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Organic Chemistry II CHM 3150 Dr. Laurie S. Starkey, Cal Poly Pomona **Chapter 22, Amines – <u>Practice Problems</u>**

Provide both common and IUPAC names for each compound: 1

$$\mathsf{CH_3CHNH_2CH_3} \quad (\mathsf{CH_3})_2 \mathsf{CHCH_2NH_2} \quad (\mathsf{CH_3})_3 \mathsf{CNH_2} \quad \mathsf{N}(\mathsf{CH_2CH_3})_3$$

Which is the strongest base? Which is the weakest base? Explain briefly. 2

$$H_2N$$
 CH_3
 Y
 H_2N
 CH_3
 CH_3
 CH_3

3 Predict the major product.

$$CH_3$$
 CH_3I CH_3I CH_3I

Predict the products X and Y and provide mechanisms for their formation.

5 Identify the best reagent(s) X and the major product Y.

OH
$$X$$

$$\begin{array}{c}
& \text{1) NaCN} \\
& \text{2) LiAlH}_4 \\
& \text{(+ workup)}
\end{array}$$

Provide the missing reagent X and predict the major products Y and Z.

$$H_2N$$
 Ph $\frac{\mathbf{X}}{+ \text{ pyridine}}$ Ph $\frac{1) \text{ LiAlH}_4}{2) \text{ H}_2O}$ Y $\frac{1}{H_2}$ Pd $\frac{1}{H_2}$ Pd

Which of the following reagents are suitable for the given transformation?

$$\bigcirc$$
Br \longrightarrow \bigcirc NH₂

- 2) NaOH, H2O, heat
- II. 1) NaN3; 2) H2, Pt
- III. 1) NaCN; 2) H₂, Pt
- IV. NaNH₂

Of the following reagents, which is BEST for the given transformation?

$$NH_3$$
 \longrightarrow NH_2

A) 1)
$$CH_2 = CH_2$$

2) H_3O^+

$$B) \qquad \underset{\text{(+ workup)}}{ \text{MgBr}}$$

C)
$$(CH_3CH_2)_2CuLi$$
 (+ workup)