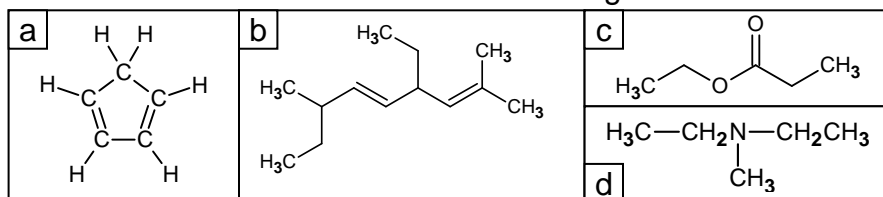


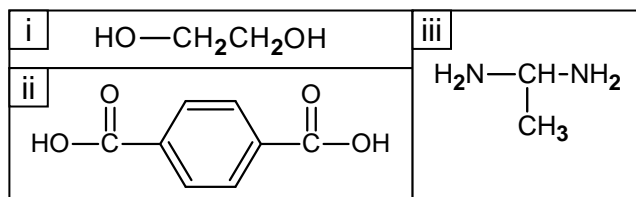
## Organic chemistry review

1. Draw structures for the following compounds:
- |                                  |                        |
|----------------------------------|------------------------|
| a) 2-methylbutane                | f) 2-methyl-4-octanol  |
| b) 3,3-dichlorohexane            | g) propanal            |
| c) 4-ethyl-3,3,4-trimethyldecane | h) methyl ethanoate    |
| d) ethanamide                    | i) methyl propyl ether |
| e) cis-1,3-dimethylcyclohexane   | j) 2-pentanone         |

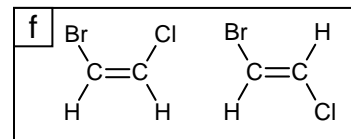
2. Write the correct name for each of the following structures:



3. Draw the polymers that result from:
- the reaction of i) and ii)
  - the reaction of ii) and iii)
  - the addition of ethene molecules
  - the addition of 3-hexene molecules



4. What is the difference between a saturated and unsaturated hydrocarbon? Which is benzene?
5. Identify each pair as structural isomers, geometric isomers, or neither
- cyclopentane, pentane
  - 1,1-dichloroethene, trans-1,2-dichloroethene
  - hexanoic acid, propyl propanoate
  - cis-1,2-dichlorocyclopentane, trans-1,2-dichlorocyclopentane
  - cis-1,2-dichlorocyclopentane, trans-1,3-dichlorocyclopentane



6.  $\text{C}_2\text{H}_6\text{O}$  exists as two structural isomers. Draw each isomer and name each. Predict the relative boiling point and solubility in water of the two isomers. Explain.
7. Indicate if the functional group contains a carbonyl, carboxyl or hydroxyl group:

	alcohol	ketone	ester	carboxylic acid
carboxyl group				
carbonyl group				
hydroxyl group				

8. In each case indicate how the following molecule can be made by drawing the reaction, naming all products and reactants, and naming the type of reaction that is occurring.
- 1,2-dichlorocyclopentane (from a hydrocarbon)
  - 1,1-dichlorocyclopentane (from a hydrocarbon)
  - A condensation reaction to make butyl methanoate
  - The reactants from c) (not using hydrogenation)
9. Using  $\text{Br}_2(\text{aq})$ , how can you easily distinguish between pentane, 1-pentene, and 1-pentyne?
10. What is wrong with the following names?
- |                            |                               |
|----------------------------|-------------------------------|
| a) 3-methyl-2-butyne       | d) 2,3-dimethyl-4-ethylnonane |
| b) 1,2-dichlorocyclobutane | e) 1-butanone                 |
| c) 3-methyloctene          | f) 2-ethyl-2-methylhexane     |

Additional practice (pg. 1049-1053): 24.5, 7, 11, 12, 13, 14, 17, 19, 32, 36, 37

