

LEC ①

CHEM 30A

Sep 30th

①

- ① WHO / WHEN / WHERE / HOW?
- ② WHAT?

HMK: READ 1-1.4

PROBLEMS 1.1-1.5, 1.19-1.22

① ME

- 3077D YOUNG HALL

- WEBSITE

- Lecture notes
- Announcements
- Handouts
- Exams & Keys
- Policy

- 8AM SUCS, but I strongly recommend you come to class

- QUESTIONS OK

- ENGLISH ENGLISH

26th letter, 13th element, football etc

- MODEL KITS, not required, but useful

TAs: Cari, Heather, Kaushik, Ryan

- Discussion sections
(be consistent, exams returned here)

- Office hours (v. useful)
times posted on website/syllabus
MINE are M 4-6, R 12-2

- TEXTBOOK

Brown & Foote 4th Ed (3rd ok)

↳ reading & hwk assignments

- EXAMS

3	QUIZZES	100	(3 x 35)
2	MIDTERMS	200	(2 x 115)
1	FINAL	200	(1 x 230)
		<u>500</u>	(565)

FINAL IS COMPREHENSIVE

Rules: see SYLLABUS + WEBSITE

- CHEATING, don't even think about it

- SYLLABUS - read it, things may change
(like Fri Nov 11th)

- WAITLIST (not my decision)

- IMPACTED CLASS....

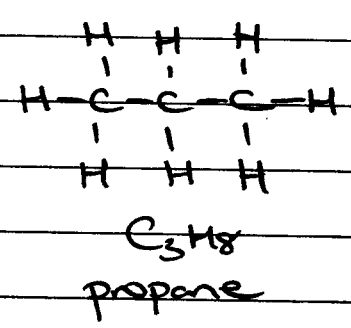
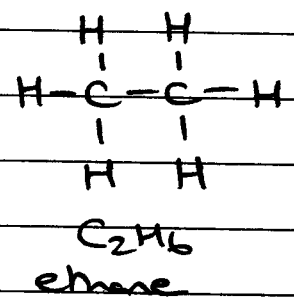
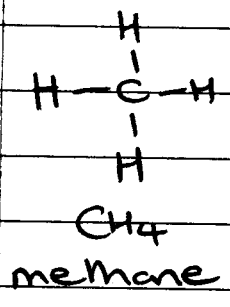
② WHAT? - ORGANIC CHEMISTRY

ORGANIC \Rightarrow compounds from living things
(as opposed to inorganic)

\rightarrow study of compounds containing carbon.

SIMPLEST \Rightarrow HYDROCARBONS

contain H and C ONLY

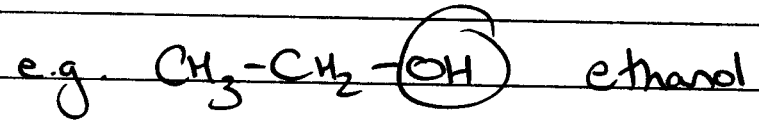


FRAMEWORK \Rightarrow dangle FUNCTIONAL GROUPS

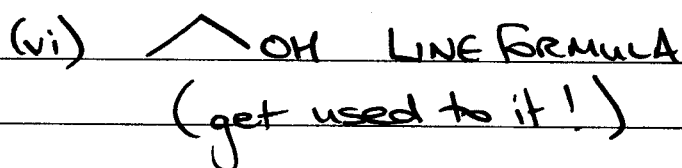
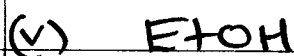
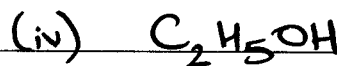
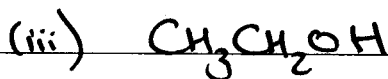
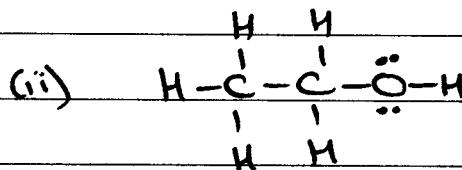
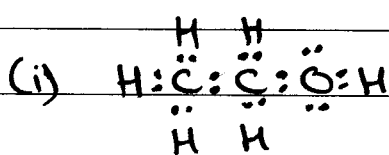
\Rightarrow specific combinations of atoms in precise arrangements

- WHY
- (i) CLASSIFY organic compounds
 - (ii) BASIS for NAMING
 - (iii) PREDICTABLE CHARACTERISTIC REACTIVITY

for example: ALCOHOLS

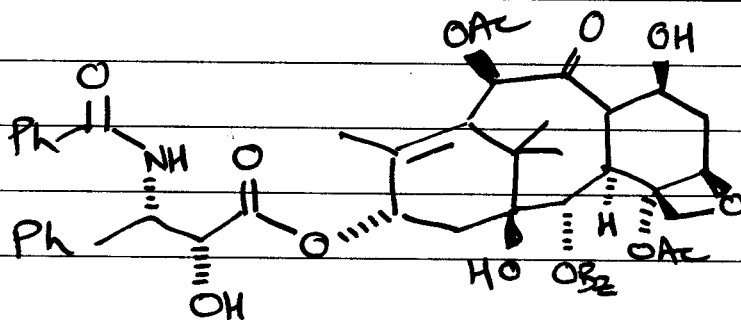


DRAWING MOLECULES



Atoms other than C, H \Rightarrow HETEROATOMS

eg. O, N, S, P, F, Cl, Br, I



TAXOL

- FUNCTIONAL GROUPS - STEREOCHEMISTRY
- ABBREVIATIONS - LINE FORMULA

most promising ANTI-TUMOR agent developed
in 3 DECADES \Rightarrow 1998 sales \$1.2 BILLION

- Where do we get it? Not like it grows on trees...

- Well... YES... it does PACIFIC YEW BARK
but six x 100 yr old trees → 1 PATIENT

- SYNTHESIS (making molecules)



REACTIONS (A + B \xrightarrow{C} D)



MECHANISMS (how it works)

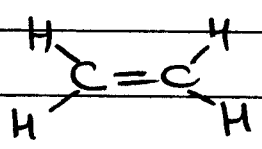
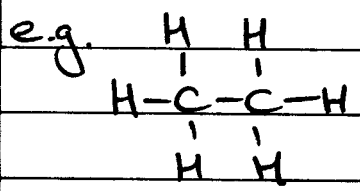


STRUCTURE & (electrons & orbitals)
BONDING

THINGS YOU NEED TO KNOW

H forms 1 BOND (neutral species)
C forms 4 BONDS

not absolute, but good 99% of the time.



(ALKANE)
ethane

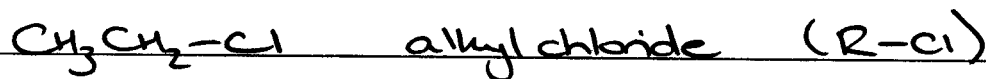
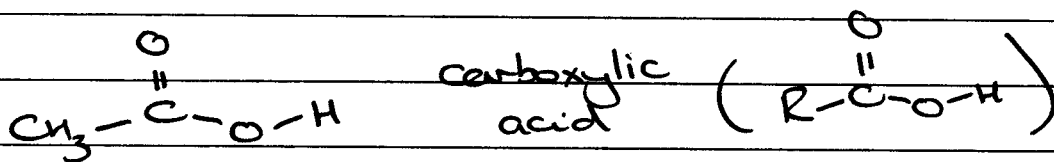
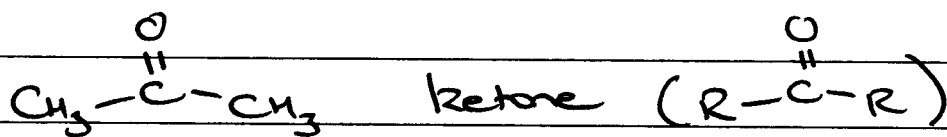
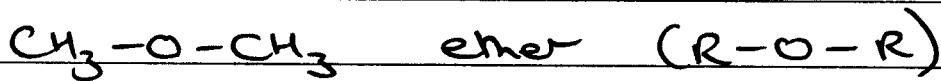
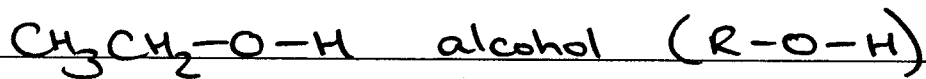
(ALKENE)
ethylene

(ALKYNE)
acetylene

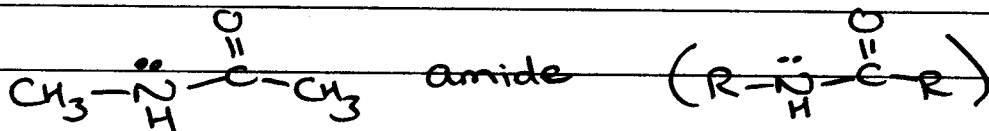
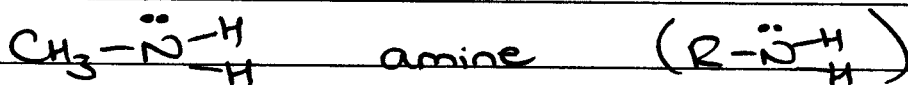
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O forms 2 BONDS

Hal (F, Cl, Br, I) form 1 BOND



N forms 3 BONDS



S, P variable

R GROUPS - whatever you want them to be...