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

CLASS: BPHARM **SEMESTER: VIIth /ADD**
BRANCH: PHARMACY **SESSION: MO 2025**

SUBJECT: BP704T NOVEL DRUG DELIVERY SYSTEMS

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.**
4. **This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.**

PART-I
Objective types questions (Instruction: Answer all questions)

Q1. (10 x 2 = 20 Marks)

A. Highlight difference between Sustained and Conventional drug delivery systems [CO1]

B. Enlist the drug characteristics which are not suitable for peroral sustained release dosage forms. [CO1]

C. Enlist the advantages and limitations of IUDs [CO1& CO2]

D. Identify the limitations of Nasopulmonary drug delivery systems [CO1]

E. Define the wetting theory of mucoadhesion [CO1]

F. Summarize the advantages and limitation of microencapsulation [CO2]

G. Classify Microparticulate systems citing example (CO2+CO3)

H. What are the characteristics of ideal mucoadhesive polymer? (CO1+CO2)

I. Enlist the advantages and limitations of implantable drug delivery systems. (CO1+CO2)

J. Elaborate the role of phase coacervation in formation of microcapsules (CO3+CO4)

PART-II
Short Answers
(Instruction: Answer seven out of nine questions)

(7 x 5 = 35 Marks)

Q2. Discuss the factors affecting Nasal drug absorption. [CO2]
Q3. Discuss the following systems with a schematic diagram for both: {CO2+CO3]
   a. Hydrodynamic Pressure activated drug delivery system
   b. Vapour Pressure activated Drug Delivery system
Q4. Discuss Bioerosion regulated system and Bioresponsive drug delivery system with schematic diagrams wherever required. [CO3+CO4]
Q5. Discuss the factors affecting oral sustained release dosage form design. [CO3]
Q6. Discuss the corneal and noncorneal barriers for ocular delivery. Also discuss the approaches to improve ocular bioavailability. [CO2+CO3]
Q7. Write a short note on osmotic pressure and vapour pressure activated implant with suitable example. (CO2+CO3)
Q8. Discuss in details the approaches taken up for fabrication of Gastroretentive drug delivery systems. [CO3+CO4]
Q9. Detail out the process of evaluations of microencapsulation. [CO3]
Q10. Write note on polymer matrix diffusion controlled implantable delivery system (CO2+CO3)

PTO

PART-III
Long Answers
(Instruction: Answer two out of three questions)

(2 x 10 = 20 marks)

Q11. Discuss all the factors affecting permeation of Drugs through transdermal route. [CO3]
Q12. Illustrate the factors required to investigate the adhesive bonds between bioadhesive system and mucin layer. (CO3+CO4)
Q13. Illustrate different techniques of microencapsulation with suitable diagram. (CO1+ CO2)

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