

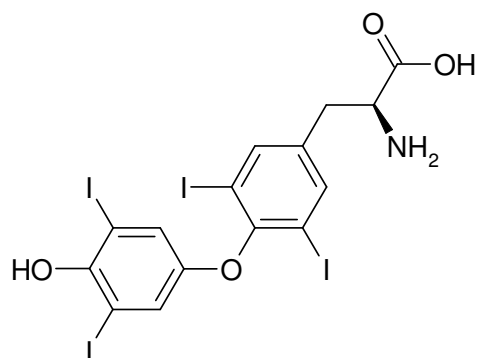
K	C	A	T
13		22	40

/75 = %

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:

/4A

(S)-2-Amino-3-[4-(4-hydroxy-3,5-diiodophenoxy)-3,5-diiodophenyl]propanoic acid

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


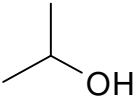
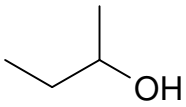
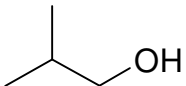
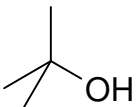
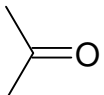
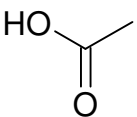
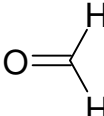


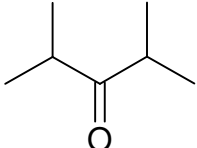
Use the above saturation formula to determine the degree of unsaturation and hence the possible combinations of functional groups (and rings) that would make possible each formula. (1/2 mark per correct response, some marks may be deduced for extra incorrect answers)

$C_8H_{16}$	$C_{12}H_{26}O_2$
$C_{15}H_{30}O_2$	

/8A

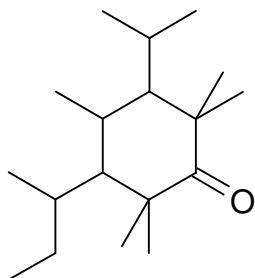
K	C	A	T
		12	

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

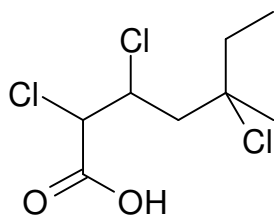
	Common Names	I.U.P.A.C.
		
		
		
		
		
		
		
		
		
		
		

K	C	A	T
13		10	

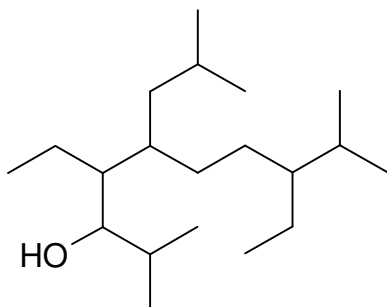
4. Provide full and correct I.U.P.A.C. names:



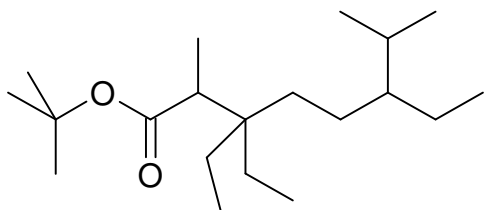
/4



/4

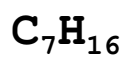


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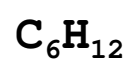


K	C	A	T
			16

5. Provide all structural isomer for the following formula. Be sure to consider and unsaturation considerations as appropriate. 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. Organize your structures according to the combination of functional groups rings etc. that make possible these formula:



K	C	A	T
			9



K	C	A	T
			15