Chemistry 115 Name

Dr. Cary Willard

Quiz 6a (20 points) October 21, 2010

All work must be shown to receive credit. NA = 6.022 x 1023/mol

Pentane gas, C5H12, reacts with oxygen gas to produce water and carbon dioxide according to the following reaction:

C5H12(g) + 8 O2(g) 🡪 5 CO2(g) + 6 H2O(g) + 3535 kJ

1. (4 points) Is this an endothermic or exothermic reaction?
2. (4 points) How many moles of carbon dioxide will be formed from the reaction of 52.3 moles of pentane?
3. (4 points) How many molecules of O2 are required to form 625 molecules of carbon dioxide?
4. (4 points) How many moles of carbon dioxide are produced when a sample of pentane is burned to form 30.5 grams of water?
5. (4 points) How much energy is produced when 32.5 grams of pentane are burned?

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Quiz 6b (20 points) October 21, 2010

All work must be shown to receive credit. NA = 6.022 x 1023/mol

Pentane gas, C5H12, reacts with oxygen gas to produce water and carbon dioxide according to the following reaction:

C5H12(g) + 8 O2(g) 🡪 5 CO2(g) + 6 H2O(g) + 3535 kJ

1. (4 points) Is this an endothermic or exothermic reaction?
2. (4 points) How many moles of carbon dioxide will be formed from the reaction of 64.7 moles of pentane?
3. (4 points) How many molecules of O2 are required to form 475 molecules of carbon dioxide?
4. (4 points) How many moles of carbon dioxide are produced when a sample of pentane is burned to form 41.8 grams of water?
5. (4 points) How much energy is produced when 83.4 grams of pentane are burned?

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Quiz 6c (20 points) October 26, 2010

All work must be shown to receive credit. NA = 6.022 x 1023/mol

Acetylene, C2H2, reacts with oxygen gas to produce water and carbon dioxide according to the following reaction:

2 C2H2(g) + 5 O2(g) 🡪 4 CO2(g) + 2 H2O(g) + 1605 kJ

1. (4 points) Is this an endothermic or exothermic reaction?
2. (4 points) How many moles of acetylene are required to form 4.85 moles of carbon dioxide?
3. (4 points) How many molecules of oxygen gas are required to react with 428 molecules of acetylene?
4. (4 points) How many grams of water will be produced when 73.2 moles of oxygen react with excess acetylene?
5. (4 points) How much energy is produced when 31.2 grams of acetylene are burned?

Chemistry 115 Name

Dr. Cary Willard

Quiz 6d (20 points) October 26, 2010

All work must be shown to receive credit. NA = 6.022 x 1023/mol

Acetylene, C2H2, reacts with oxygen gas to produce water and carbon dioxide according to the following reaction:

2 C2H2(g) + 5 O2(g) 🡪 4 CO2(g) + 2 H2O(g) + 1605 kJ

1. (4 points) Is this an endothermic or exothermic reaction?
2. (4 points) How many moles of acetylene are required to form 6.41 moles of carbon dioxide?
3. (4 points) How many molecules of oxygen gas are required to react with 846 molecules of acetylene?
4. (4 points) How many grams of water will be produced when 35.4 moles of oxygen react with excess acetylene?
5. (4 points) How much energy is produced when 9.35 grams of acetylene are burned?