Oxford Cambridge and RSA

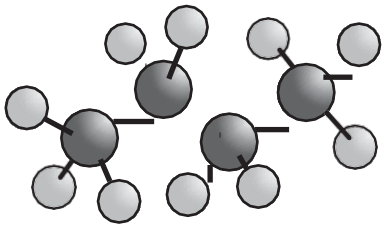
GCSE Chemistry B (Twenty First Century Science)

J258/03 Breadth in chemistry (Higher Tier)

Question Set 15

1 ‘Camping gas’ contains butane.

This is a ‘ball and stick’ model of a butane molecule:



(a) **(i)** Butane is a hydrocarbon.

Draw a ‘dot and cross’ diagram for a butane molecule.

[1]

(ii) Chemists use ‘ball and stick’ models and ‘dot and cross’ diagrams.

Give **one** advantage of using each model.

[2]

(b) The molecular formula of butane is C_4H_{10}.

Calculate the percentage of carbon by mass in butane.

Give your answer to **2** significant figures.

Percentage of carbon = ... % **[3]**

(c) Propane is another hydrocarbon.

Butane, C_4H_{10}, boils at 0 °C.

Propane, C_3H_8, boils at −42 °C.

Explain this difference in boiling point.

Use ideas about intermolecular forces in your answer.

[2]

Total Marks for Question Set 15: 8

Resource Materials

The Periodic Table of the Elements