Assignment B

1. Determine the UV spectrum for a solution of 10^-3 M of 3-methyl-2-butanol in toluene. The molar absorptivity of 3-methyl-2-butanol is 1.2 x 10^4 M^-1cm^-1 at a wavelength of 250 nm. Calculate the concentration and absorbance of the solution.

2. A compound with a molecular mass of 150 g/mol is dissolved in 100 mL of water to give a concentration of 0.1 M. The solution is then subjected to a series of dilutions to give concentrations of 0.01, 0.001, 0.0001 M. Calculate the absorbance of the solution at a wavelength of 300 nm for each concentration.

3. A series of experiments were performed to determine the absorbance of a solution of 3-methyl-2-butanol in toluene at different wavelengths. The absorbance values were obtained for wavelengths of 240, 250, 260, and 270 nm. Determine the molar absorptivity of 3-methyl-2-butanol at these wavelengths.

4. A solution of a compound with a molecular mass of 150 g/mol is placed in a 1 cm pathlength cell and its absorbance is measured at a wavelength of 250 nm to be 0.3. Calculate the concentration of the solution.

5. A compound with a molecular mass of 150 g/mol is dissolved in 100 mL of water to give a concentration of 0.1 M. The solution is then subjected to a series of dilutions to give concentrations of 0.01, 0.001, 0.0001 M. Calculate the absorbance of the solution at a wavelength of 300 nm for each concentration.

6. A series of experiments were performed to determine the absorbance of a solution of 3-methyl-2-butanol in toluene at different wavelengths. The absorbance values were obtained for wavelengths of 240, 250, 260, and 270 nm. Determine the molar absorptivity of 3-methyl-2-butanol at these wavelengths.

7. A solution of a compound with a molecular mass of 150 g/mol is placed in a 1 cm pathlength cell and its absorbance is measured at a wavelength of 250 nm to be 0.3. Calculate the concentration of the solution.