

2.0.0 SIMPLE CLASSIFICATION OF SUBSTANCES ANS

For Examiners use only.

Question	Maximum Score	Candidates Score
1 - 10	57	

1.

- (a) (i) 100 *accept answers from 98 to 100* 1 (L5)
- (ii) to condense the water vapour *accept 'to change the gas into liquid' or 'condensation' or 'condenser'* 1 (L5)
accept 'to cool the vapour into water'
do not accept 'to cool the vapour or water'
- (iii) distillation or distilling 1 (L5)
- (b) (i) evaporating or boiling 1 (L6)
 melting 1 (L6)
 freezing 1 (L6)
 condensing 1 (L6)
- (ii) A *accept 'boiling'* 1 (L6)
 D *accept 'condensing'* 1 (L6)
accept the letters written in the correct places on the diagram

[9]

2.

- (a) does not dissolve in solvent / interfere with results owtte (1) [1]
 (b) 1 and 3 (1) [1]
 (c) sample 4 (1)
 two spots present (1) [2]
 (d) to show position of the acids / spots (1) [1]

[Total: 5]

- 3.
- (a) Ice warms up. Temperature rises from -10 to 0°C . No change of state [1m]
 - (b) Temperature stays constant [1m]. Change of state occurs. Ice changes to liquid [1m] water.
 - (c) Water warms up. Temperature changes from 0°C to 100°C [1m]
 - (d) Temperature remains constant [1m]. Change of state occurs. Boils to steam at 100°C [1m]

[Total 6m]

4.
Ans

(a)	Safety precaution liquid might overflow & ignitor vapour might ignite ANY TWO VALID COMMENTS	1 + 1	2
(b) (i)	cooling	1	
	solidifying	1	
	exothermic	1	
(ii)	37°C	1	
(iii)	single melting temperature	1	
(iv)	room temperature	1	6

Total 8

- 5.
- (a) (i) *magnesium* + oxygen ® magnesium oxide 2
do not accept formulae
 - (ii) any one from 1
do not accept 'air' for oxygen
 - the oxygen had mass
 - oxygen was added to the magnesium
accept 'magnesium has gained an element'
 - the magnesium has reacted with oxygen
accept 'magnesium is now part of a compound'
 - (b) oxygen 1
accept 'O2'
 - (c) zinc oxide 1
accept 'ZnO'

(d)

	chemical change	physical change
A	✓	
B	✓	
C		✓

1

all three ticks are required for the mark

[6]

6.

(a) Increase the potential energy of the molecules

OR do work in separating the molecules 1

against intermolecular forces/bonds 1 (2)

(b) Molecules are moving around randomly 1

spread in all directions 1 (2)

[Total 4]

7.

(a) (i) iron *do not accept '1540°C'* 1

(ii) mercury *do not accept '-37°C'* 1

(b) solid to a liquid *answers must be in the correct order* 1
both answers are required for the mark

(c) 5 1

(d) (i) sodium 1

(ii) gold 1

[6]

8.

64

30^{E+2} wrong/ correct charge (- $\frac{1}{2}$)

9.

(a) (i) C 1

(ii) D 1

(iii) A and B *answers may be in either order* 1
both answers are required for the mark

(iv) A and D *answers may be in either order* 1
both answers are required for the mark

(v) C 1

(b) (i) the same *accept 'seven'* 1

- (ii) a random, mixed arrangement of both types of molecule should be drawn with the molecules not touching each other

1

[7]

10.

- (a) Q
- (b) P or Q
- (c) T
- (d) R
- (e) Q

[Total 5m]