

4NA 2018 Prelim

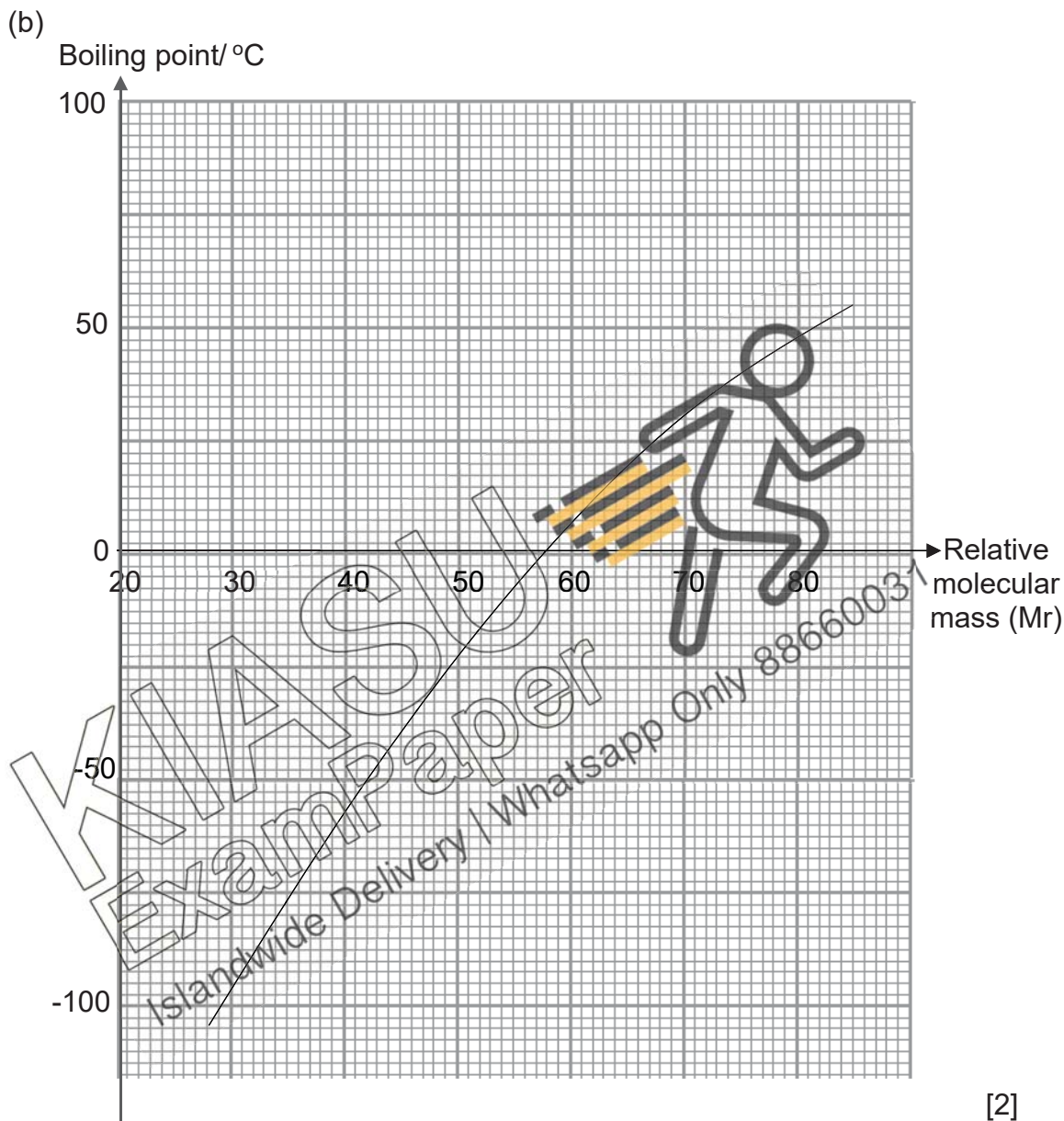
1	C	6	B	11	A	16	C
2	C	7	B	12	C	17	D
3	D	8	C	13	D	18	A
4	C	9	A	14	D	19	B
5	D	10	A	15	D	20	C

SECTION A [14 marks]

- A1** (a) Mixture. It has more than one component on the chromatography paper. [1]
- (b) If the start line is below the water level, all the dyes will dissolve and there will be no results. [1]
- A2** (a) 6.0 ; 5.3 ; 5.5 ; 5.0 [1]
- (b) Water and oxygen [1]
- (c) Greasing, oiling, coating with plastic, galvanizing [1]
Any one answer
- A3** (i) There are many carbon carbon double bonds present in $C_{12}H_{14}$. [1]
- (ii) 6 ; $C_{12}H_{26}$ [2]
1 mark for each
- Describe a simple test to show that there is no longer any unsaturated $C_{12}H_{14}$ in the final product.
- (iii) Test: add aqueous bromine [1]
Observation: solution turns from colourless to brown
- A4** (a) (i) Hydrogen: 1 Helium: 2 [1]
- (ii) Helium is more stable as it has a full valence shell but hydrogen does not. [1]
- (b) (i) Tube A
- (ii) Solution turns from colourless to brown.
- (iii) $Cl_2 + NaBr \rightarrow NaCl + Br_2$

SECTION B [16 marks]

- B5 (a) C_nH_{2n} ; C_6H_{12} [1]
Both must be correct



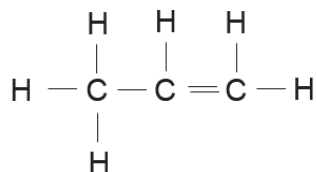
- (iii) The higher the relative molecular mass, the higher the boiling point of alkene [1]

- (iv) Mr of ethane = $2(12) + 6(1)$
= 30 [1]

Boiling point of ethane will be higher than ethene as its Mr is higher. [1]

- (c) (i) 600°C and aluminium oxide catalyst [1]

(ii)



[1]

B7 (a) (i) X: hot air

Y: slag

[1]

(ii) To remove acidic impurities

[1]

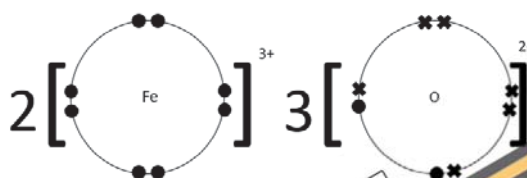
(iii) 1 ; 3 ; 2 ; 3

[1]

(b) Sodium, potassium, calcium, magnesium

[1]

(c) (i)



[1] for correctly drawn ions

[1] for correct ratio

(ii) The melting point will be high.

Strong electrostatic forces of attraction present between oppositely charged ions. A lot of heat needed to overcome these forces.

[1]

B6 (a) (i) Titration

[1]

(ii) $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

[1]

(iii) Any sodium, potassium or ammonium salt.

[1]

(b) (i) 3.7 ml

[1]

(ii) Blue

[1]

(c) (i) s ; g ; s

[1]

(ii) Mr of NaCl = 23 + 35.5
=58.5Moles of NaCl = 146.25/58.5
=2.5 moles

[1]

Moles of Cl₂ = 1.25 molesMass of Cl₂ = 1.25 moles x 2(35.5)
=88.75g

[1]