

Name \_\_\_\_\_  
Section \_\_\_\_\_

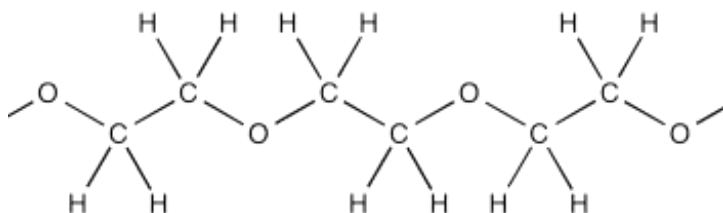
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3.091 Introduction to Solid State Chemistry  
Fall Term 2018  
Quiz 9 (A)

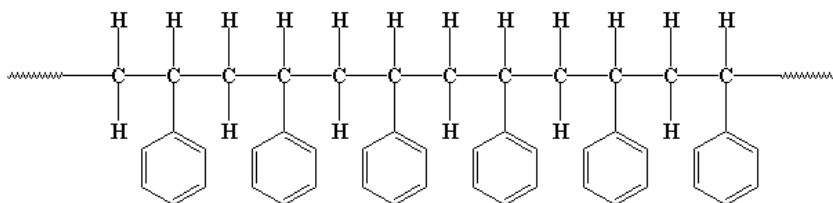
Do yourself a solid.

1a) Circle the monomer (the smallest repeat unit) in the following two polymers (2 points):

Polyethylene glycol



Polystyrene



1b) What is the primary intermolecular force in polystyrene (1 point)?

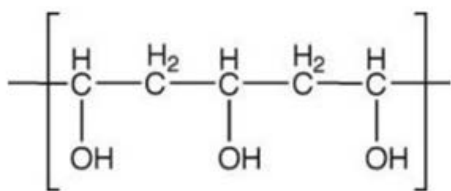
1c) Which polymer would you expect to contain more crystalline regions? Explain in one sentence (1 point).

1d) Which polymer would you expect to be soluble in water? Explain in one sentence (1 point).

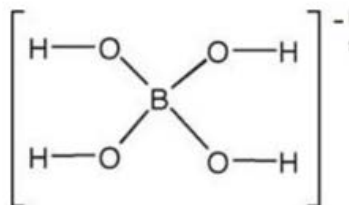
1e) One of these polymers is made via a radical process and the other is made via a condensation process. Which is made through a radical process (1 point)?

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2. In your goodie bag, you mixed Elmer's glue and Borax. The relevant chemical components are shown below:

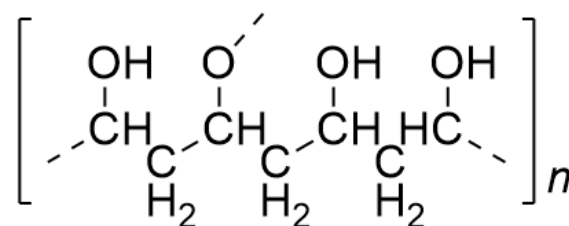
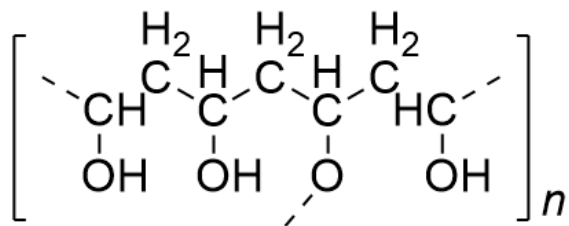


Elmer's Glue

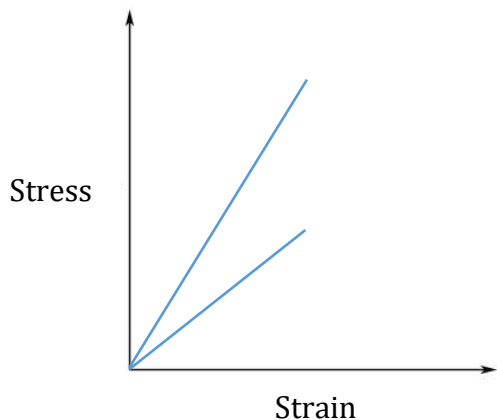


Borax

a) Draw the Borax component on the following strands of Elmer's glue (2 point).



b) The below graph contains the elastic regions of two stress-strain curves, corresponding to regular Elmer's glue and Elmer's glue treated with Borax. Clearly label the two graphs as treated or untreated (2 points).



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