

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**M. Pharm. Winter 2022 - 23 Examination**

**Semester: 1****Subject Code: MPH102T****Subject Name: Drug Delivery System****Date: 15/03/2023****Time: 10:00am to 1:00pm****Total Marks: 75****Instructions:**

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

**Q.1 Essay Type Questions. (any 2 out of 3) (15 Marks Each) (30)**

1. a. Describe the factors affecting Controlled release drug delivery systems.  
b. Classify different activation modulated drug delivery systems? Discuss the osmotically activated drug delivery with suitable examples.
2. a. Classify different strategies for GRDDS. Explain floating drug delivery systems in detail.  
b. What is protein and peptide drug delivery? What are the different approaches to improve the oral delivery of proteins and peptides?
3. Which is an ideal drug candidate for TDDS? Classify and discuss various approaches for TDDS with formulation components.

**Q.2 Short Essay Type Questions. (any 5 out of 6) (5 Marks Each) (25)**

1. Classify polymers and give the importance of polymers in development of novel drug delivery systems.
2. Explain the feedback regulated drug delivery systems with suitable examples.
3. Describe Mucoadhesive drug delivery system with the mechanism of bioadhesion. Give its importance in BDDS.
4. Enlist the different barriers for drug permeation in Ocular drug delivery system and discuss the strategies to overcome these barriers.
5. Which are the barriers in protein and peptide drug delivery? Discuss in detail.
6. What is Vaccine drug delivery? Discuss the significance of Mucosal and Transdermal delivery of vaccine.

**Q.3 Short Answers. (2 Marks Each) (20)**

1. What is the scope of 3D printing in pharmaceutical sciences?
2. Brief on customized drug delivery systems.
3. Write in short about pH activated drug delivery system with suitable example.
4. What is Enzyme activated drug delivery system?
5. Which is an Ideal Drug candidate for GRDDS?
6. Write the merits and demerits of BDDS.
7. How permeation enhancers play important role in TDDS?
8. Give the evaluation parameters for TDDS.
9. What are the advantages of protein and peptide drug delivery?
10. Write a short note on Single shot vaccines.