(a) OK to give $\text{H}_2\text{O}^+$ as product
  By-product $\text{CH}_3\text{O}^-$ would like react
to give $\text{H}_2\text{O}^+$ + $\text{CH}_3\text{OH}$ (what sol'n's man has)
more stable
 conj. base-resonance

A few other examples of "mineral acids"
$\text{H}_2\text{SO}_4$; $\text{H}_3\text{PO}_4$; also OK to use "$\text{H}^+$" or
or "$\text{H}_3\text{O}^+$"

OK to do without pyridine!
acid chlorides very reactive
(on paper at least)

Better mechanism would avoid $\pm$ charges
 b/c rxn is under basic cond's (NaOH)

OK to do this w/o NaOH or 2nd equiv. of amine
an exams without
(b) 1. LAH must be used, not BH₃
   2. H₃O⁺

(c) to be clear, this should be "NIR"

CH₃MgBr doesn't react (not intended rxn)
with amide but instead reacts w/ H₃O⁺ to give CH₄

(a) LAH NOT BH₃

(e) Same note as 20.33(d) - a few pages back in this doc

(g) Alternate route

\[
\begin{align*}
\text{CH₃COOH} & \xrightarrow{1. \text{Mg}} \text{CH₃CO} \quad \text{↑DMP} \\
\text{CH₃Br} & \xrightarrow{2. \text{H}} \quad \text{CH₃Y} \\
& \xrightarrow{3. \text{H₃O⁺}} \quad \text{OH}
\end{align*}
\]

(f) OK to use KOH instead of Py.Δ

Same for 22.45(f)
(b) Alternate Synthesis

\[ \text{OH} \xrightarrow{\text{DMP}} \text{NH}_2 + \text{H}_2\text{O}\xrightarrow{\text{H}^+} \text{NH}_2 \]

From (a)

\[ \text{POCl}_3 \xrightarrow{1. \text{O}_3} \text{POCl}_3 \xrightarrow{2. \text{Zn, H}^+} \text{H} \]

\[ \text{N} \xrightarrow{\text{reductive amination}} \text{H} \xrightarrow{\text{NaBH}_4} \text{NaBH}_4 \]

(c) \[ \text{OH} \xrightarrow{\text{POCl}_3} \text{NH}_2 \]

1 less C

*Sol'n's manual for 24.36(c) uses Hofmann/Curtius RLG to remove C, these rxns not covered in 8B. Use ozonolysis instead!
No need to draw chair/3D conformations for this problem!

oxidizes only 2° alcohol \[\xrightarrow{\text{DMP}}\]

Everything else is the same

Everything same on A-D system. Only lactone (cyclic ester) is reduced