

Biochemistry Cume
February 2019
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There are 5 questions worth a total of 50 points. Typically pass is 50%.

1. Draw and describe the experimental process of bottom-up and top-down proteomics. Include 2 advantages and 2 disadvantages of each strategy (10 points).
2. Draw and describe how hydrogen deuterium exchange is used to determine protein-ligand interactions. (10 points)
3. Mass spectrometry of lipids is becoming more popular. A challenge in lipidomics is the analysis of structural isomers and position(s) of unsaturation. Design and experiment, with mass spectrometry detection, that addresses each of these challenges (15 points).
4. Carol Robinson is a pioneer in biological mass spectrometry. Name her current institution and a major contribution she has provided to the mass spectrometry field (5 points).
5. Ion mobility is another technique that is used for structural biology. Sometimes this technique is referred to as "gas phase electrophoresis". Draw and describe how ion mobility can be used to determine the structure of a biomolecule (10 points).