

Week 4 Assignment

- Photoelectric colorimeters are useful for rough estimates because
 - They employ filters and mirrors for wavelength selection.
 - They employ prisms and mirrors for wavelength selection
 - They employ interference filters and mirrors for wavelength selection.
 - They employ gratings and mirrors for wavelength selection.
- Simultaneous spectroscopic analysis for two species can be employed provided, their λ_{\max} differs by
 - 10 nm
 - 20 nm
 - 30 nm
 - 50 nm
- Derivative spectroscopy is useful for quantitative analysis
 - Only when the signal to noise ratio is greater than 3.
 - Only when the absorption peaks are prominent.
 - Only when the absorption peaks are not prominent.
 - Only when the absorption peaks are immaterial.
- Photometric titrations are better for chemical analysis than normal titrations because
 - They work in ppm level.
 - The end point can be overshoot without affecting the accuracy.
 - Different types of complexes can be analyzed accurately.
 - All of these.
- Nanomaterials can be characterized by using a modular accessory to spectrophotometers. This can be done by :
 - Reflectance spectrometry.
 - Nephelometry
 - Turbidimetry
 - None of these
- All precipitation reactions can be modified into turbidimetric or nephelometric methods. State whether this is true or false.
- In turbidimetry the precipitate can be stabilized by adding
 - Gelatin
 - Gum arabic
 - Polyvinyl alcohol
 - Any of these
- A factory producing bleached craft paper for packing purpose. They have a spectrophotometer and a reflectance attachment. However they do not have a standard for comparing the white color. Suggest a suitable standard
 - Magnesium oxide
 - Titanium dioxide
 - Calcium fluoride
 - Any of these
- The turbidance of a precipitate is proportional to the :
 - Square of the particle diameter
 - Square root of the particle diameter
 - Cube of the particle diameter
 - Cube root of the particle diameter
- Which method of composition determination gives a peak
 - Jobs method of continuous variation.
 - Slope ratio method
 - Yoe's method.
 - All of these.