

Master of Pharmacy First Year First Semester Examination 2025

Drug Delivery System

Time: Three hours

Full Marks: 75

Answer any FIVE questions taking at least ONE question from each group

Group A

1. Classify rate-controlled drug delivery systems with example. Write the equation with description for drug release from the polymer membrane permeation-controlled drug delivery system. Write in detail about Ocusert system. $5+5+5=15$

2. How lacrimal fluid and tear film act as barrier for ocular drug delivery. How mucoadhesive polymers and ocular in situ gel overcome the ocular barriers. $7+8=15$

Group B

3. "Biomaterials are often modified for drug targeting" -Elaborate the statement. Discuss the biomaterial properties in designing the sustained release drug delivery system. What is dissolution controlled drug delivery system? $(5+7+3)$

4. a) What do you mean by enzyme triggered drug delivery. (3)

b) What do you mean by additive manufacturing? Discuss the process flow of the additive manufacturing. What do you mean by drop-on-demand based inkjet printing? $(2+4+6)$

Group C

5. i. Draw the Structure of skin and discuss about route of penetration. ii. Classify Different approaches of TDDS. And explain with a diagram (each one). $5+(5+5)=15$

6. i. Write the methods to prevent denaturation of protein. ii. Explain about the non-parental routes of protein drug delivery. ii. Write in details about the evaluation of protein and peptide drug delivery. $5+5+5=15$

Group D

7. Give an overview on bio-adhesive formulations. 15

8. Briefly describe the mechanisms involved in different kinds of floating drug delivery systems. 15