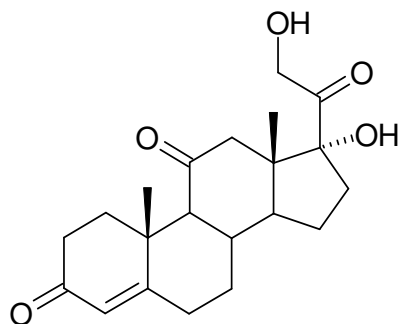


Name: \_\_\_\_\_

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

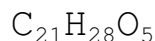
1. State the degrees unsaturation and the chemical formula for cortisone (hormone produced by the adrenal gland in response to physical or emotional stress - nature corticosteroid)



degree unsaturation

8 degree unsat.

chemical formula:



**AutoNom Name:**

(10R,13S,17R)-17-Hydroxy-17-(2-hydroxy-acetyl)-10,13-dimethyl-1,6,7,8,9,10,12,13,14,15,16,17-dodecahydro-2H-cyclopenta[a]phenanthrene-3,11-dione

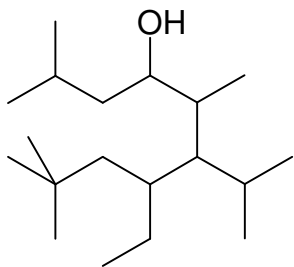
2.  $H = [2C + 2] - 2(\text{deg. unsat}) - X + N$

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)

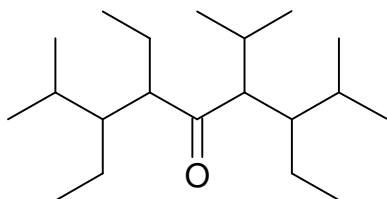
$C_4H_{10}O_2$ - alcohol + alcohol - alcohol + ether - ether + ether	$C_{12}H_{24}$ - alkene - ring (alkane ring)
$C_{15}H_{30}O_2$ - carboxylic acid - ester - aldehyde + alcohol - aldehyde + ether - ketone + alcohol - ketone + ether	- alcohol + alcohol + alkene - alcohol + alcohol + ring - alcohol + ether + alkene - alcohol + ether + ring - ether + ether + alkene - ether + ether + ring



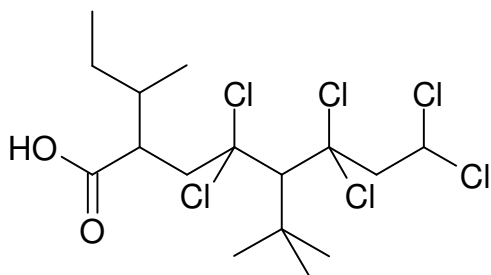
4. Provide full and correct I.U.P.A.C. names:



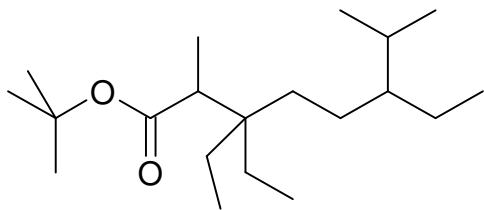
7-ethyl-6-isopropyl-2,5,9,9-tetramethyl-4-decanol



3,6,7-triethyl-4-isopropyl-2,8-dimethyl-5-nonanone

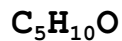


2-secbutyl-5-t-butyl-4,4,6,6,8,8-hexachlorooctanoic acid



t-butyl 3,3,6-triethyl-2,7-dimethyloctanoate

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 deducted for disorder. Also, marks will be deducted 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:



**Show Aldehydes and Ketones Only**

