

Physical Science
Bonds, Formulas, Organic Compounds

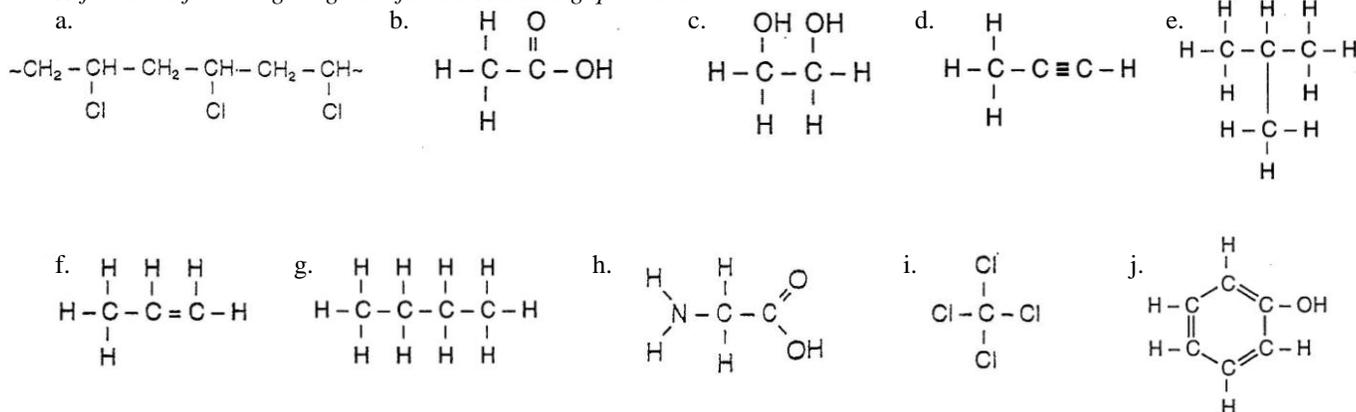
Name _____

1. Which element is the basis for organic compounds, how many electrons can it share, why can it share this number, and what kind of bonds are formed when electrons are shared?
2. What is a hydrocarbon?
3. What kind of bond is between the atoms of **saturated** hydrocarbons? What kind of hydrocarbon is this? Names of compounds representing these hydrocarbons end with what 3 letters?
4. What kind of bonds do compounds of **unsaturated** hydrocarbons have?
5. What kinds of hydrocarbons are the unsaturated hydrocarbons? Their names of compounds end with what letters? (Differentiate between all types of unsaturated hydrocarbons).
6. The formula of the compound C_7H_{14} shows that it is a(n) _____ hydrocarbon.
7. The formula of the compound C_4H_{10} shows that it is a(n) _____ hydrocarbon.
8. The formula of the compound C_9H_{16} shows that it is a(n) _____ hydrocarbon.
9. Define **isomer** and draw structural models to illustrate the definition. Use C_4H_9OH .
10. Compounds containing Benzene rings have what unique characteristic (think nose)?
11. Alcohol compounds are called _____. One can always identify the formula of an organic alcohol because it has an _____ group.
12. Organic acids are known as _____ groups. One can always identify the formula of an organic acid because it has a _____ group.
13. What kind of biological compound is NH_2CH_2COOH ? How do you know (hint: examine the formula)?
14. Name two nucleic acids.
15. Which biological compound is represented by $C_{12}H_{24}O_{12}$ and how do you know?

16. What is a biological compound that may be saturated or unsaturated and comes from plants and animals? Give one example of each of these saturated fats and unsaturated fats.

17. What do we call biological catalysts?

Refer to the following diagrams for the remaining questions.



18. What kind of compound is indicated by the structure in figure a? _____

19. What is the chemical formula for figure c? _____

20. Which compound(s) is (are) an alkane? _____

21. Which compound(s) is (are) an alkyne? _____

22. In figure d, what is represented by the symbol / ? _____

23. What is the chemical formula for figure f? _____

24. Which two formulas represent isomers of the same compound? _____

25. Which of the compounds are aromatics? _____

26. What is the formula for the compound in figure b? _____

27. What kind of compound is figure h? _____

28. Which of the compounds are organic acids? _____

29. How are the structures of the organic acids similar? _____

30. Which compounds are alcohols and what do they have in common? _____

31. Circle the correct name of the formula for the molecular compound pictured in figure i:

carbon chloride monocarbon chloride carbon tetrachloride monocarbon tetrachloride

32. Water molecules are held together with weak _____ bonds.