

11 • Chemistry of Carbon

PRACTICE TEST

- A molecule named propene has the formula:
 - C_2H_2
 - C_3H_6
 - C_4H_3
 - C_3H_8
 - C_3H_4
- What is the name of a molecule with the formula, C_5H_{10} ?
 - pentane
 - hexene
 - butyne
 - butene
 - pentene
- A molecule that fits the pattern, C_nH_{2n+2} , is a(n)
 - alkane
 - alkene
 - cyclic compound
 - alkyne
 - need more info
- The general formula of the alkyne series is:
 - C_nH_{2n}
 - C_nH_{2n-4}
 - C_nH_{2n-2}
 - C_nH_{2n-6}
- How many p bonds are present in propyne?
 - 1
 - 2
 - 3
 - 4
- The hydrocarbon series that has a double bond between carbon atoms is the
 - alkane family
 - alkene family
 - alkyne family
 - alkadiene family
- Organic chemistry is the study of
 - compounds of carbon
 - nonmetals
 - once-living things
 - compounds produced by living things
- In octene, the hybridization(s) of carbon is(are):
 - sp and sp^2
 - sp^2 only
 - sp^3 and sp^2
 - sp^3 only
 - sp, sp^2 and sp^3
- The properties of carboxylic acids include all of the following *except*:
 - they can be neutralized by bases
 - the molecule has some polarity
 - they ionize completely in water solution
 - they react with alcohols to form esters
- Dimethylbenzene is also known as xylene. 1,3-dimethylbenzene would be the same as...
 - ortho-xylene
 - meta-xylene
 - para-xylene
 - none of these
- The compound

$$\begin{array}{c} \text{H}_3\text{C} \\ | \\ \text{C}=\text{O} \\ | \\ \text{C}-\text{H}_2 \\ | \\ \text{CH}_3 \end{array}$$

 is classified as a
 - alcohol
 - ester
 - acid
 - ketone
 - aldehyde
- What hybridization is utilized by the oxygen atom in the carbonyl group above?
 - sp
 - sp^3
 - sp^2

13. An amine is characterized by what functional group?

- a) ROH c) RCOOR'
b) RCOOH d) RNH₂

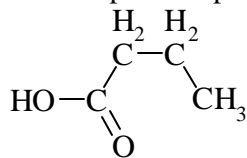
14. Compounds with the same molecular formulas but different structural formulas are called

- a) isotopes d) anomalies
b) variations e) isomers
c) conformations

15. The least chemically reactive of the hydrocarbon families are the

- a) alkanes c) alkynes
b) alkenes

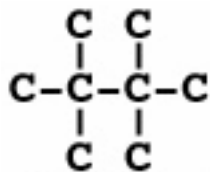
16. The compound represented by



is a(n)

- a) acid d) aldehyde
b) ester e) amide
c) ketone

17. Draw the structural formula of 3,5-dimethyl-3-ethyloctane



18. The IUPAC name of _____ is:

19. The molecule CH₃OH is gently oxidized.

Draw the product.

20. Draw and name the three isomers of pentane.

23. Draw and name the three isomers of dibromobenzene

24. Draw the polymer formed from the monomer vinyl chloride, CH₂CHCl: