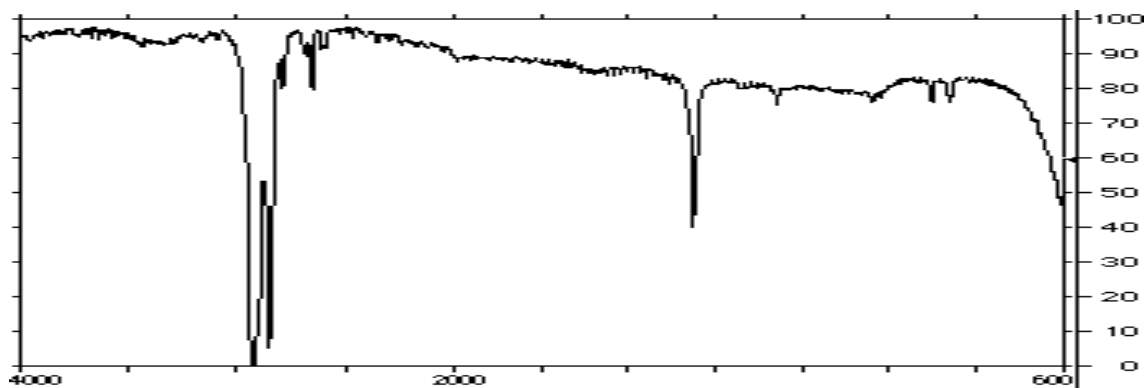
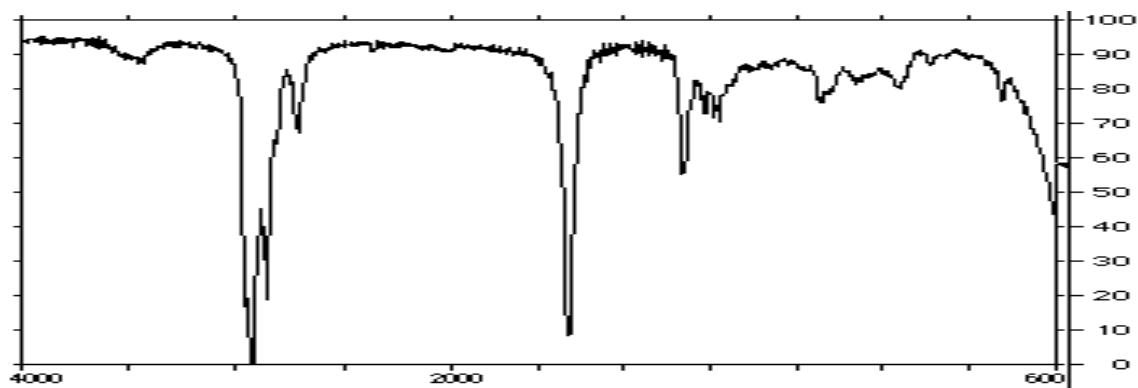


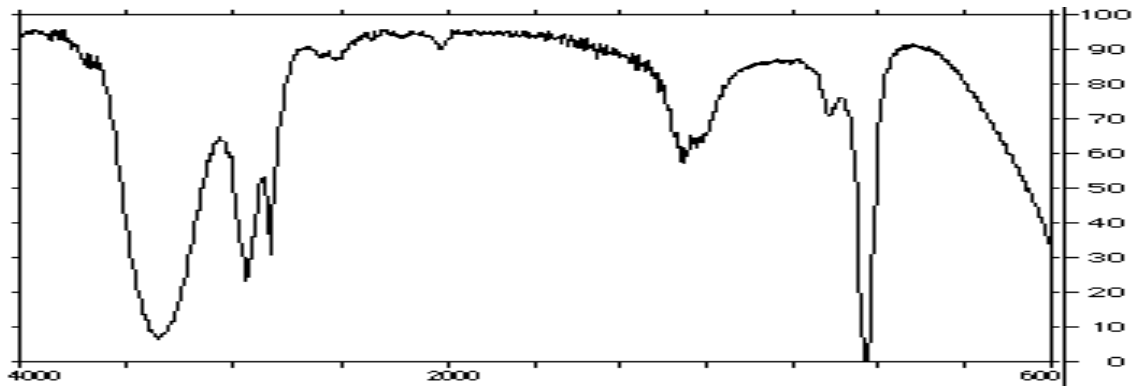
## Exercise on compound identification, functional groups, motions, and bond types.

Name \_\_\_\_\_

Answer the following questions to the best of your ability. Use the front and back of this sheet to record your answers and justifications.

1. You are given a series of organic samples A, B, and C. You are told that one compound is methanol,  $\text{CH}_3\text{OH}$ , another is cyclohexane,  $\text{C}_6\text{H}_{12}$ , and the third is octanal,  $\text{C}_8\text{H}_{16}\text{O}$ . You are to identify A, B, and C using the IR spectra. Justify your choices by telling what band was used to verify the identities, which functional group produced the band and whether the band comes from a stretch or a bend in the functional group.





2. You have the IR spectra for an organic liquid that was found on the clothes of a criminal defendant. The crime scene was heavily contaminated with a mixture of hydrocarbons, but there were no ketones, aldehydes, acids or alcohols present. Is the defendant's clothing contaminated with a hydrocarbon? Would this spectral evidence put the suspect at the crime scene? Justify your answer using IR functional group information.

