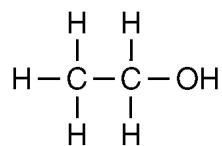


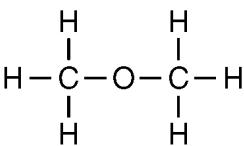
1. Which atoms can bond with each other to form chains, rings, or networks?
- A) carbon atoms B) hydrogen atoms
C) oxygen atoms D) nitrogen atoms
2. A molecule of an organic compound contains at least one atom of
- A) carbon B) chlorine
C) nitrogen D) oxygen
3. Which two compounds have the same molecular formula but different chemical and physical properties?
- A) CH₃CH₂Cl and CH₃CH₂Br
B) CH₃CHCH₂ and CH₃CH₂CH₃
C) CH₃CHO and CH₃COCH₃
D) CH₃CH₂OH and CH₃OCH₃
4. Which structural formula is *incorrect*?
- A)
B)
C)
D)
5. Organic compounds that are essentially non-polar and exhibit weak intermolecular forces have
- A) low vapor pressure
B) low melting points
C) high boiling points
D) high electrical conductivity in solution
6. In general, which property do organic compounds share?
- A) high melting point
B) high electrical conductivity
C) readily soluble in water
D) slow reaction rate
7. Which representation is the structural formula of an organic compound?
- A) CH₄
C)
B) NH₃
D)
8. Which of the following compounds has the highest normal boiling point?
- A) C₂H₆ B) C₃H₈ C) C₄H₁₀ D) C₅H₁₂
9. Which of the following has the lowest boiling point?
- A) butane B) ethane
C) methane D) propane
10. Which kind of bond is most common in organic compounds?
- A) covalent B) ionic
C) hydrogen D) electrovalent
11. Given the formulas for two compounds:
- and*
- These compounds differ in
- A) gram-formula mass
B) molecular formula
C) percent composition by mass
D) physical properties at STP

12. Given the structural formulas:

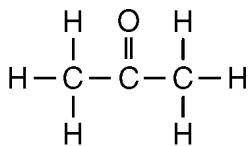
Formula A



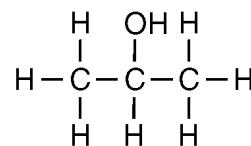
Formula B



Formula C



Formula D



Which two formulas represent compounds that are isomers of each other?

- A) A and B B) A and C C) B and D D) C and D

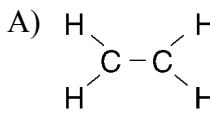
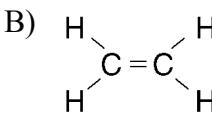
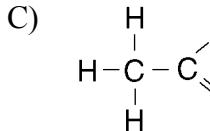
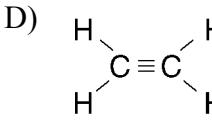
13. Hydrocarbons are compounds that contain

- A) carbon, only
B) carbon and hydrogen, only
C) carbon, hydrogen, and oxygen, only
D) carbon, hydrogen, oxygen, and nitrogen, only

14. A molecule of a compound contains a total of 10 hydrogen atoms and has the general formula $\text{C}_n\text{H}_{2n+2}$. Which prefix is used in the name of this compound?

- A) but- B) dec- C) oct- D) pent-

15. Which structural formula *correctly* represents a hydrocarbon molecule?

- A) 
B) 
C) 
D) 

16. What is the general formula for the members of the alkane series?

- A) C_nH_{2n} B) $\text{C}_n\text{H}_{2n+2}$
C) $\text{C}_n\text{H}_{2n-2}$ D) $\text{C}_n\text{H}_{2n-6}$

17. Natural gas is mostly comprised of

- A) butane B) ethane
C) methane D) propane

18. What is the geometric shape of a methane molecule?

- A) triangular B) rectangular
C) octahedral D) tetrahedral

19. As the number of carbon atoms in each successive member of a homologous hydrocarbon series increases, the number of possible isomers

- A) decreases B) increases
C) remains the same

20. Which of the following compounds has the greatest possible number of isomers?

- A) butane B) ethane
C) pentane D) propane

21. The total number of covalent bonds in a molecule of C_3H_8 is

- A) 11 B) 10 C) 3 D) 8