F.Y.M.Pharm Pharmaceutics 09/04/25 Sem-I

Time: 3 Hours **Marks: 75**

Q. 1 Attempt all multiple-choice questions (MCQ) **20M**

1. **Which of the following is a major disadvantage of rate-controlled drug delivery systems**
   a Difficulty in maintaining a constant drug concentration
   b The potential for dose dumping or burst release
   c Improved patient compliance
   d Easier manufacturing processes

2. **Which of the following factors does NOT influence the release rate of a controlled release formulation?**
   a The size and shape of the dosage form
   b The pH of the gastrointestinal tract
   c The patient's age and gender
   d The presence of food in the stomach

3. **Bulk erosion is also referred as**
   a Heterogeneous erosion
   b Homogeneous Erosion
   c Surface Erosion
   d Sheet Erosion

4. **Which of the following is an unsuitable application for rate-controlled drug delivery systems?**
   a Chronic diseases requiring continuous drug administration
   b Drugs with a low permeability
   c Drugs with low solubility in water
   d Acute conditions requiring rapid drug action

5. **Identify which one of the following is a biodegradable polymer**
   a Polystyrene
   b Poly vinyl alcohol
   c Polylactic acid
   d Polypropylene

6. **Progestasert IUD is an example of**
   a Polymer membrane permeation -controlled release drug delivery system
   b Polymer matrix diffused-controlled release drug delivery system
   c Microreservoir permeation -controlled release drug delivery system
   d Microreservoir partition -controlled release drug delivery system

7. **In activation modulated drug delivery systems which of the following is activated by Physical process**
   a Enzyme activated DDS
   b Osmotic pressure activated DDS
   c pH activated DDS
   d Hydrolysis activated DDS

8. Sodium carbonate used in GRDDS helps in producing

a low density
b High density systems
c effervescence
d bioadhesion

9. The approach not useful to increase gastric retention time for Gastro retentive drug delivery system

a High density systems
b Effervescent systems
c Floating systems
d Compressing systems

10. Narrow absorption window is a criteria for drug selection to formulate

a Transdermal drug delivery System
b Ocular drug delivery System
c Gastro retentive drug delivery System
d Topical drug delivery System

11. _____ systems have a bulk density lesser than gastric fluids

a Floating
b High density
c Swelling
d Mucoadhesive

12. SODI in Ocular drug delivery stands for

a Soluble Opthalmic Drug Implant
b Sustained Opthalmic Delivery Insert
c Soluble Opthalmic Drug Insert
d Sustained Opthalmic Delivery Implant

13. In ocular drug delivery system effectiveness of liposomes depends on following factors except

a Colour
b Encapsulation efficiency
c Size
d Charge of liposome

14. Identify the erodible insert from the following

a Ocusert
b Lacrisert
c Contact Lens
d Diffusional inserts

15. What type of polymer is suitable for TDDS

a Reactive
b Inert
c Chemcially active
d Hydrophobic

16. What is the in-vitro drug release study method for transdermal formulations

a Paddle over-disc method (USP device V)
b Shake flask method
c Franz cell method
d Diffusion cell method

17. What is the purpose of the folding endurance test

a Evaluate patch durability
b Assess adhesive strength
c Measure peel adhesion
d Determine drug content

18. Which technique is commonly used for the parenteral administration of peptide and protein drugs

a Sublingual administration
b Oral tablets
c Intravenous injection
d Transdermal patches

19. What is the role of protease inhibitors in the context of peptide drug delivery?

a To improve the absorption of peptides through the skin
b To prevent the degradation of peptides in the gastrointestinal tract
c To reduce the size of the peptide drug molecules
d To promote the enzymatic cleavage of the peptide at specific sites

20. Proteins/peptides are more likely to undergo proteolytic attacks

a Upon the absence of stereoisomer
b When the rate and site of hydrolysis of peptide bonds are affected
c Due to low bioavailability
d Increased side-chain length of the peptides

Q 2. Attempt any two question

i	Classify different types of GRDDS systems and discuss in detail any two types with examples	10M
ii	Explain various methods used to Formulation of diffusion controlled delivery system	10M
iii	Elaborate on mechanisms of mucoadhesion and describe the evaluation tests of Buccal drug delivery systems	10M

Q 3. Attempt any seven questions

i	Discuss about biodegradable and natural polymers.	5M
ii	Enlist types of rate controlled delivery systems and explain ALZET implantable pump.	5M
iii	Discuss components of TDDS and write its advantages over conventional drug delivery.	5M
iv	Describe in detail the problems associated with protein and peptide drug delivery	5M
v	Briefly discuss enzyme activated drug delivery systems.	5M
vi	Enlist types of erodible Ocular Inserts and explain in detail any two of them.	5M
vii	Write in brief about any two strategies for protein and peptide drug delivery system.	5M
viii	Elaborate on polymers used in ocular drug delivery systems	5M
ix	Discuss in brief about chemical penetration enhancers to improve TDDS and their mechanism	5M

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