

## Bio 111 Answer to iClicker Question 10A

- (A) Is the correct structure.
- (B) Has the correct formula, but the left-hand oxygen is making 3 bonds while the right-hand oxygen is making 1 bond and does not have a negative charge - these are both impossible.
- (C) Has the correct formula, but both hydrogens are making 2 bonds - this is impossible.
- (D) This would have the formula  $\text{H}_2\text{O}$  not  $\text{H}_2\text{O}_2$ .

Therefore, (A) is the only correct answer.

## Bio 111 Answer to iClicker Question 10B

First, it is important to remember that, since S is much less electronegative than O, SH's can't form H-bonds while OH's can. Since H-bonds are quite strong, any molecule that can make H-bonds to other molecules will be more viscous than one that can't. Therefore, molecules (A) and (D), which can not make H-bonds, will be less viscous than the other two. Comparing the two remaining molecules (B) and (C), while each molecule of (B) has one OH group, each molecule of (C) has 2 OH's. Thus, molecules of (C) will be held to each other (inter-molecular bonds) much more strongly than those of the other 3 molecules. Thus, it would be hardest to pass a billiard ball (for example) through a sample of (C) because more strong H-bonds would have to be broken to allow the billiard ball to pass. Thus, (C) would be expected to be the most viscous.