BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MPHARM **SEMESTER: 1st**
BRANCH: PHARMACY **SESSION: MO 2025**

SUBJECT: MPH102T DRUG DELIVERY SYSTEM

TIME: 3.00 Hours **FULL MARK: 75**

INSTRUCTIONS:

1. The missing data, if any, may be assumed suitably.
2. Before attempting the question paper, be sure that you have got the correct question paper.
3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
5. Answer any five questions.

1a.	Discuss the characteristics of drugs that are not suitable for peroral sustained release forms. Discuss the drug parameters to be considered for sustained delivery dosage forms	[7]
1b.	Discuss in details about Osmotic pressure activated systems. Discuss with graphical representation the working of a membrane and matrix system w.r.t drug release.	[8]
2a.	Explain the working principle of Bioerosion regulated and Bioresponsive drug delivery systems. Discuss the working principle of magnetically controlled drug delivery systems	[7]
2b.	Discuss in details with diagrams Hydrodynamic pressure activated systems and Vapour Pressure activated systems.	[8]
3a.	Discuss the barriers for ocular delivery w.r.t Cornea, Noncorneal, BAB and BRB	[7]
3b.	Discuss the approaches for improving ocular bioavailability.	[8]
4a.	Discuss the different Approaches for formulating GRRDS in details	[7]
4b.	Discuss the barriers for buccal delivery and also the approaches for effective buccal delivery	[8]
5a.	Explain the structure of the skin and the barriers it presents to transdermal drug delivery. How do these barriers influence the design of transdermal drug delivery systems?	[7]
5b.	Discuss the role of penetration enhancers in transdermal drug delivery systems. Describe the formulation approaches and evaluation methods used for designing effective transdermal patches	[8]
6a.	Explain the various barriers faced in the delivery of proteins and peptides. How do these barriers affect their bioavailability and therapeutic efficacy?	[7]
6b.	Discuss the formulation strategies for protein and peptide delivery systems. Describe the evaluation methods used to assess the effectiveness protein and peptides.	[8]
7a.	Discuss the advantages and disadvantages of transdermal techniques used for the delivery of vaccines.	[7]
7b.	Explain in detail the design and mechanism of microneedle-assisted vaccine delivery.	[8]

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