Exo/Endo problems

1) Classify as endothermic or exothermic
   a) $H_2O_{(l)} \rightarrow H_2O_{(s)}$ + heat

   b) A fire

   c) A pack which makes your hand cold

   d) Water evaporating from your skin

2) Give an oxidation example occurring in a banana.
3) Give an oxidation example not involving oxygen.

4) Do all of page 86

Solutions

1) Classify as endothermic or exothermic

a)$H_2O_{(l)} \rightarrow H_2O_{(s)}$ + heat

exothermic(heat is o n the right hand side)

b) A fire

Exothermic(it releases heat)

c) A pack which makes your hand cold

Endothermic(it steals heat from your hand, making it cold)

d) Water evaporating from your skin
Endothermic(it steals heat from your skin, making it cold)

2) Give an oxidation example occurring in a banana.

Browning

3) Give an oxidation example not involving oxygen.
Chlorination; bleaching of hair with hydrogen peroxide; reaction of lithium with fluorine(lithium loses an electron to fluorine)

4) Do all of page 86

Ex 1 p 86

3.0 g $C_2H_6O\left(\frac{mole}{46\ g}\right)$ = 0.06521... moles of C_2H_6O

0.06521... moles of $C_2H_6O\left(\frac{1367\ kJ}{1\ mole\ of\ C2H6O}\right)$ = 89 kJ (2 SF)

Ex 2

a) M = CV = 0.10mol/L (0.20 L) = 0.020 moles NaOH
0.020 moles $NaOH\left(\frac{54\ kJ}{2\ moles\ of\ NaOH}\right)$ = 0.54 kJ (2 SF)

b) 2.45 kJ$\left(\frac{2\ moles\ of\ NaOH}{54\ kJ}\right)$ =0.0907407 ...moles of NaOH

$C = \frac{n}{V} = \frac{0.090740}{0.200\ L} = 4.5\ M$ (2 SF)

More endo /exo practice

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13. a) endothermic
b) endothermic
c) exothermic
d) exothermic
e) endothermic
f) exothermic