NCEA past exam questions on Level 2 Organic reaction flow charts

**2019**

1. Complete the following reaction scheme for propene, C3H6, by drawing the structural formulae for the

organic compounds **A** to **D**, naming compound **A** and identifying Reagents **1** and **2**, including any

conditions.



**2.** The conversion of bromoethane to chloroethane requires two steps, with alcohol as an intermediate

product.

Use this information to complete the reaction scheme below by drawing the structural formulae of

each organic molecule and naming the intermediate alcohol and the reagents required.



**2018**

Many organic reactions take more than one step in order to convert from one organic molecule to another.

Two steps are required to produce pentan-2-amine from an alcohol.

Use the information given to analyse the reactions.

(i) Draw the structural formulae of the compounds, and name the reagents involved in the process, in the boxes on the next page.

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(ii) Elaborate on the reactions in the scheme above.

In your answer you should identify:

• any conditions needed for each step of the conversion

• the names of alcohol **X** and organic molecule **Y**

• the type of reaction that is occurring for each step of the conversion.

**2017**

(a) (i) Complete the following reaction scheme by drawing the structural formulae for the organic compounds **A**, **C**, and **D**, and identifying reagents 2 and 3.



(ii) Identify the types of reactions that occur to produce compounds **A, B, C, D**, and **E**:

(b) Describe a simple test that will distinguish between solutions of the final organic compounds **B** and **E**.

(c) Compounds **B** and **E** react together.

(i) Write a balanced equation for the reaction that occurs between compounds **B** and **E**.

(ii) Identify the type of reaction that occurs between compounds **B** and **E**. Justify your answer.

(d) Explain how compound **A** from the reaction scheme could be directly converted into compound **D**.

**2016**

(i) Complete the following chart by drawing the structural formulae for the organic compounds **A**, **B**, and **C** and identifying reagent **X**.



(ii) Identify the type of organic reaction occurring in each of Reactions 1, 2, and 3.

**2015**

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(i) Complete the scheme above by drawing the structural formulae of the organic compounds A to D.

(ii) Circle the functional group of each of the organic compounds A, B, and C that you have drawn.

(iii) Identify reagents X and Y.

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