

Chapter 3 – Chemical reactions

Question	Answers	Extra information	Mark
1(a)	reactants products rearrange substance catalyst		1 1 1 1 1
(b)	burning fuels cement hardening		1 1
2(a)	In a combustion reaction – a substance reacts quickly with oxygen and transfers energy. In a thermal decomposition reaction – a compound that is heated breaks down to make different compounds or elements. In an oxidation reaction – substance reacts with oxygen to form an oxide. In a decomposition reaction – a compound breaks down into different compounds or elements.	2 marks for two correctly matched 1 mark for one correctly matched	3
(b)	the same as cannot		1 1
(c)	B		1
3	to a combustion reaction from evaporation		1 1 1 1
4(a)	carbon + oxygen → carbon dioxide (or carbon monoxide)	1 mark for correct reactants 1 mark for correct product Do not accept carbon oxide	2

Question	Answers	Extra information	Mark
(b)	Independent variable – type of fuel Dependent variable – temperature change One control variable – mass of fuel/mass of water/mass of beaker		1 1 1
(c)i	81		1
(c)ii	40		1
(d)	a bar chart because the independent variable is categoric	Both needed for mark	1
5(a)	2 hydrogen atoms and 1 oxygen atom in water, H ₂ O		1
(b)	sulfur trioxide is SO ₃ 1 : 3		1
(c)i	4 : 10		1
(c)ii	2 : 5		1
(d)	1 oxygen molecule reacts with 2 atoms of magnesium/there is a ratio of 2 : 1 of magnesium atoms to oxygen molecules		1
6(a)	CH ₄ + 2O ₂ → CO ₂ + 2H ₂ O	1 mark for correct formulae 1 mark for correct coefficients (numbers in front of the formulae)	2
(b)	C ₃ H ₈ + 5O ₂ → 3CO ₂ + 4H ₂ O	1 mark for correct formulae 1 mark for correct O ₂ coefficient (number in front of the formula) 1 mark for correct CO ₂ coefficient (number in front of the formula) 1 mark for correct H ₂ O coefficient (number in front of the formula)	4
	SPACED LEARNING QUESTIONS		
7(a)	C		1

KS3 Chemistry

Answers

Question	Answers	Extra information	Mark
(b)	B		1
(c)	E		1
(d)	gas state		1