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90648



NEW ZEALAND QUALIFICATIONS AUTHORITY
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For Supervisor's use only

Level 1 Chemistry, 2008

90648 Describe properties and reactions of carbon and its compounds

Credits: Three

9.30 am Friday 28 November 2008

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–7 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

| <i>For Assessor's use only</i> | Achievement Criteria | |
|---|---|--|
| Achievement | Achievement with Merit | Achievement with Excellence |
| Describe properties and reactions of carbon and its compounds. <input type="checkbox"/> | Link properties and reactions of carbon and its compounds. <input type="checkbox"/> | Apply an understanding of properties and reactions of carbon and its compounds. <input type="checkbox"/> |
| Overall Level of Performance | | <input type="checkbox"/> |

You are advised to spend 30 minutes answering the questions in this booklet.

QUESTION ONE: ORGANIC COMPOUNDS

- (a) Complete the following table by naming or drawing the structural formulae of the compounds as required.

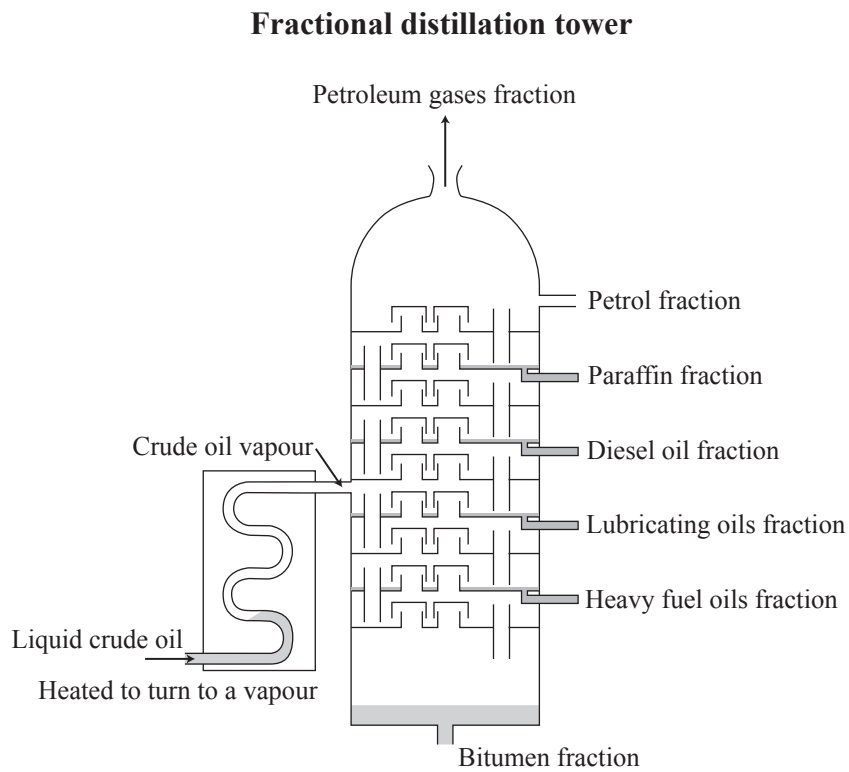
| Structure | Name |
|--|--------|
| (i) | hexane |
| (ii) | ethene |
| $ \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{O}-\text{H} \\ \quad \\ \text{H} \quad \text{H} \end{array} $ | (iii) |
| $ \begin{array}{c} \text{H} \quad \quad \text{O} \\ \quad \quad // \\ \text{H}-\text{C}-\text{C} \\ \quad \quad \backslash \\ \text{H} \quad \quad \text{O}-\text{H} \end{array} $ | (iv) |

- (b) Name the process that uses glucose to produce the compound in (iii) above.

- (c) Identify the compound(s) above that would be soluble in water.

QUESTION FOUR: FRACTIONAL DISTILLATION

The following diagram illustrates the process of fractional distillation.



Discuss how crude oil can be separated into its components using fractional distillation.

In your answer, outline what crude oil is and refer to the physical properties of hydrocarbons.
