



Rewarding Learning

**General Certificate of Secondary Education
2010–2011**

Science: Double Award (Modular)

Using Materials and Understanding Reactions
End of Module Test

Foundation Tier

[GDB01]

THURSDAY 24 FEBRUARY 2011, MORNING

**MARK
SCHEME**

			AVAILABLE MARKS
1	(a) Idea that symbols are internationally understood/idea that symbols are eye-catching/idea of warning of danger	[2]	4
	(b) Idea that helium is not flammable	[1]	
	(c) 	[1]	
2	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px;">melting</div> <div style="display: flex; justify-content: center; gap: 20px; margin: 5px 0;"> <div style="border-top: 1px solid black; width: 100%;"></div> <div style="border-top: 1px solid black; width: 100%;"></div> </div> <div style="border: 1px solid black; height: 40px; width: 150px;"></div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px;">evaporation allow boiling</div> <div style="display: flex; justify-content: center; gap: 20px; margin: 5px 0;"> <div style="border-top: 1px solid black; width: 100%;"></div> <div style="border-top: 1px solid black; width: 100%;"></div> </div> <div style="border: 1px solid black; padding: 5px; width: 150px;">condensation</div> </div> </div>	[3]	3
3	(a) Bottles – glass or plastic drinks cans – metal	[1] [1]	4
	(b) Any man-made fibre, e.g. not cotton or wool	[1]	
	(c) Glass	[1]	
4	(a) Fe	[1]	4
	(b) OH ⁻	[1]	
	(c) Carbon	[1]	
	(d) Boron has an atomic number of 5	[1]	
5	(a) stirring using warm water crushing the tablet using more water any three	[3]	4
	(b) solute	[1]	

- 6 (a) Hydrogen is an element because it contains only one type of atom/
cannot be broken down into anything simpler by chemical means [1]
- (b) Water is a compound because it contains two different types
of atoms [1] chemically combined [1] [2]
- (c) Any answer which indicates a mixture
mixture (implied) [1]

AVAILABLE
MARKS

4

7 (a)

Name of particle	Number present in an atom of aluminium
proton	13
electron	13
neutron	14

[3]

- (b) 3 [1]

4

- 8 (a) 4 [1]
- (b) 8 [1]
- (c) 15 [1]

3

- 9 (a) ^{18}O has 10 neutrons [1] ^{16}O has 8 neutrons [1]
allow [1] for idea of different number of neutrons
[1] for fact that one has 2 extra neutrons unless wrongly qualified [2]

- (b) just as reactive as [1]

3

- 10 (a) (i) CuSO_4 [1] H_2O [1] [2]
- (ii) green [1] \longrightarrow blue [1] [2]
- (b) CO_2 /carbon dioxide [1]

5

Water sample	Observation with soap	Observation with detergent
A temporary hard		Lather
B soft	Lather	
C permanent hard	No lather	Lather

4 correct = [2] 2 or 3 correct = [1] 1 correct = [0] [2]

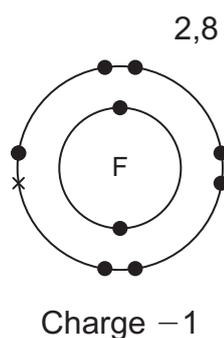
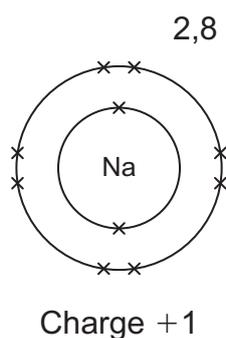
(b) water which has hardness which can be removed by boiling [1]

(c) good for teeth or bones/reduces risk of heart disease/tanning leather/brewing beer/idea of better taste [1]

scale in pipes or boilers/scum with soap/wastes soap/cost/allow idea of blocked pipes [1]

5

12 (a) correct ion structure [2]



[1]

(b) electrostatic [1]

4

13 (a) electrode connected to the negative terminal/negative electrode [1]

(b) carbon/graphite [1]

(c) oxygen [1]

3

Total**50**