

TOPIC 20 EXERCISE 1 – CHROMATOGRAPHY

1. State the purpose of chromatography.
2. State the three types of chromatography and give their main features.
3. Explain how separation takes place in chromatography.
4. Explain how components are identified from a thin-layer chromatogram.
5. Explain how components are identified in a gas chromatogram.
6. Explain how the amino acids made when a protein is hydrolysed can be separated and identified.

SOLUTIONS

1. To separate components in a mixture and identify them
2. TLC – solvent moves up plate coated with solid; CC – a solvent moves down a column packed with solid; gas, under pressure at high temperature, is passed through a column, packed with a solid or coated by a liquid
3. The different components have different relative solubilities in the mobile phase and are retained by the stationary phase to different extents
4. Using R_f values
5. Using retention times and by mass spectrometry of the separated components
6. Separated by thin layer chromatography, located using developing agents such as ninhydrin or ultraviolet light, and identified by their R_f values