Which of the following compounds is the stronger acid?

\[ \text{pK}_a = 25 \quad \text{pK}_a = 19 \]

A. \[ \text{B} \]

C. Neither of these compounds is an acid.

2016-05-24 Q1

6260
Exam 1

- **Time:**
  - Friday, **May 27 @ 10:30 AM**
  - There are no alternate exam arrangements

- **Location – Soc/Anthro Testing Center**

- **Practice Exams are Posted**
  - B4-02-90 Exam 1A (Practice)
  - B4-02-91 Exam 1B Drawing (Practice)

- **YouTube Tutorials will be turned off at 10:00 am on Friday, May 27 and will remain off.**
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No Class Monday!!!!!
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Which of the following compounds are Lewis Bases?

A \[ BH_3 \]  
B  
C \[ \text{compound with } N \text{ and } H \]  
D \[ \text{compound with } O \text{ and } H \]  
E \[ \text{compound with } F \text{ and } H \]  

\[ \text{IS 22} \]

2016-05-24 Q2
Conformations of Alkanes

\[ \sigma \rightarrow H - - - - H \]

Side view

eclipsed conformation

\[ \sigma \rightarrow H - - - - H \]

more stable

Staggered conformation.

\[ \begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\sigma \rightarrow H & \quad \sigma \rightarrow H \\
\text{CH}_3 & \quad \text{CH}_3
\end{align*} \]

highest energy (\( \sim 5 \text{ kcal/mole} \))

syn-eclipsed

\[ \begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\sigma \rightarrow H & \quad \sigma \rightarrow H \\
\text{CH}_3 & \quad \text{CH}_3
\end{align*} \]

second lowest energy (\( \sim 1.8 \text{ kcal/mole} \))

gauuche

\[ \begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\sigma \rightarrow H & \quad \sigma \rightarrow H \\
\text{CH}_3 & \quad \text{CH}_3
\end{align*} \]

second highest energy

\[ \begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\sigma \rightarrow H & \quad \sigma \rightarrow H \\
\text{CH}_3 & \quad \text{CH}_3
\end{align*} \]

lowest energy

anti-eclipsed

\[ \begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\sigma \rightarrow H & \quad \sigma \rightarrow H \\
\text{CH}_3 & \quad \text{CH}_3
\end{align*} \]

anti-staggered
Which of the following drawings of ethane represent the staggered conformation (i.e., the lowest energy conformation)?

2016-05-24 Q3

2432
Which of the following drawings of butane represent the gauche conformation?
Which of the following drawings of butane represent the gauche conformation?
cycloalkanes

30 kcal
10 kcal
0 kcal

looks like envelope

axial

cellulose

starch
Which of the following hydrogen atoms are in the equatorial conformation?

2016-05-24 Q6 0675
Which of the following conformations is the lowest energy conformation of methylcyclohexane?

A

C

B

D

2016-05-24 Q7