

Programme: B. Pharm
Course: Novel Drug Delivery System
Course Code: BP704T
Enrolment no. _____
Full Marks: 75
Time: 3 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Objective Type Questions			
	<p>i. Microencapsulation is defined as a process of enclosing solids, liquids, or gases within: a) Metallic material b) Polymeric material c) Ceramic material d) Composite material.</p> <p>ii. The materials enclosed within microcapsules are known as: a) Wall materials b) Shell materials c) Core materials d) Membrane materials.</p> <p>iii. Microspheres particularly refer to microparticles that are: a) Cubical b) Cylindrical c) Spherical d) Irregular.</p> <p>iv. Microparticles with a core surrounded by a distinct coating are called: a) Microspheres b) Microcapsules c) Nanoparticles d) Liposomes.</p> <p>v. Which type of microcapsule contains multiple cores enclosed within a single shell? a) Mononuclear b) Polynuclear c) Matrix d) Reservoir</p> <p>vi. Which of the following is NOT an advantage of CRDDS? a) Reduced side effects b) Improved patient compliance c) Faster onset of action d) Enhanced treatment effectiveness</p> <p>vii. Which drug delivery system releases medication at a predetermined time? a) Sustained release b) Extended release c) Delayed release d) Prolonged release</p> <p>viii. What is the defining characteristic of a sustained-release dosage form? a) Releases the drug immediately b) Reduces dosing frequency at least twofold c) Is only available for intravenous administration d) Releases the entire drug dose at once</p> <p>ix. Which type of modified release aims to slow drug absorption and avoid high peak plasma concentrations? a) Delayed release b) Prolonged release c) Sustained release d) Extended release</p> <p>x. Which of the following is a DISADVANTAGE of CRDDS? a) Improved bioavailability for some drugs b) Potential for dose dumping c) Reduced dosing frequency d) Minimised drug accumulation</p> <p>xi. Which of these is NOT listed as a component of a transdermal drug delivery system (TDDS)? a) Polymer Matrix b) Drug c) Permeation Enhancers d) Bioadhesive Polymers</p> <p>xii. What is NOT listed as an advantage of TDDS? a) Increased patient compliance b) Avoidance of first-pass metabolism. c) Controlled and constant drug administration. d) Suitable for all types of drugs.</p> <p>xiii. TDDS are also known as: a) Tablets b) Capsules c) Injections d) Patches</p> <p>xiv. What is a disadvantage of TDDS? a) They avoid first-pass metabolism b) They offer controlled drug administration c) Possible skin irritation d) Increased patient compliance</p> <p>xv. What is an example of a natural polymer used in TDDS? a) Polyethylene b) Polypropylene c) Cellulose derivatives d) Polyvinyl chloride</p> <p>xvi. What is one advantage of ODDS? a) Provides sustained and controlled drug delivery b) Easy to terminate dosage during emergencies c) Does not interfere with vision d) Always easy to place and remove</p> <p>xvii. Which layer of the eye is the sclera? a) Innermost b) Outermost c) Middle d) None of the above</p> <p>xviii. What gelatinous substance occupies 80% of the eyeball? a) Aqueous humor b) Vitreous humor c) Choroid d) Sclera</p> <p>xix. Which membrane separates the retina and the vitreous? a) Bruch's membrane b) Internal limiting membrane c) Retinal pigment epithelium d) Blood-retinal barrier</p> <p>xx. What is the main driving force for outward transport of molecules from the subretinal spaces? a) Diffusion b) Active transport c) Hydrostatic and osmotic pressure d) None of the above</p>	CO1	Remember	1 x 20 = 20
Section II				
2. Short Answer type questions.				
a	What are some advantages of using controlled release drug delivery systems?	CO1	Remember	
b	How does microencapsulation affect patient compliance?	CO2	Understand	

c	What is permeability coefficient? What are the routes of drug penetration in TDDS?	CO3	Understand	7 x 5 = 35
d	What are the structural components of liposomes? (Explain with diagram)	CO4	Remember	
e	Describe the structure of eye with a neat diagram.	CO5	Remember	
f	What are the advantages and disadvantages of ocular drug delivery system?	CO5	Understand	
	or			
g	Discuss the advantages, disadvantages and ideal properties of IUDs.	CO5	Understand	
	What are the components of niosomes? Write its salient features.	CO4	Remember	
	or			
	Write a short notes on polymer used for nanoparticles.	CO4	Understand	
Section III				
Long Answer Type questions				
3	Argue about Transdermal drug delivery system. What are the advantages and disadvantages of these drug delivery system?	CO3	Evaluate	2 x 10 = 20
	or			
4	Distinguish the approaches for Gastro Retentive Drug Delivery System (GRDDS).	CO3	Analyze	
	How can the disadvantages of microencapsulation be mitigated in pharmaceutical applications?	CO2	Analyze	
	or			
	Evaluate the effectiveness of microencapsulation in targeted drug delivery systems.	CO2	Evaluate	

Course Outcomes (CO):

CO1: To understand the drug delivery principles.

CO2: To develop basic knowledge on the various drug delivery techniques.

CO3: To analyze and optimize various drug formulations

CO4: To determine clinical applications of targeted drug delivery system.

CO5: To analyze the biocompatibility and safety of ocular and intrauterine delivery systems.