

- Which substance involves no bonding forces except London dispersion forces?
A) $\text{NaCl}(l)$ B) $\text{HF}(l)$ C) $\text{N}_2(l)$ D) $\text{H}_2\text{O}(l)$ E) $\text{K}(s)$
- Neon is able to be liquefied at cold temperatures due to which intermolecular force?
A) dipole-dipole B) hydrogen bonding C) covalent bonding
D) dispersion E) ionic bonding
- Which of the following pure substances has the highest normal boiling point?
A) HF B) HCl C) HBr D) HI E) H_2S
- Rank the following molecules in order of increasing normal boiling point: $\text{CH}_3\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OCH}_3$.
A) lowest $\text{CH}_3\text{CH}_2\text{OCH}_3$, $\text{CH}_3\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ highest.
B) lowest $\text{CH}_3\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OCH}_3$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ highest.
C) lowest $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OCH}_3$, $\text{CH}_3\text{CH}_2\text{OH}$ highest.
D) lowest $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OCH}_3$ highest.
E) lowest $\text{CH}_3\text{CH}_2\text{OCH}_3$, $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$, $\text{CH}_3\text{CH}_2\text{OH}$ highest.
- When a water molecule forms a hydrogen bond with another water molecule, which atoms are involved in the interaction?
A) A hydrogen from one molecule and a hydrogen from the other molecule.
B) A hydrogen from one molecule and an oxygen from the other molecule.
C) An oxygen from one molecule and an oxygen from the other molecule.
D) Two hydrogens from one molecule and one oxygen from the other molecule.
E) Two hydrogens from one molecule and one hydrogen from the other molecule.
- The strongest intermolecular forces present in a sample of pure I_2 are
A) metallic bonds. B) dipole-dipole forces. C) covalent bonds.
D) London forces. E) covalent network bonds.
- Which substance can be described as cations bonded together by mobile electrons?
A) $\text{Ag}(s)$ B) $\text{S}_8(s)$ C) $\text{Kr}(l)$ D) $\text{KCl}(s)$ E) $\text{HCl}(l)$
- Which of the following pure substances has the lowest melting point?
A) NaF B) NaCl C) NaBr D) NaI E) Na_2O