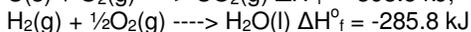
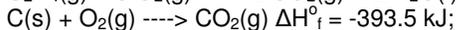
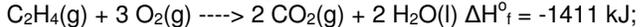


Question 8

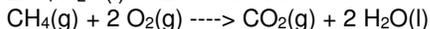
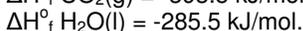
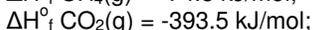
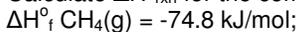
Find the standard enthalpy of formation of ethylene, $C_2H_4(g)$, given the following data:



- A) 731 kJ
- B) 2.77×10^3 kJ
- C) 1.41×10^3 kJ
- D) 87 kJ
- E) 52 kJ

Question 9

Calculate ΔH_{rxn}° for the combustion reaction of CH_4 shown below given the following:



- A) -604.2 kJ
- B) 889.7 kJ
- C) -997.7 kJ
- D) -889.7 kJ
- E) None of the above

Question 10

A 1.300 g sample of benzoic acid ($C_7H_6O_2$) was burned in a bomb calorimeter. The heat capacity of the entire apparatus, including the bomb, pail, thermometer, and water, was found to be 11,145 J/K. As a result of the reaction, the temperature of the calorimeter and water increased 4.627 K. What is the molar heat of combustion of benzoic acid?

- A) 4.84×10^6 kJ/mol
- B) -2.96 kJ/mol
- C) -4844 kJ/mol
- D) 549.1 kJ/mol
- E) 51.57 kJ/mol

Question 11

Which of the following is incorrectly matched?

- A) Radiant energy; solar energy able to influence global climate patterns
- B) Thermal energy; related to temperature irrespective of the volume
- C) Energy; capacity to do work
- D) Chemical energy; potential energy

Question 12

Energy is the ability to do work and can be:

- A) converted to one form to another
- B) can be created and destroyed
- C) used within a system without consequences
- D) none of the above

Question 13

Standard enthalpy of reactions can be calculated from standard enthalpies of formation of reactants.

- A) True
- B) False

Question 14

In the equation ΔE is equal to $q+w$, which sign is correctly associated?

- A) q ; - exothermic
- B) q ; + endothermic
- C) w ; + by system on surrounding
- D) w ; + on system by surroundings