of hot water			
04.1	endothermic exothermic exothermic endothermic		1 1 1 1	AO1 5.5.1.1

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04.2	it transfers energy to the surroundings		1	AO1 5.5.1.1
04.3	exothermic		1	AO2 5.5.1.1
05.1	insulated container/cup (with lid) reduce energy transfers/heat loss to the surroundings		1 1	AO3 5.5.1.1
05.2	stir to ensure that the solution is the same temperature throughout **or** to make it dissolve faster		1 1	AO3 5.5.1.1
05.3	D		1	AO3 5.5.1.1
05.4	temperature change would be less		1	AO3 5.1.1.1
06.1	temperature change		1	AO2 5.5.1.1
06.2	**two** from: • concentration of acid • volume of acid • mass of metal	one mark for each correct answer up to two marks accept other suitable answers	2	AO2 5.5.1.1
06.3	copper does not react with dilute hydrochloric acid/is unreactive		1	AO2 5.4.1.2

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06.4	magnesium 17.7 zinc 6.1	both values required for the mark	1	AO1 5.5.1.2
06.5	magnesium greatest temperature increase/is the most reactive		1 1	AO2 5.1.1.1
07.1	B and C		1	AO2 5.1.1.2
07.2	B		1	AO2 5.1.1.2
07.3	C		1	AO2 5.1.1.2
08.1	iron oxide		1	AO2 5.1.1.1
08.2	oxidation iron gains oxygen/loses electrons		1 1	AO1 5.4.1.1
08.3	collide activation energy		1 1	
08.4	exothermic		1	
08.5	products below reactants curved line starting at reactants, going up, then coming down to products	allow error carried over from question **08.4**	1 1	
09.1	data logger fewer mistakes will be made in reading data/it takes more readings		1 1	AO3 5.5.1.1

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09.2	$\frac{32.6+32.9+32.5}{3} = \frac{98}{3} = 32.66...$ = 32.7		1 1	AO2 5.5.1.1
09.3	second student allow time for reaction to occur		1 1	AO3 5.5.1.2
09.4	reacting particles at low temperature so most did not have sufficient energy/energy above the activation energy when they collided and so most collisions did not cause a reaction		1 1 1	AO2 5.5.1.2