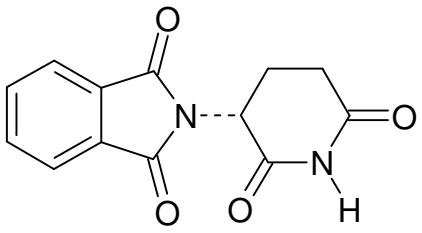
K	C	A	T
13		25	31

/69 = %

Name:_____

Organic Chemistry Test #1 – Structures and Nomenclature

1. For each of the following structures determine the degree of unsaturation and use this information to determine the complete chemical formula.



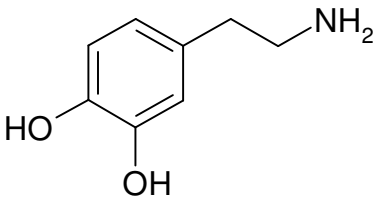
2-(2,6-Dioxo-piperidin-3-yl)-isoindole-1,3-dione

"thalidomide"

deg. unsat = _____

formula =

/4A



4-(2-Amino-ethyl)-benzene-1,2-diol

"dopamine"

deg. unsat = _____

formula =

/4A

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

Characterize each formula by providing possible combinations of functional groups (and rings) that will satisfy the formula. (½ mark per correct response)

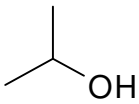
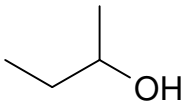
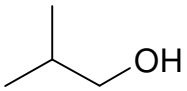
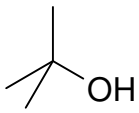
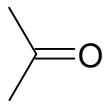
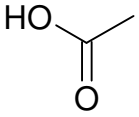
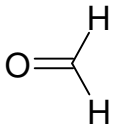
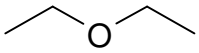
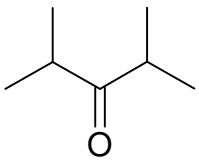
$C_{50}H_{102}O$ two answers

$C_{12}H_{24}O_2$ twelve answers

/7A

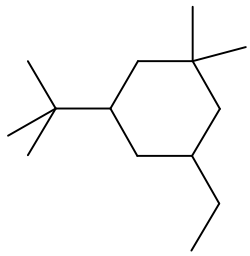
K	C	A	T
		15	

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

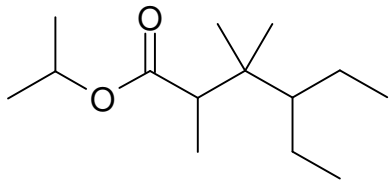
	Common Names	I.U.P.A.C.
		
		
		
		
		
		
		
		
		
		

K	C	A	T
13		10	

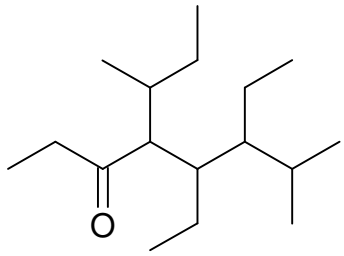
4. Write complete I.U.P.A.C. names for each of the following:



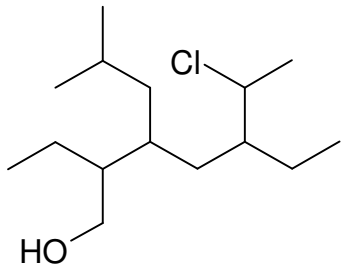
/4T



/4T



/4T



/4T

K	C	A	T
			16

5. Provide all structural isomer for this formula. Present your work in an organized fashion. Marks will be deduced for duplicate (or triplicate etc. structures).

$C_5H_{11}X$

/8T

$C_4H_{10}O$

/7T

K	C	A	T
			15