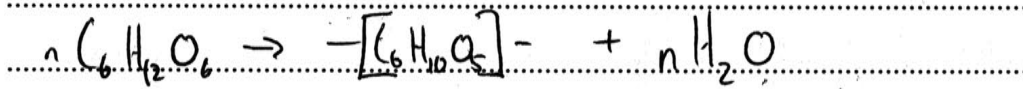
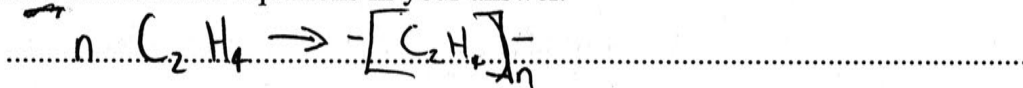

Question 30 (8 marks)

- (a) Compare the process of polymerisation of ethylene and glucose. Include relevant chemical equations in your answer. 3



polymerisation of ethylene is not a condensation polymerisation like the polymerisation of glucose, shown by the water produced.

Question 30 continues on page 22

Question 30 (continued)

- (b) Explain the relationship between the structures and properties of THREE different polymers from ethylene and glucose, and their uses. 5

LDPE has a lot of chain branching and therefore a lower density as the molecules cannot be packed close together, this is used for CD cases and other packaging.

HDPE has ~~the~~ very little chain branching and thus has a high density as the molecules can pack close together. This is used for strong childrens toys.

Cellulose is a long chain of alternating glucose molecules and is a plants main way of storing energy and can be used to create fabrics.

End of Question 30