

Semester 6	CL 601	
		Tentative Number of days in semester: 24
S No.	Experiment	No. of days
<b>THEME</b>	<b>Fluorescence Spectroscopy</b>	
1	Determination of fluorescence quenching rate constant (k <sub>q</sub> ) using Stern-Volmer plot: Elucidation of mechanism of collisional and static quenching	1
2	Characterization of intermediate states of protein using fluorescence spectroscopy	1
<b>THEME</b>	<b>Ligand-protein interaction</b>	
3	Determination of association constant (K <sub>a</sub> ) and binding capacity (n) of drug-protein interaction using difference spectroscopy.	1
<b>THEME</b>	<b>Protein folding and aggregation</b>	
4	Determination of T <sub>m</sub> of protein unfolding.	1
5	Determination of protein aggregation kinetics parameters. k <sub>app</sub> , V <sub>max</sub> , V <sub>i</sub> , amplitude and lag time	1
<b>THEME</b>	<b>Physical properties of nucleic acid</b>	
6	To estimate the melting temperature of DNA by spectroscopic methods.	2
<b>THEME</b>	<b>Labeling Chemistry</b>	
7	Protein labeling with fluorescent dye FITC	1
<b>THEME</b>	<b>Crystallization of proteins</b>	
8	Crystallization of commercial HEW-Lysozyme and draw the phase diagram to identify the nucleation zone for the protein	2
<b>THEME</b>	<b>Conformational analysis of biomacromolecules</b>	
9	Determination of Helix-coil transitions in polypeptides: Conformational changes in poly-γ-benzyl-L-glutamate (PBG) in mixed solvent of dichloro acetic acid (DCA) and ethylene dichloride using polarimeter.	1
10	Conformational characterization of proteins and nucleic acids using circular dichroism spectropolarimeter.	1
11	Secondary structure prediction of proteins from CD data using different structure prediction softwares.	1
<b>MID SEMESTER EXAMINATION</b>		
12	Quantitative determination of DNA-ligand binding using fluorescence	1
13	Assessment of the purification of a protein by ion exchange and GFC	1
14	Spectroscopic measurement of the redox potential of cytochrome C	1
15	Evaluation of the Hill coefficient from Scatchard and Klotz plots	1
<b>THEME</b>	<b>Thermodynamic analysis of biological processes</b>	
16	Determination of equilibrium constant (K) and van't Hoff's enthalpy (ΔH <sub>VH</sub> ) N-acetylglycosamine (NAG) and lysozyme interaction using fluorescence spectrophotometer	1
17	Determination of melting temperature (T <sub>m</sub> ), calorimetric enthalpy (ΔH <sub>cal</sub> ), van't Hoff's enthalpy (ΔH <sub>VH</sub> ) and heat capacity (ΔC <sub>p</sub> ) of lysozyme unfolding using Differential scanning calorimeter.	1
18	Determination of binding constant (K <sub>a</sub> ), enthalpy (ΔH), entropy (ΔS) and reaction stoichiometry of drug-serum albumin association.	1
19	Thermodynamics characterization of intermediate states of protein using isothermal titration calorimetry	1
20	Repeats	3
<b>END SEMESTER EXAMINATION</b>		<b>24</b>