11.1-11.3

CHE 112 - Homework - Ch 11a
Solvation Process + Electrolytes

Score: _____/55

Name: _____ Date: _____

[3 pt] 1. Define the terms below:

(a) Solution:

(b) Solvent:

(c) Solute:

[2 pt] 2. What is the difference between Homogeneous and Heterogeneous solutions?

[3 pt] 3. What are (2) differences between Solutions and Colloids? What is (1) thing they share in common? Explain.

[10 pt] 4. Briefly (using sentences) define each of the 4 Intermolecular Forces (IMF) discussed in Chapter 10 and Ionic Bonds. For each, sketch a picture illustrating the attraction between **TWO** molecules (not used in lecture or the book).

(a) London Dispersion Forces (LDF)

(b) Dipole-Dipole (DD)

(c) Hydrogen Bonding (HB)

(d) Ion-Dipole (ID)

(e) Ionic (I)

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[3 pt] 5. What are the 3 main interactions that determine the solubility of a solid in a liquid? What is the sign of ΔH for each? Explain.

[2 pt] 6. Why is ΔS generally positive for the process of dissolving solids in liquids?

[5 pt] 7. Sketch a picture showing the how $MgBr_2$ would dissolve in H_2O. Label all attractive forces present.

[5 pt] 8. Sketch a picture showing the how CH_2O would dissolve in H_2O. Label all attractive forces present.

[2 pt] 9. Br_2 is much more soluble in tetrachloromethane (CCl_4) than in water. Explain.

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[3 pt] 10. What is the main difference(s) between strong electrolytes, weak electrolytes, and a nonelectrolytes?

[6 pt] 11. Which classes of compounds generally form strong electrolytes, weak electrolytes, and a nonelectrolytes? Give an example of each

[2 pt] 12. List 6 strong Acids (Formula and Name).

[2 pt] 13. List 6 strong Bases (Formula and Name).

[2 pt] 14. List 4 weak acids given in class (Formula and Name).

[5 pt] 15. Classify each of the following compounds as either a (S)trong electrolyte, (W)eak electrolyte or (N)onelectrolyte.

15(a) $HClO_4$ 15(a) _____

15(b) $HC_2H_3O_2$ 15(b) _____

15(c) $NaNO_3$ 15(c) _____

15(d) $C_6H_{12}O_6$ 15(d) _____

15(e) KCl 15(e) _____