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

CLASS: BPHARM **SEMESTER: 7TH**
BRANCH: PHARMACY **SESSION: MO2024**

SUBJECT: BP704T NOVEL 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.**
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. Provide the rationale for formulating sustained drug delivery systems [CO1]

B. Why the drugs of half life more than 12 hours are not a good choice for sustained delivery ?[CO1 &CO2]

C. Discuss some advantages of Sustained dosage systems over conventional dosage.[CO1]

D. What do you understand by the Rule of Five under the transdermal delivery? [CO1&CO2]

E. Which is the most important anatomical barriers in ocular delivery and why? [CO3]

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

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

H. Classify mucoadhesive polymers with examples. (CO1)

I. Summarize the advantages and limitation of microencapsulation CO2

J. Define the wetting theory of mucoadhesion CO1

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

(7 x 5 = 35 Marks)

Q2. Discuss the physiochemical and pharmacokinetic parameters for drug selection to be used for sustained delivery. [CO1+CO2+CO5]
Q3. Write a short note on Intrauterine devices.[CO5]
Q4. Discuss the different types of targeting with rationale for site specific delivery.[CO3]
Q5. Write short note on hydrodynamic pressure activated system of delivery with a schematic diagram.[CO5]
Q6. Discuss the vapour pressure activated drug delivery with a schematic diagram.[CO5]
Q7. Write a short note on osmotic pressure activated implant with suitable example. (CO2+CO3)
Q8. How different mechanisms of mucoadehesion influences drug delivery systems? CO4 + CO5
Q9. Detail out the process of evaluations of microencapsulation. CO3
Q10. Write note on polymer matrix diffusion controlled implantable delivery system (CO2+CO3)

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

(2 x 10 = 20 marks)

Q11. Discuss the different formulation approaches for development of Transdermal drug delivery systems. [CO4 + CO5]
Q12. Illustrate the factors required to investigate the adhesive bonds between bioadhesive system and mucin layer. (CO3+CO4)
Q13. Illustrate the solvent evaporation and spray drying techniques of microencapsulation CO3+ CO4

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