

Atomic Structure

1.

Types of hybridization exhibited by the C atoms in propene, CH_3CHCH_2 , include which of the following?

- I. sp
- II. sp^2
- III. sp^3

- A) I only
- B) III only
- C) I and II only
- D) II and III only

2.

Of the following molecules, which has the largest dipole moment?

- A) CO
- B) CO_2
- C) O_2
- D) HF

3.

Which of the following does NOT behave as an electrolyte when it is dissolved in water?

- A) CH_3OH
- B) K_2CO_3
- C) NH_4Br
- D) HI

4.

The geometry of the SO_3 molecule is best described as

- A) trigonal planar
- B) trigonal pyramidal
- C) square pyramidal
- D) bent

5.

Which of the following molecules has the shortest bond length?

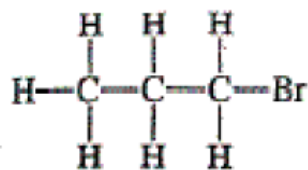
- A) N_2
- B) O_2
- C) Cl_2
- D) Br_2

6.

For which of the following molecules are resonance structures necessary to describe the bonding satisfactorily?

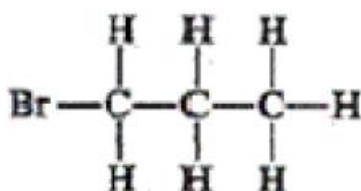
- A) H_2S
- B) SO_2
- C) CO_2
- D) OF_2

7.

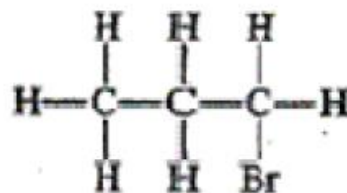


Which of the following structural formulas represents an isomer of the compound that has the structural formula represented above?

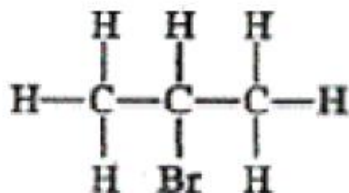
A)



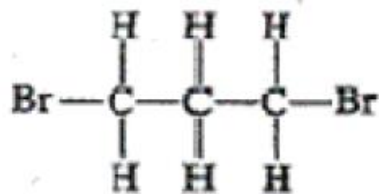
C)



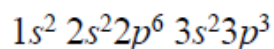
B)



D)



8.



Atoms of an element, X, have the electronic configuration shown above. The compound most likely formed with magnesium, Mg, is

- A) Mg_2X
- B) MgX_2
- C) MgX_3
- D) Mg_3X_2