**Year 11 ATAR Chemistry**

Practical Assessment – Validation Test

Fossil Fuels and Biofuels

NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TEACHER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ MARKS: \_\_\_\_\_ /30

**Answer each question in the space provided.**

1. What is a biofuel? Provide an example. (2 marks)

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1. What is a fossil fuel? Provide an example. (2 marks)

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1. Outline the composition for the following four fuels:

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| --- | --- |
| Fuel type: | Composition: |
| Petroleum |  |
| Liquefied petroleum gas (LPG) |  |
| Bioethanol |  |
| Biodiesel |  |

(4 marks)

1. What physical property is used to separate the components of crude oil by fractional distillation?

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(1 mark)

1. Explain how the process of fractional distillation is used to take crude oil mined from the ground and produce substances like liquefied petroleum gas, kerosene and petroleum.

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(4 marks)

1. How is biofuel produced?

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(3 marks)

1. Enter values into the following table:

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| --- | --- | --- |
| Type of fuel | Energy output value (please include units) | CO2 output value (please include units) |
| Petroleum |  |  |
| Bioethanol |  |  |

(4 marks)

1. What is a) an advantage and b) a disadvantage of using fossil fuels?

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| --- |
| a) |
|  |
| b) |
|  |

(2 marks)

1. What is a) an advantage and b) a disadvantage of using biofuels?

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| --- |
| a) |
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|  |
| b) |
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(2 marks)

1. Explain why the energy output and carbon dioxide output values quoted in scientific research are not completely indicative of what exists in real life application?

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(2 marks)

1. Write a **balanced** chemical equation describing the combustion of pentane.

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(2 marks)

1. Write a **balanced** equation describing the combustion of ethanol.

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(2 marks)

End of Validation Test