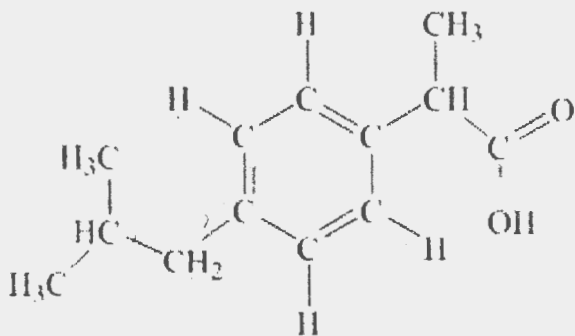


1. Ibuprofen is used as an analgesic for the relief of pain, and also to help reduce fever.



ibuprofen

σ 32
 π 4

How many sigma bonds and pi bonds are contained in an ibuprofen molecule?

2. (3 Pts) Which is expected to have a higher vapor pressure, C_8H_{18} or C_4H_{10} ?

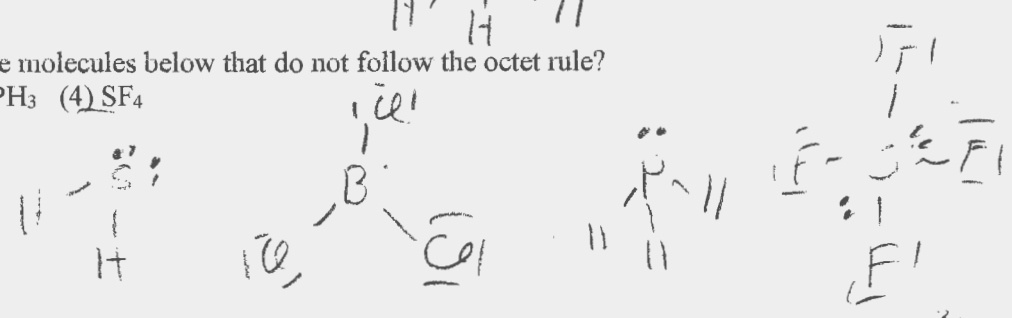
3. Write the Lewis structure of ammonia (nitrogen trihydride).



4. Which response includes all the molecules below that do not follow the octet rule?

- (1) H_2S (2) BCl_3 (3) PH_3 (4) SF_4

- A) (2) and (4)
 B) (2) and (3)
 C) (1) and (2)
 D) (3) and (4)
 E) (1) and (4)



5. Which one of the following substances should exhibit hydrogen bonding in the liquid state?

- A) SiH_4
 B) H_2
 C) H_2S
 D) CH_4
 E) CH_3NH_2

6. Which of following can form hydrogen bonds with water molecules?

- (1) Na^+ (2) CH_3COOH (3) C_2H_6 (4) CH_3NH_2

- A) (1) and (2)
 B) (1) and (3)
 C) (2) and (3)
 D) (2) and (4)
 E) (3) and (4)

7. (2 Pts) What type of bonding is present in the compound $Al(ClO_3)_3$ (ionic, covalent, or both)?

both