

RoshChem

Carbon based fuels

Part 1 Questions

Chemistry

Units 3&4

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1. Give balanced chemical equations for the complete combustion of the following fuels.

a. methane

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b. carbon

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c. octane

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d. ethanol

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2. Give a balanced chemical equation for the incomplete combustion of ethanol to produce carbon monoxide and water.

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3. Methane gas can be captured from the decay of waste in landfills. Methane is also a primary component of natural gas. Compare the environmental impact of methane obtained from biogas to the environmental impact of methane obtained from natural gas.

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4. Explain why fossil fuels are non-renewable.

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5. Which biofuel would be produced from the following sources, and how is each of the fuels produced most likely to be used?

a. Animal waste

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b. Waste oil

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c. Sugar cane

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6. Explain the difference between renewable and non-renewable fuels, giving examples.

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7. Even though biodiesel can be produced from renewable resources such as canola crops, there are still concerns with the production and use of biodiesel. Discuss what these concerns might be.

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8. Give two advantages and disadvantages of the use of bioethanol as a fuel.

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9. Explain why it is easier to produce bioethanol from molasses in sugarcane than from forest waste.

10. During the production of bioethanol, the ethanol solution produced by fermentation is distilled. However, distillation is not required in the production of biodiesel and biogas. Explain.

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