Question 1  
MC20a
Which of the following is The strongest Bronsted Acid? \( R-CO_2H \) is a carboxylic acid and \( R-SO_3H \) is a solfonic acid, you will want to draw these two as Lewis structures and also draw the conjugate base anions to answer this question:

\[
\begin{align*}
A & : \text{SO}_3H \\
B & : \text{CO}_2H \\
C & : \text{SO}_3H \\
D & : \text{SO}_3H \\
\end{align*}
\]

Question 2  
MC20c
Which of the following statements about the equilibrium below is true?  

\[
\begin{align*}
& \text{acetone} \quad \text{allyl anion} \\
& \text{acetone} \quad \text{propene enolate} \\
\end{align*}
\]

I  the equilibrium will lie on the left  
II  the equilibrium will lie on the right  
III  the allyl anion is the strongest base in the equilibrium  
IV  propene is the weakest acid in the equilibrium  

A  I and IV only  
B  II and IV only  
C  II, III and IV only  
D  I, III and IV only

Question 3  
MC20d
Which of the following is the product of the acid/base reaction between aluminum trichloride (\( \text{AlCl}_3 \)) and acetone (\( \text{CH}_3\text{COCH}_3 \))?

\[
\begin{align*}
& :\text{O}^+ : \\
& :\text{Cl}^- : \\
\end{align*}
\]

\[
\begin{align*}
A & : \text{AlCl}_3 \\
B & : \text{AlCl}_3 \\
C & : \text{AlCl}_3 \\
D & : \text{AlCl}_3 \\
\end{align*}
\]
Question 4
MC20e

Give the major product of the following Lewis Acid/Base reaction. Note that the non-bonding electrons are NOT shown on the fluorines in either the reactants or products (hint, you will need to draw a minor resonance contributor of the ester to determine the most reactive pair of non-bonding electrons in the ester)

\[
\begin{align*}
\text{O} & \quad \text{BF}_3 \\
\text{O} & \quad \text{BF}_3 \\
\text{O} & \quad \text{BF}_3 \\
\text{O} & \quad \text{BF}_3
\end{align*}
\]

A B C D

Question 5
MC20i

Which of the following reactions is most likely to occur?

\[
\begin{align*}
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H} \\
\text{H} & \quad \text{H}
\end{align*}
\]

A B C D

Question 6
MC20k

Which is the most acidic proton in this molecule, Ha, Hb, Hc or Hd (not all of the C-H bonds are shown in this molecule)? hint, draw all of the conjugate base anions

\[
\begin{align*}
\text{Ha} & \quad \text{Me} \\
\text{Hb} & \quad \text{Me} \\
\text{Hc} & \quad \text{Hd}
\end{align*}
\]

A Ha B Hb C Hc D Hd
Question 7
MC201
Which is the weakest base? (hint, look for minor resonance contributors)

A  B  C  D
Question 8
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
Going INTO the next midterm exam in this class, how confident are you on your ability to perform well?
A Very confident
B Somewhat confident
C Neutral
D Not very confident
E Definitely not confident

QUESTION 9
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
Going INTO the next midterm exam in this class, how confident are you that you UNDERSTAND the material well?
A Very confident
B Somewhat confident
C Neutral
D Not very confident
E Definitely not confident

QUESTION 10
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
Going INTO the next midterm exam in this class, how confident are you that given an organic chemistry problem, you will not only understand it, you will also get the problem correct?
A Very confident
B Somewhat confident
C Neutral
D Not very confident
E Definitely not confident