

* How many possible trisubstituted derivatives C6H3X2Y can be btained from the meta disubstituted benzene C6H4X2? (Ignore directive effects of the substituents X and assume that all positions on the ring are accessible to the reagent Y+).
1. One 2. Two 3. Three 4. four
* In assigning priorities according to R,S convention, which group ranks highest?
1. –CH2(CH2)10CH3
2. –CH(CH3)2
3. –C(CH3)3
4. –CH2Cl
5. –CH2(CH2)10Cl
* Which of the following compounds reacts with cyclopentanone to yield and amine?
1. NaNH2
2. (CH3)2CHNH2
3. (CH3)3N
4. (CH3)2NH
* In a strongly acidic solution the amino acid lysine exists as the dication:

 +

H3N(CH2)4CHOOH

 ⏐+

 NH3

As the pH is raised what monocation is formed from the loss of the proton from the dication?

 O

 ⏐⏐

1. H2N(CH2)4CHC OH

 ⏐

 + NH3

 O

+ ⏐⏐

H3N(CH2)4C OH

 ⏐

 NH2

3.

 O

+ ⏐⏐

H3N(CH2)4C OH-

 ⏐

 +NH3

4.

 O

+ ⏐⏐

H3N(CH2)4C OH

 ⏐

 +NH3