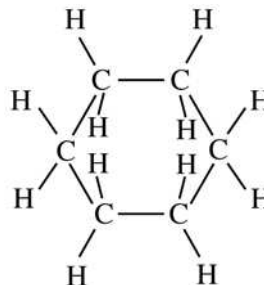
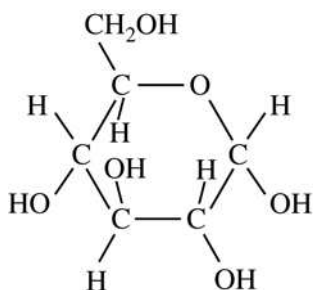


2006 AP[®] CHEMISTRY FREE-RESPONSE QUESTIONS

6. Answer each of the following in terms of principles of molecular behavior and chemical concepts.

(a) The structures for glucose, $C_6H_{12}O_6$, and cyclohexane, C_6H_{12} , are shown below.

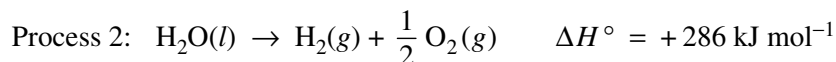


Identify the type(s) of intermolecular attractive forces in

- (i) pure glucose
- (ii) pure cyclohexane

(b) Glucose is soluble in water but cyclohexane is not soluble in water. Explain.

(c) Consider the two processes represented below.



- (i) For each of the two processes, identify the type(s) of intermolecular or intramolecular attractive forces that must be overcome for the process to occur.
- (ii) Indicate whether you agree or disagree with the statement in the box below. Support your answer with a short explanation.

When water boils, H_2O molecules break apart to form hydrogen molecules and oxygen molecules.