**Suggested responses to Questions**

**1**. Any three of: Sweet, crystalline, white, non conductor, low melting point, flammable,

polar.

3 marks

**2**. Refer to data book for drawings of sugars.

hydroxyl functional groups

ether

Products are sucrose AND water. Ensure products have all bonds drawn.

6 marks

**3.** **a**. Condensation

**b**. Yes – just make sure to include the mass of the water formed in the discussion.

3 marks

**4**. The large number of polar hydroxyl groups ensures that sucrose is soluble.

2 marks

**5**. Do not expect conductivity. This is a covalent compound that does not ionise in water.

2 marks

**6**. The ash acts as a catalyst lowering the activation energy of the sugar. This speeds the

reaction up.

2 marks

**7. a**. It melts to a clear liquid, then decomposes, giving off fumes and leaving a black

char.

**b**. The bonds between molecules break first, then the bonds within the molecules

break.

**c**. Yes – bonds are broken

**d**. C12H22O11 (s) 🡪 12C(s) + 11H2O(g)

7 marks

**8**. carbon dioxide and water

1 mark

**9**. C12H22O11 (s) + 12O2(g) 🡪 12CO2(g) + 11H2O(g)

1 mark

**10**. C12H22O11 (s) 🡪 12C(s) + 11H2O(g)

1 mark

**11. a**. Glucose has a positive reaction – it is a reducing sugar

Sucrose has a negative reaction – it is not a reducing sugar – no open ring structure

1. it is not a reducing sugar – no open ring structure

4 marks

**12**. ethanol and carbon dioxide

2 marks

**13.** **a**. Ca(OH) 2 (aq) + CO2(g) 🡪 CaCO3(s) + H2O(l)

**b**. C12H22O11 (s) + H2O 🡪 4CH3CH2OH(aq) + 4CO2(g)

**c.** The yeast contains the enzyme sucrase (invertase) that causes sucrose to hydrolyse   
 into glucose and fructose

4 marks

**14**. Examples are :care with the sulfuric acid, and fumes from burning sugar would

require a fume hood.

2 marks