[Time: 3 hours] **[Marks 80]**

NB: 1. All questions are compulsory
2. Figures to the right indicate full marks

1 a.	Classify dispersed systems. Comment on role of surface free energy in suspension stability.		3
b.	Comment on physiological factors affecting skin penetration.		2
c.	Enlist desirable features of suppositories. Give disadvantages of suppositories as dosage forms.		3
d.	Discuss problems/hazards involved in handling of blood products.		2
e.	Enlist the various quality control tests on ligatures. Discuss tensile strength determination of catgut.		3
f.	Discuss pharmaceutical applications of emulsions.		2
2a.	Enlist various quality control tests for suspensions. Elaborate with suitable diagram large scale manufacturing of suspensions.		4
	OR		
	Enlist various quality control tests for emulsions. Elaborate on any one equipment used in emulsion production.		
b.	Enlist properties of an ideal suppository base. Elaborate on any one suppository base.		4
c.	Explain and classify non-absorbable sutures. Elaborate on any one non-absorbable suture of natural origin.		3
3a.	Explain the following (i) DLVO Theory (ii) Schulze Hardy Rule		4
b.	Discuss Plasmapheresis		4
	OR		
	Discuss Gamma Globulin preparations.		
c.	Enlist various Quality control tests for suppositories. Explain any one test.		3
4a.	Discuss salient features of raw materials used in semisolid preparations.		4
b.	Classify Emulsifying agents. Explain selection of emulsifier by HLB method.		4
c.	What are plasma volume expanders? Discuss the salient features of plasma volume expanders with suitable examples.		3
	OR		
	Discuss steps involved in production of clinical grade Dextran in brief.		
5a.	Enlist various methods for preparation of suspensions. Explain any one method in detail.		4
b.	Explain large scale manufacturing of any one semisolid preparation.		3
c.	Explain salient features of Theobroma oil as a suppository base.		4
	OR		
	Describe any two large scale manufacturing techniques of suppositories.		
6a.	Discuss manufacturing and processing of catgut.		3
b.	Elaborate on physical stability of emulsions.		4
	OR		
	Elaborate on preservation of emulsions.		
c.	Classify Penetration enhancers with examples. Discuss any two methods to evaluate skin penetration.		4

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