CHT212 Quiz I

Starting from benzene, outline a synthesis of the compound 1-ethyl-4-methylbenzene. You may use any inorganic reagents and any organic reagents of four or fewer carbon atoms. If your synthesis produces any other products, note what they are and why they are formed.

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Outline a synthesis of the following compounds from ethylbenzene:

1. 1-bromo-1-phenylethane

2. 1-bromo-4-ethylbenzene

3. benzoic acid

CHT212 Quiz III

Outline a synthesis of 4-methylbutyrophenone, shown below, starting from benzene.

CHT 212 Quiz IV

1. Provide an unambiguous, systematic name for the following compound:

2. Draw the structure of the compound 3-phenylpropanioc acid.

CHT 212 Quiz V

1. Provide unambiguous systematic names for the following compounds:

2. Rank the above compounds in terms of increasing acidity and explain your answer.

CHT 212 Quiz VI

Provide unambiguous, systematic names for the following compounds:

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Two equivalents of propionaldehyde (propanal) are treated with strong base.
1. Draw the structure of the product that forms.
2. If this reaction mixture is allowed to continue to react an acquivalent of vector is last. Draw
2. If this reaction mixture is allowed to continue to react, an equivalent of water is lost. Draw the structure of the new product after dehydration.

3. Provide unambiguous, systematic names for both products.

CHT 212 Quiz VIII

Ethyl propanoate is treated with sodium ethoxide in ethanol.

1. Predict the product of this reaction:

2. What is the name of this reaction?

CHT 212 Quiz IX

Propose a method for synthesizing 1-butylamine, starting from 1-butanol.

CHT 212 Quiz X

Show all steps involved and all intermediate products in the malonic ester synthesis of 5-methylhexanoic acid.

CHT 212 Quiz XI

Propose a method of preparing 2-methylcyclopentanone from cyclopentanone using enamine chemistry.