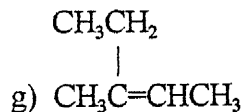
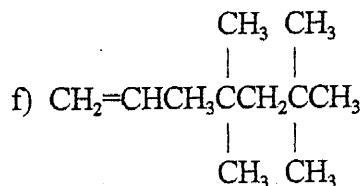
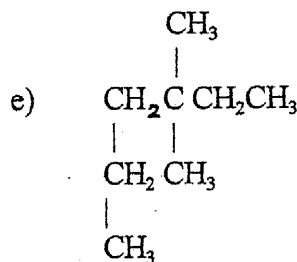
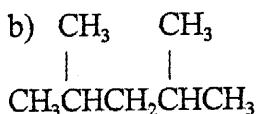
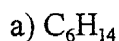


- Define a homologous series.
- What is the trend in boiling point in a homologous series?
- What determines whether combustion will be complete or incomplete?
- What is an isomer? Draw 3 structural isomers for C_3H_8O .
- Draw a compound containing the following functional group:

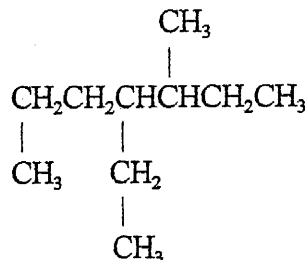
- alkene
- alcohol
- aldehyde

- ketone
- carboxylic acid
- amine

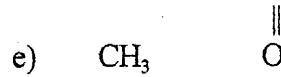
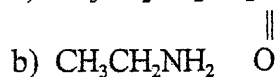
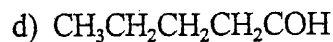
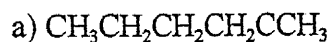
- What is a functional group?
- Name the following organic compounds:



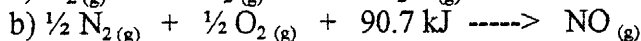
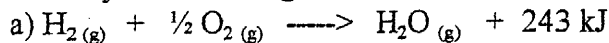
h)



- What family do the following organic compounds belong to:



9. Classify the following reactions as endothermic or exothermic:

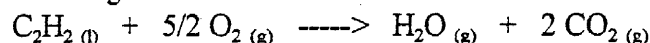


10.

Table of Bond Energies

<u>Bond</u>	<u>Energy (kJ/mol)</u>	<u>Bond</u>	<u>Energy (kJ/mol)</u>
H-H	435	C-H	414
C-C	347	C-O	360
C=C	610	C=O	740
C≡C	836	N≡N	940
O-O	146	N-N	163
O=O	497	N-H	389
O-H	464	H-I	297

Use the table of bond energies to calculate the heat released for:



11. Consider two metals A and B, each of mass 100 g and both at an initial temperature of 20 °C. A has a larger specific heat than B. Under the same heating conditions, which metal would take longer to reach a temperature of 25 °C? Explain.
12. A piece of copper metal of mass 6.22 kg is heated from 20.5 °C to 324.3 °C. Calculate the heat absorbed in kilojoules by the metal. (Use Table 14.2 Specific Heat, p 595)
13. Calculate the amount of heat liberated in kilojoules from 366 g of iron when it cools from 77 °C to 12 °C. (Use Table 14.2 Specific Heat, p 595)
14. In an experiment, 1.50 g of NaOH was reacted with 100.0 mL of 1.0 mol/L HCl in a simple calorimeter. The temperature of the solution increased by 6.8 °C. Assume the specific heat of the solutions to be 4.18 J/g °C and the density of the solutions to be 1.0 g/mL. What is the heat of reaction per gram of NaOH?
15. A 0.1375 g sample of solid magnesium is burned in a bomb calorimeter that has a heat capacity of 1769 J/°C. The calorimeter contains exactly 300 g of water, and the temperature increases by 1.126 °C. Calculate the heat given off by the burning Mg in kilojoules per gram.
16. When 648 g of cetyl palmitate, $\text{C}_{32}\text{H}_{64}\text{O}_2$, a fruit wax, was burned in a bomb calorimeter, the temperature rose from 24.518 °C to 26.746 °C. The heat capacity of the calorimeter was 11.99 kJ/°C. Calculate the energy change for this reaction in kJ per gram of $\text{C}_{32}\text{H}_{64}\text{O}_2$.