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

CLASS: B. Pharm **SEMESTER: VII**
BRANCH: PHARMACY **SESSION: MO2022**

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. What do you mean by encapsulation dissolution-controlled release behaviour?

B. What do you mean by matrix dissolution-controlled release behaviour?

C. What is not pH range of tear fluid:
   i. Ciliary body and Iris are important components in it.
   ii. Ciliary body produces aqueous fluid.
   iii. Iris constitutes epithelium part of barrier.
   iv. Aqueous fluid contains electrolytes

D. The order of surfactant toxicity is Ciliary body and Iris are important components in it.
   i. Cationic> Anionic > non-ionic
   ii. Anionic > cationic > non-ionic
   iii. Non-ionic > Anionic > cationic

E. In which type of TDDS, adhesive is included separately in composition
   i. Polymer membrane permeation-controlled system
   ii. Adhesive dispersion type system
   iii. polymer diffusion type system
   iv. Micro-reservoir type

F. What is not part of *in vitro* evaluation
   i. Paddle over disc
   ii. reciprocating disc
   iii. skin permeation test in animals
   iv. invitro skin permeation test

G. What is not pH range of tear fluid:
   i. pH 7.4-8
   ii. pH 4.5-5.6
   iii. pH 6.4-7.4
   iv. pH 4.5-6

H. Effective cleansing mechanism in nasal cavity is known as ……

I. The three formulation triad in preparation of nasal formulations are ……..

J. B cells (spleen cells) are fused with myeloma cells using ……..

PTO

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

(7 x 5 = 35 Marks)

Q2. Comment on following factors affecting the nasal absorption of drugs
(a) Molecular Size
(b) Drug's lipophilicity
Q3. Elaborate on various advantages of Nasal Drug Delivery System
Q4. Differentiate between active and passive drug targeting
Q5. Describe anatomical barriers for ocular delivery.
Q6. Elaborate differences in topical and transdermal delivery.
Q7. Discuss two *in vitro* evaluation method of transdermal drug delivery as per U.S.P.
Q8. What do you mean by first and zero order kinetics? Describe both order kinetics using suitable equation.
Q9. "In conventional dosage form, rate limiting step in bioavailability is absorption while in controlled release dosage form, rate limiting step is the release of drug from its dosage form". Explain the statement in detail.
Q10. Describe the mechanism of ion-exchange controlled release in detail.

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

(2 x 10 = 20 marks)

Q11. Discuss the Physicochemical properties of a drug influencing drug product design and performance of sustained & controlled release formulation.
Q12. Describe transdermal delivery system and formulation design in transdermal delivery systems
Q13. Using suitable illustration describe the production of monoclonal antibodies.

:::::24/11/2022:::::M