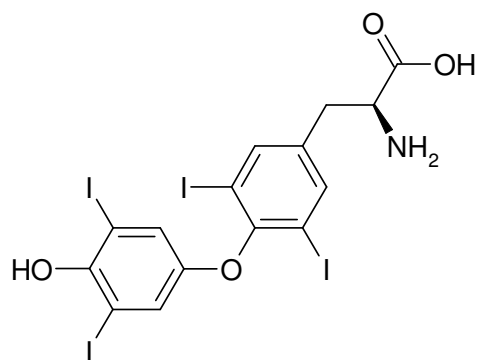


/73 = \_\_\_\_\_ %

Name: \_\_\_\_\_

**SCH 4U Organic Test - Part 1**

1. State the degrees unsaturation and the chemical formula for thyroxine (thyroid hormone responsible for metabolic rate control)



degree unsaturation

chemical formula:

(S)-2-Amino-3-[4-(4-hydroxy-3,5-dii  
odo-phenoxy)-3,5-diiodo-phenyl]-pro  
pionic acid

/4


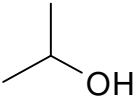
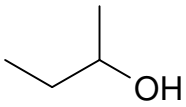
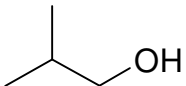
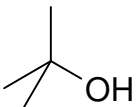
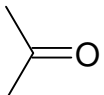
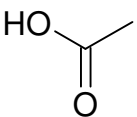
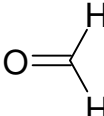

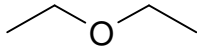
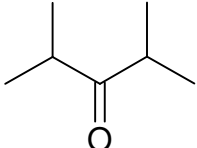
2.  $H = [2C + 2] - 2(\text{deg. unsat}) - X + N$

Use the above saturation formula to determine the degree of unsaturation and hence the possible combinations of functional groups (and rings) that would make possible each formula. (1/2 mark per correct response, some marks may be deduced for extra incorrect answers)

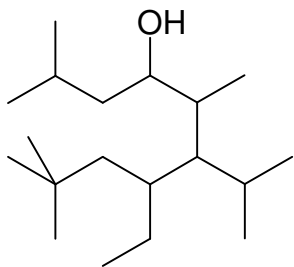
$C_8H_{16}$	$C_5H_{11}N$
/1	/1
$C_{15}H_{30}O_2$	
/6	

/12

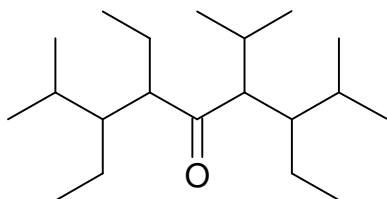
3. Provide common names and I.U.P.A.C. names for each of the following. If more than one common name exists, include both. Be sure to follow the rules when writing I.U.P.A.C. names. One mark per name

	Common Names	I.U.P.A.C.
		
		
		
		
		
		
		
		
		
		/
		

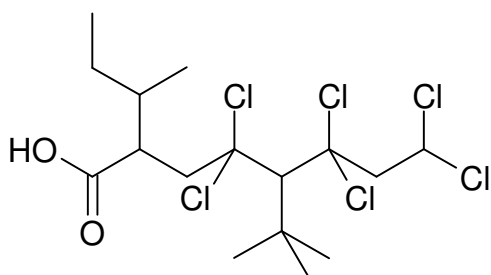
4. Provide full and correct I.U.P.A.C. names:



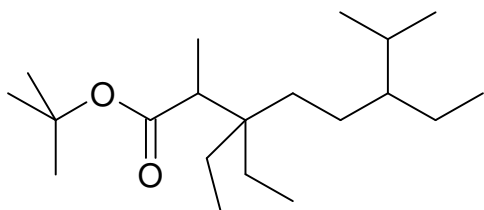
/ 4



/ 4



/ 4



/ 4

5. Provide all structural isomer for this formula. Be sure to consider and unsaturation considerations that should be considered. I think that there are 22. Present your work in an organized fashion. Marks will be deduced for disorder. Also, marks will be deduced for duplicate (or triplicate etc. structures). Use only five and six member rings.

