Organic Quick Review

1. Organic compounds must contain Carbon (and usually H), they are molecular compounds
2. Carbon always makes 4 covalent bonds (wide variety of compounds)
3. Molecular formulas show exact numbers of atoms in a compound.
4. Structural formulas show the bonding arrangement of atoms
5. Hydrocarbons contain only C & H (table Q)
6. Saturated hydrocarbons contain only single carbon to carbon bonds (alkanes)
7. Unsaturated hydrocarbons have 1 double or triple carbon to carbon bond (alkenes & alkynes)
8. Properties of organic compounds

A. low melting points and boiling points, weak imf's
B. melting points/boiling points increase with mass(imf's increase with size)
C. slow reaction rates
D. Catalysts are used to speed up organic reactions (enzymes)
E. Hydrocarbons are always non polar and do not dissolve well in water

9. Isomers are compounds with the same molecular formula but a different structure. They have different properties due to differences in structure.
10. The greater the number of carbon atoms the greater the number of isomers, minimum of 4 C's needed for a different structural arrangement
11. Use table P and R to name hydrocarbons (organic compounds containing only HYDROGEN AND CARBON)
    alkanes – end in ane B. alkenes - end in ene C. alkynes - end in yne (use table Q)

13. Functional groups give rise to unique properties. Table R lists functional groups. Use the example and the name given on the table to name and or draw your compound.

14. Esterification Reaction:
organic acid + alcohol → ester + water

15. Alkanes + halogen = substitution reaction

16. Alkenes + halogen = addition reaction (the double bond breaks and they become saturated)

19. Fermentation: making alcohol
sugar → $C_2H_5OH + CO_2$

20. Saponification fat + base (NaOH) → soap + glycerol

21. Combustion reactions:
organic compound + O_2 → CO_2 and H_2O (top of table I)

22. Polymerization makes long chained molecules from smaller units (monomers) ex. $(C{=}{=}C)_n$