**Chapter 14**

1. Complete the following reaction by drawing a structural formula for the product.

|  |  |  |
| --- | --- | --- |
| http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/2Mepropanal.gif | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/K2Cr2O7H2SO4arrow.gif | ? |

* You do not have to consider stereochemistry.
* You do not have to explicitly draw H atoms.

1. Draw a structural formula for the major organic anion formed when **2-ethylbenzaldehyde** is reacted with Tollens’ reagent.

* You do not have to consider stereochemistry.
* You do not have to explicitly draw H atoms.
* If no reaction occurs, draw the starting material.

1. Draw a structural formula for the product formed when **cyclopentanone** is reduced by hydrogen in the presence of a transition-metal catalyst.

* You do not have to consider stereochemistry.
* You do not have to explicitly draw H atoms.

1. Complete the following reaction by drawing a structural formula for the product.

|  |  |  |  |
| --- | --- | --- | --- |
| http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/propanal.gif | +     H2 | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/PtorNiArrow.gif | ? |

1. Give the name of the missing organic reactant in the following reaction.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ? | +   2 Ag(NH3)2+   +   3 OH- | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/Arrow.gif | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/23diMebutanoate.gif | +   2 Ag   +   4 NH3   +   2 H2O |

1. Complete the following single-step reaction by writing the name of the reactant.

|  |  |  |
| --- | --- | --- |
| ? | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/K2Cr2O7H2SO4arrow.gif | http://cxp.cengage.com/contentservice/assets/T=1405793760021/owms01h/mediaarchives/GenChem/Image/ethanoicacid.gif |

1. Draw a structural formula for the **hemiacetal** formed when one molecule of **ethanol** combines with one **pentanal** molecule.

* You do not have to consider stereochemistry.
* You do not have to explicitly draw H atoms.

1. Draw a structural formula for the **ketal** formed when two molecules of **ethanol**combine with one **2-butanone**molecule.

* You do not have to consider stereochemistry.
* You do not have to explicitly draw H atoms.