Contents

Physicochemical Parameters and Preformulation Studies (A-Group Experiments)

1.	Development of standard curve by UV-spectrophotometry	3
2.	Statistical validation of standard curve	6
3.	Determination of pK_a by half-neutralization method	11
4.	Determination of pK_a by UV-visible spectrophotometry	15
5.	Determination of partition coefficient by shake flask method	18
6.	Determination of particle size by gravity sedimentation method	22
7.	Determination of product shelf-life by accelerated stability testing	28
8.	Development of phase-solubility diagram	34
9.	Preformulation studies for solid dispersion	38
10.	Prediction of skin permeability from simple physicochemical	
	parameters	41

Development and Evaluation of Controlled Release Dosage Forms (B-Group Experiments)

11.	Development of sustained release matrix tablet	46
12.	Evaluation of precompression parameters of tablets	49
13.	Evaluation of sustained release matrix tablets	53
14.	Development of controlled release microspheres by	
	solvent evaporation method	59
15.	Development of albumin microspheres of sparingly water-soluble	
	drug by thermal denaturation process	62
16.	Microencapsulation of a liquid drug using the simple	
	coacervation technique	65
17.	Evaluation of drug-loaded microspheres	68
18.	Development of monolithic osmotic tablet for highly	
	water-soluble drug using controlled porosity membrane	73
19.	Development of monolithic osmotic tablet of a highly	
	water-insoluble drug using asymmetric membrane	76
20.	Evaluation of osmotic drug delivery systems	80
21.	Development of solid dispersion by melting solvent method	84

	Evaluation of solid dispersion	86
	Development of fast dissolving tablets by sublimation method	89
	Evaluation of fast dissolving tablets	. 92
25.	Formulation of controlled release gel containing drug-loadec capsules	d micro 95
	Experiments Related to Biopharmaceutics (C-Group Experiments)	
		100
	Mathematical models of drug dissolution: Noyes-Whitney's law	100
27.	Mathematical models of drug dissolution: Hixson-Crowell theory	104
28.	Drug absorption: Determination of absorption profile of	
	paracetamol using saliva	107
29.	Factors affecting drug absorption: pH partitioning effect	111
30.	Protein binding by equilibrium dialysis	114
31.	An experiment on competitive protein binding	117
32.	Effect of protein binding on drug distribution	120
33.	Determination of urinary excretion of paracetamol using	
	second derivative spectrophotometry	124
34.	Prediction of in vivo plasma concentrations using in vitro	
	dissolution data (convolution method)	127
35	Organoleptic evaluation of dosage forms by crossover study	134
	endices	141
ρρε		1-11