Name:			
Enrolment No:			

UPES
End Semester Examination December 2023

Course: Novel Drug Delivery System   Semester: VII
Program: B. Pharm   Duration: 03 Hours
Course Code: BP704T   Max. Marks: 75
Instructions: Attempt all questions

SECTION A
(20 Q x 1 M = 20 Marks)

S. No.	Attempt all questions from section A.	Marks	COs
Q 1	List any two advantages of novel drug delivery systems.	1	CO1
Q 2	Define controlled release drug delivery system.	1	CO1
Q 3	Mucoadhesion between hydrogels and mucosal membrane includes a) Wetting and swelling b) Interpenetration of the bioadhesive polymer c) Formation of weak chemical bonds d) All the above	1	CO1
Q 4	Differentiate between sustained and controlled release drug delivery systems.	1	CO1
Q 5	Skin permeability kinetics is best explained by: a) Fick's first law of diffusion b) Noyes–Whitney equation c) Higuchi's law of diffusion d) None of the above	1	CO2
Q 6	Mention different pathways of drug penetration through skin?	1	CO2
Q 7	Which agent is used to generate a constant positive pressure for zero-order release a) Osmotic agent b) Propellant agent c) Both d) None of the above	1	CO2
Q 8	Below are commonly used bioadhesive materials except a) Tragacanth b) Chitosan c) Sodium alginate d) Sodium bicarbonate	1	CO2
Q 9	Write two evaluation parameters for transdermal patches.	1	CO2
Q 10	More than 95% of drugs are absorbed by a) Dissolution b) Passive diffusion c) Active diffusion	1	CO2

	d) Super case II transport		
Q 11	Osmotic pressure-controlled system provide a) Zero order release b) First order release c) Second order release d) None of the above	1	CO2
Q 12	Write two major disadvantages of nanoparticle delivery.	1	CO2
Q 13	Needle-free Jet Injectors have advantages, EXCEPT a) Pain-free delivery b) Accurate dosing c) Improved bioavailability d) Cause infection from splash back of body fluids	1	CO3
Q 14	Enlist evaluation parameters for transdermal patches.	1	CO3
Q 15	Define depot formulations.	1	CO3
Q 16	Example of the excipient used to generate gas in a floating drug delivery system is: a) Zinc oxide b) Sodium bicarbonate c) Sodium alginate d) Sodium chloride	1	CO3
Q 17	Enlist any two limitations of nano-particulate drug delivery systems.	1	CO4
Q 18	Alzet is a a) Osmotic pressure activated system b) Vapour pressure activated system c) Magnetically activated system d) Hydration activated system	1	CO4
Q 19	_____ is used as chemical cross-linking agent in preparation of alginate beads?	1	CO4
Q 20	X-ray diffraction (XRD) analysis is carried out to determine _____ of a compound.	1	CO4
SECTION B (20 Marks) **(2 Q x 10 M = 20 Marks)**			
	Attempt any two questions from section B.	**Marks**	
Q 1	Classify different approaches to formulate gastro-retentive drug delivery systems? Discuss in detail about any one approach in detail.	4+6	CO1
Q 2	Define microencapsulation? Discuss in detail about coacervation nanoparticles phase separation method of microencapsulation.	2 + 8	CO3
Q 3	Explain any one method of liposome preparation. Discuss various evaluation parameters of liposomes.	4+6	CO4

	SECTION-C (35 Marks) (7 Q x 5 M = 30 Marks)		
	Attempt any seven questions from section C.	**Marks**	
Q 1	Briefly describe potential advantages of transdermal drug delivery systems.	**5**	**CO1**
Q 2	Classify polymers with examples based on the source and structure.	**2.5+2.5**	**CO1**
Q 3	Write a note on transdermal reservoir system.	**5**	**CO2**
Q 4	Enlist factors affecting mucoadhesion.	**5**	**CO2**
Q 5	Describe formulation consider for buccal delivery.	**5**	**CO2**
Q 6	Write a note on intrauterine devices. Enlist their two advantages.	**3+2**	**CO3**
Q 7	What are various factors affecting drug absorption?	**5**	**CO3**
Q 8	Briefly describe drug targeting by monoclonal antibody.	**5**	**CO4**
Q 9	Define implantable therapeutic systems. What are the ideal requirements of implants?	**2+3**	**CO4**