

# Announcements

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).
- Flatulence lab handout is available in the lab handout section of the class web site.
- First Exam 1 week from today. (Sample exam on Web Site).
- Download and read the lab handout for the flatulence lab before your lab next week.
- Free tutors are available through CAR and I have some names for people willing to do private tutoring, if you pay them. See the Tutors section of the web site.
- If you've got questions please come see me. Reminder: my office hours are: 11:30-12:30 MW, 9:30-10:30 TThF or by appointment.

# Review

- Petroleum is separated (refined) by fractional distillation.
  - Raoult's law  $P_{\text{tot}} = X_1 P_1^{\circ} + X_2 P_2^{\circ} + \dots$  used to show how distillation works.
  - Branched alkanes are harder to ignite (higher octane)
  - cycloalkanes (other than 5 membered are puckered to maintain  $109^{\circ}$   $sp^3$  bond angles)
  - aromatic compounds (resonance = delocalization of  $\pi$  electrons = greater stability)
- Oxygenates also added to gasoline (alcohols and ethers).

# Nomenclature Review

- N-alkanes with  $>10$  C: greek prefix for (#C-10) + decane
- Cycloalkanes: cyclo + prefix for # of C + ane
- Branched Alkanes:
  - 1) Find the longest chain (backbone).
  - 2) Find the largest side group and number the backbone from the end nearest this side chain.
  - 3) Use the numbers to indicate the positions of the side groups.
  - 4) Alphabetize the side groups.
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# Alcohols and Ethers

- Alcohols (C-O-H)
  - Name by replacing -ane of the corresponding alkane with -ol.
- Examples:
  - $\text{CH}_3\text{OH}$  = methanol
  - $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$  = propanol

- Ethers (C-O-C)
  - Name by placing the names of the two alkyl groups in alphabetical order before the word ether.
  - Ignore the prefixes tert-, iso- and sec-.
- Examples
  - tert-butyl methyl ether
  - $(\text{CH}_3)_3\text{COCH}_3$

# Starch and Cellulose

Figure 12. 18

# Coal