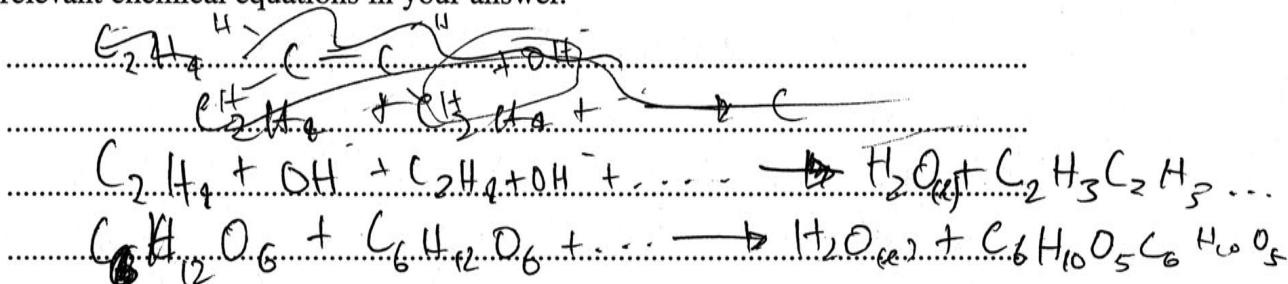


Question 30 (8 marks)

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



polymerisation of glucose is condensation
 polymerisation of ethylene is addition

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

low
density

polyethylene

chain branching - weaker, less rigidity. therefore used for shopping bags

high
density

polyethylene

linear structure - stronger, more rigid, high density
- used for piping, outdoor covers, toys

polystyrene - able to have gas pumped through to be used for insulation, cups
high density in normal form due to benzene ring - bad handles

End of Question 30