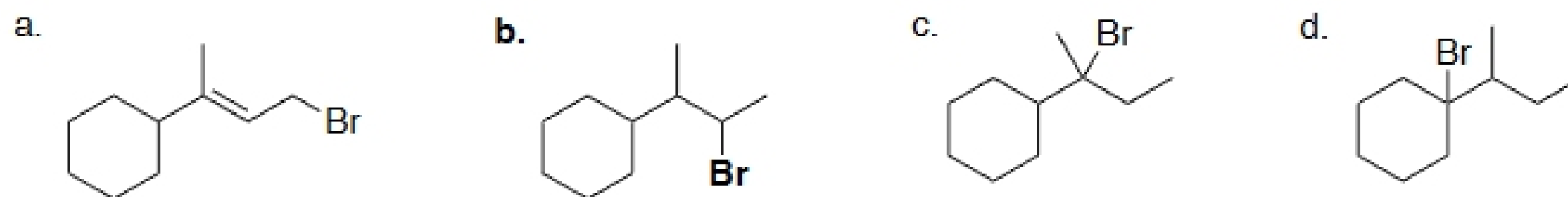
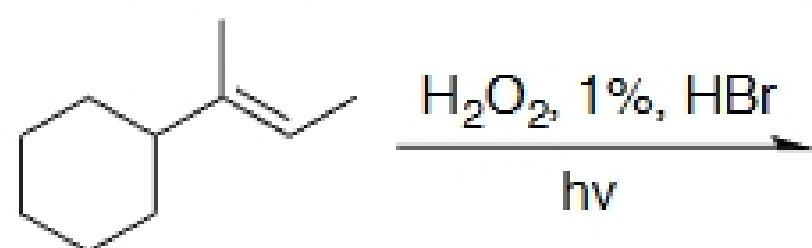
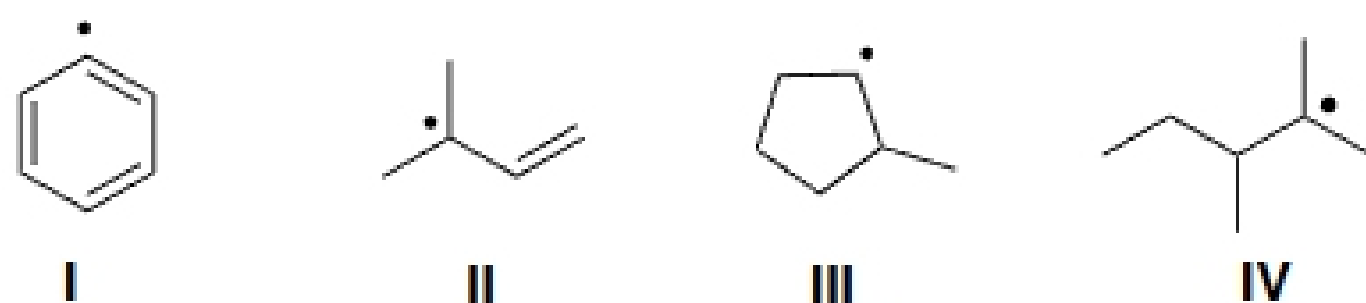


CHEM 343, Quiz 1

1. What is the expected product of the following reaction:

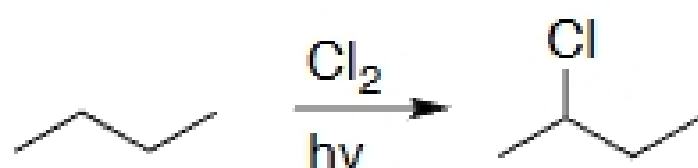


2. Put the radicals below in order of decreasing stability (most to least stable).



a. II>IV>III>I    b. II>IV>III>I    c. IV>II>III>I    d. IV>II>I>III

3. Given the following reaction, select the correct statement.



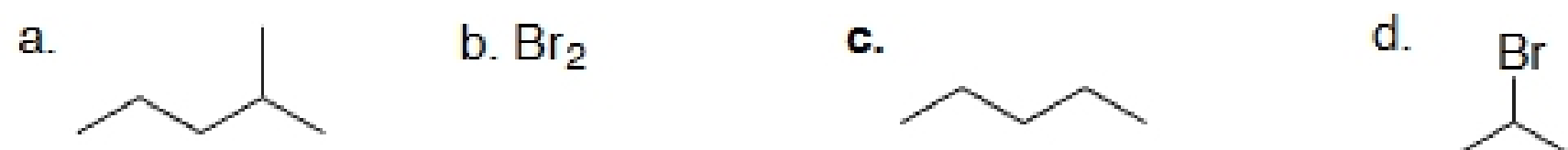
- a. The product shown is racemic.  
 b. The product shown is the sole product.  
 c. Both a and b are correct.  
 d. Neither a nor b is correct.

4. The step below is an example of: *Note: Bu is an abbreviation for butyl.*

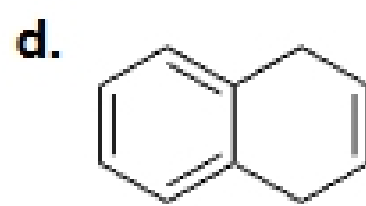
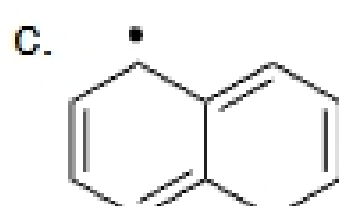
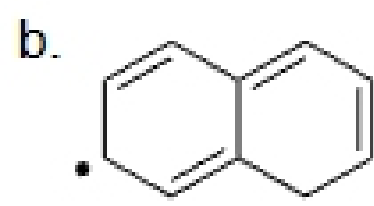
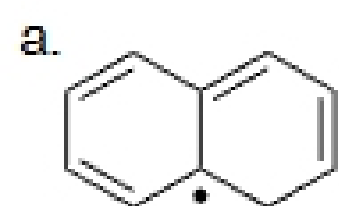
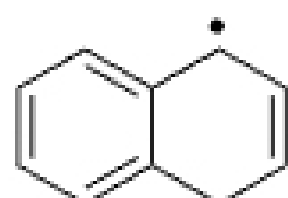


- a. initiation  
**b. propagation**  
 c. termination  
 d. cannot be determined without further information

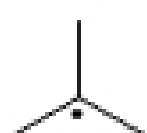
5. Which of the following is not a possible product of the reaction below?



6. Of the following, which is not a possible resonance structure of the radical shown?



7. Interactions between which two orbitals contribute to the stabilization of the radical below?



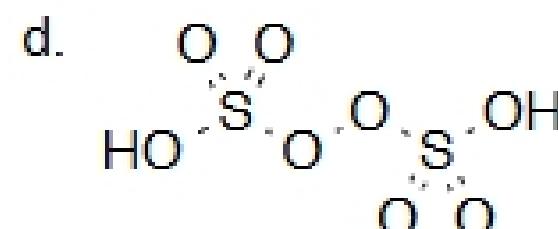
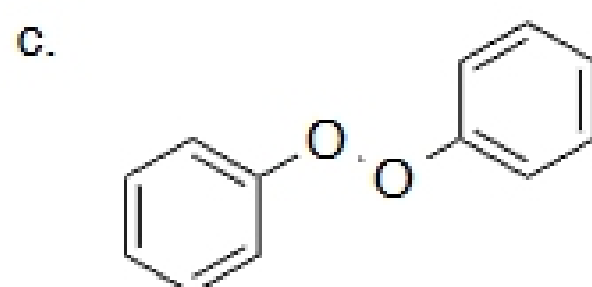
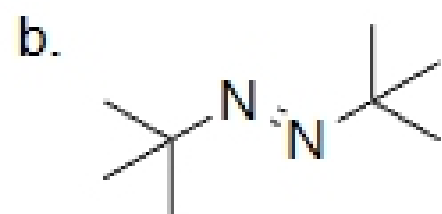
a. filled CH  $\sigma$  and empty C 2p

b. filled CC  $\sigma$  and half-filled C 2p

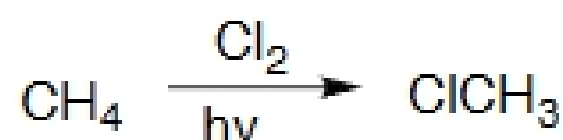
c. **filled CH  $\sigma$  and half-filled C 2p**

d. empty CC  $\pi$  and half-filled C 2p

8. Among the following, which would be the least likely to act as a radical initiator?



9. Which of the following would help ensure that the reaction below would not result in over-halogenation?



a. using a different wavelength of light

b. using an excess of chlorine

c. **using an excess of methane**

d. heating the reaction

10. The first three steps of a mechanism are shown below, though there may be a mistake in one of them. In which step is there a mistake?



a. in the initiation step

b. **in the first propagation step**

c. in the second propagation step

d. all steps are correct