

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

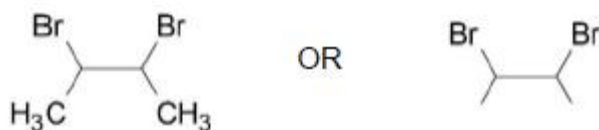
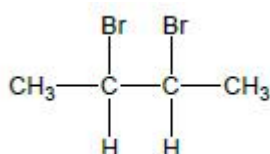
Q1.

- (a) 2,3-dimethylbutane(-1,4-)dioic acid

*Penalise other numbers.**Ignore hyphens, commas, spaces.*

1

- (b)

*Allow displayed formula*

1

Step 1:

HBr

1

Electrophilic addition

1

Step 2:

KCN

Not HCN, not KCN with acid.

1

Nucleophilic substitution

1

Step 3:

Hydrolysis

1

- (c)

	Mark
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OR

Expected mass of **F** = $9.78 \times (M_r =)$

$$146 = 1428 \text{ g}$$

1

$$\% \text{ yield} = \frac{6.37}{9.78} \times 100 = 65.1(\%)$$

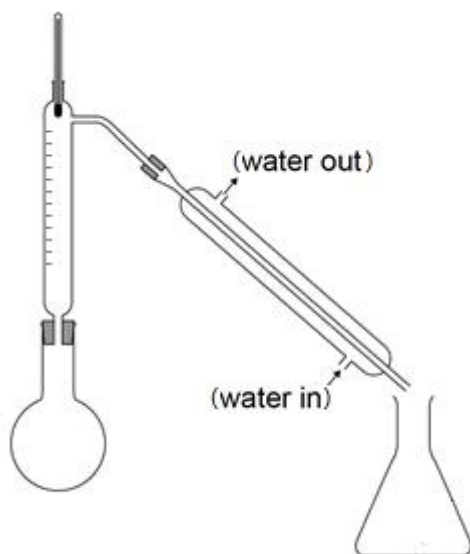
OR

$$\% \text{ yield} = \frac{930}{1428} \times 100 = 65.1(\%)$$

M4 answer must be to 3 significant figures.

1

(f) Fractional distillation



A rough labelled sketch illustrating these points scores the marks.

1

Apparatus for fractional distillation must clearly work with fractionating column.

1

Fractionating column and thermometer.

1

Condenser / water jacket.

Ignore heat source.

1

[20]