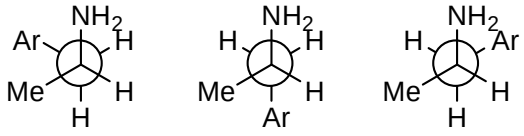
____ 8. **How many different saturated (no double bonds) hydrocarbon molecules** can be made using 5 carbon atoms?

a. 4
b. 1
c. 3
d. 2
e. 5 or more

1. Which is the **highest energy conformer** in this series of Newman projections?



1 **2** **3**

(A) 1

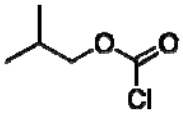
(B) 2

(C) 3

(D) 1 and 3 are equally unfavourable

(E) 1, 2, and 3 are equally favourable

2. Select the **correct common name** for the following molecule.



(A) *tert*-butyl chloroformate

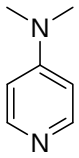
(B) isobutyl chloroformate

(C) isopropyl chloroformate

(D) *sec*-butyl chloroformate

(E) 1-methylethyl chloroformate

1.Select the correct **name** for the following molecule.



(A) 4-dimethylaminotoluene

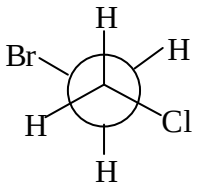
(B) 4-dimethylaminopyridine

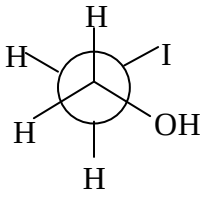
(C) 4-dimethylaminobenzene

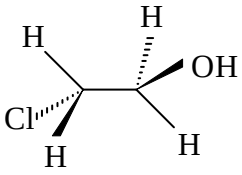
(D) diethylaminopyridine

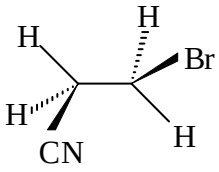
(E) dimethylthiopyridine

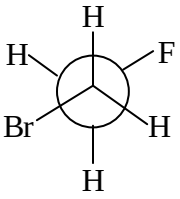
1. Which of the following molecules are shown in a ***gauche*** conformation?

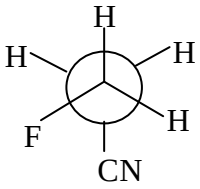
(i) 

(ii) 

(iii) 

(iv) 

(v) 

(vi) 

(A) i, iii, v

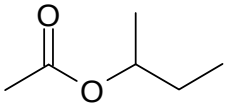
(B) ii, iv, vi

(C) i, v

(D) iii, iv

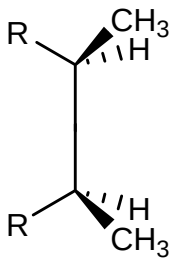
(E) i, iii, iv, v

1. What is a correct **name** for the following compound?



(A) *sec*-butyl acetate
(B) butyl methyl carboxylic acid
(C) ethyl butanoate
(D) isobutyl acetate
(E) *n*-butyl acetate

2. What is **TRUE** about the following molecule?



(A) The molecule is in an eclipsed conformation

(B) The molecule is in a staggered conformation

(C) The molecule is in an eclipsed configuration

(D) The molecule is in a staggered configuration

(E) None of the above

3. **How many structural isomers** are there for a compound having the formula $\mathbf{C_2H_2Cl_2}$?

(A) 1

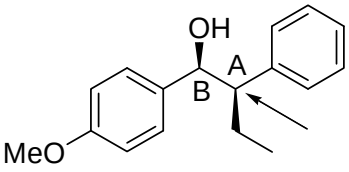
(B) 2

(C) 3

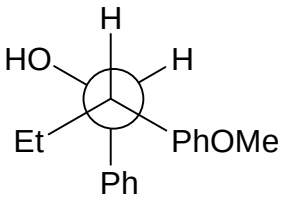
(D) 4

(E) 5

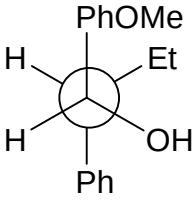
4. For the following molecule, look down the C-C bond from A to B in the direction that is indicated by the arrow. Which of the following **Newman projections is/are correct for this bond**?



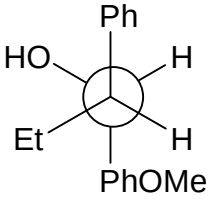
Note:
Ph = a phenyl substituent
PhOMe = a *para*-methoxy-phenyl substituent



(A)



(B)



(C)

(D) Both (B) and (C); they are simply rotational isomers
(E) None of the above