

Chapter 13

13.1. Intensive are independent of quantity while extensive depends on amount.

Intensive: a, b, e, f, g

extensive: c, d,

13.5. function of state determined by current equilibrium

function path varies w/ history

state functions: a, b, f function of path: c, d, e

13.10 (a) Atlantic ocean @ 33°C

(b) 1 mol H_2O at 100°C

(c) 1 g at 10°C

(d) Entire universe at 5K

13.11 (a) from the swimming pool to the ocean

(b) from water @ 100°C to water @ 0°C

(c) No heat passes

(d) from water to the universe

13.12 (a) Water vapor @ 100°C has a higher enthalpy than

liquid water @ 100°C. The difference is the enthalpy of vaporization.

(b) Intermolecular bonds

13.26 The substance with the greatest number and variety of internal modes of motion should have the highest heat capacity.

(a) C_3H_8

(b) CH_4

(c) Cl_2

(d) DNA

(e) NH_3