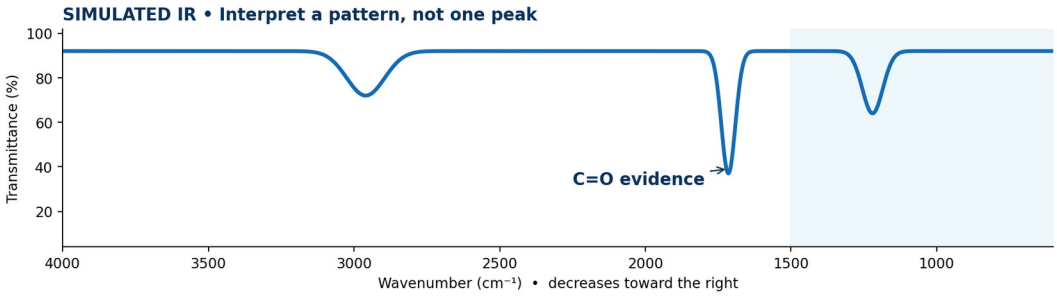
Reading IR Functional-Group Evidence

Classify patterns; explain what they support and what they do not establish.

STUDENT PRACTICE • SIMULATED DATA

Name: _____ Date: _____



All signals and numbers in this worksheet are simulated for teaching. GC uncorrected area percentages are not validated mole or mass compositions.

1. A simulated spectrum shows a strong absorption at 1740 cm^{-1}, another near 1240 cm^{-1}, and no broad O–H. What functional-group class is consistent? Name one limitation.

2. A simulated sample shows a broad 3300 cm^{-1} absorption, a C–O band near 1050 cm^{-1}, and no strong carbonyl band. Propose a likely class and one possible interference.

3. A strong narrow 1715 cm^{-1} feature appears. Which key bond class is supported? Does this identify a unique compound?

4. What spectral combination strongly supports a carboxylic acid?

5. On an IR transmittance plot, which direction does wavenumber increase? Do absorption bands point up or down?

6. An IR spectrum appears to match a ketone reference. What two additional checks would you do before naming the sample?