PHYSICI-CHEMICAL STUDIES ON COMPLEXATION OF SOME POLLUTANT METAL IONS FOR THE EAST OF KALIOBYA

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1-Chapter(1) includes a literature survey of the previous studies on azodyes and their complexes with dfferent metal ions.Also this chapter contains a literature survey on the thermal studies whichwere done on solid complexes of azo dye .2-chapter (II) includes The experimental part as the chemicalpreparation of solutions of the complexes for azo dyes with some transitionmetal ions . the method of chelation of M-LIt comprises also information about instruments which were used forspectrophotometric, conductometric, potentiometric IR, as well as thermalanalysis.3- chapter (III) includes the results and discussions and consists of twopartsThe first part studies on the spectral characterisation of the ligand .where the electronic absorption spectra were studied in different universal buffer solution for determine their ionisation constants using three different methods.The chapter includes also studies of complexes in solution where threedifferent methods were disscussed:-The conductimetric titration which was done to determin the stoichimetricratio of complexs formed using diluted concentration of ligands (1x10-3M) in 50% (V/V) alcoholic solution.-The potentiometric titrations which studied using 0.1 M HNO3 and 1.0 M KNO3 as medium . from the data obtained , the ionization constants of the complexes formed were obtained.-The spectrophotometric studies of metal complexes were also performed to determine the optimum condition for each complex and after that the stability constant of such complexe was calculated using two different spectrophotometric methods .Also Beer’s law and Ringbom ranges were determined and the effect of foreign ions on the complexes fornmed were studied. The results shows that the metal ions can be determined in micro grams that for Al3+, Cd2+, Cr3+, and Pb2+.The second part includes, studies the solid chelates viz elemental analysis, TG, DTA, IR, and electronic absorption spectra in nujol mull and DMF solution. The results deduced that method of band through M-L and the molecular strcture areOH0 2 OH T 2Pb OH2 r’NN OH2 °NNO3- H2OnLigand I CN° =7 (Pentagonal bi pyramid)OH2 ONPbN0 HC CH3N C 0CH3nN 0 3 H 2 0Ligand ii CN° =4 (Square planar)0 OH 2 OHy 2Pb-o-OH2 N OH2 OHN /CCrCH NHCH3NO3-4H20Ligand HI CN° =7 (Pentagonal bi pyramid)