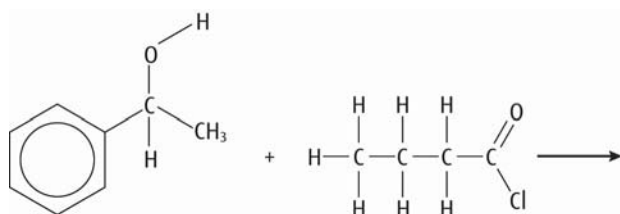
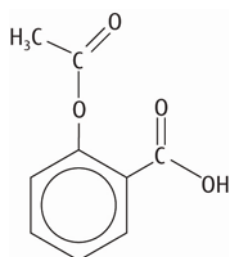


AHL Worksheet – Option G

- 1** This question is about acid anhydrides.
- a** Draw the full structural formula of ethanoic anhydride. [1]
- b** Draw the full structural formulas of the organic products of the reaction between ethanoic anhydride and methylamine (methanamine). [2]
- c** State the type of reaction occurring in part **b**. [1]
- 2** This question is about acyl chlorides.
- a** Draw the structure of 2-methylbutanoyl chloride. [2]
- b** Complete the following equation: [2]



- c** Draw out the mechanism for the reaction of ethanoyl chloride with ammonia. [4]
- d** Draw out the mechanism for the reaction of benzene with ethanoyl chloride. Include an equation to show how the electrophile is formed. [4]
- 3** Aspirin may be synthesised from 2-hydroxybenzoic acid. The structure of aspirin is shown below.



- a** Draw the structure of 2-hydroxybenzoic acid. [1]
- b** State the name and give the formula of a reagent that could be used to convert 2-hydroxybenzoic acid into aspirin. [2]
- 4** Design a reaction pathway, showing reagents, conditions and the structural formulas of all organic compounds, for the preparation of the compound shown below from benzene. [6]

