07/7/2021

Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

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|---|---|
| Programme | B. Pharmacy |
| Semester | 7th |
| Subject | Novel Drug Delivery Systems |
| Subject Code | BP704T |
| Paper ID | 78390 |
| Time | 3Hours |
| Maximum Marks | 75 |

***Instructions to Candidates:*** *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*

**Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL**.*

***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*

**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

## Section A (10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

| | |
|---|---|
| i. | State application of polymers in formulation of controlled release drug delivery systems. |
| ii. | What is the need of mucoadhesive system? Give their advantages. |
| iii. | Write the principles and advantages of implants. |
| iv. | Distinguish between microcapsules and microspheres. |
| v. | Discuss advantages of nasal and pulmonary drug delivery system. |
| vi. | Describe advantages of drug targeting and suitable examples of diseases for which drug targeting is required. |
| vii. | Summarize various applications for gastroretentive drug delivery systems. |
| viii. | Give advantages and disadvantages of Occuserts. |
| ix. | Classify the polymers with examples on the basis of their structure. |
| x. | Write the qualities of drug suitable for sustained drug release dosage form. |

## Section B (2 X 10 = 20)

| | |
|---|---|
| 2. | Explain the physicochemical and biological properties of drugs relevant to controlled release formulations. |
| 3. | Write the principle of in the formulation of altered density system. Mention their formulation, evaluation and applications. |
| 4. | Illustrate the principal, advantage, disadvantage and method of preparation of niosomal drug delivery systems. |

## Section C (7 X 5 = 35)

| | |
|---|---|
| 5. | Propose the concept and principles of bioadhesion or mucoadhesion. |
| 6. | Discuss the role of penetration enhancers in transdermal drug delivery system. Give examples of penetration enhancers. |
| 7. | Explain various methods and concepts to overcome the intra-occular delivery of drugs. |
| 8. | Write advantage, disadvantage and applications of IUD's. |
| 9. | Discuss the role of monoclonal antibodies in targeted drug delivery. |
| 10. | Describe the various evaluation parameters of transdermal patches. |
| 11. | Explain the principle of osmotic drug delivery system. |
| 12. | Compare biocompatible and biodegradable polymers. Give two examples of each. |
| 13. | Explain the various factors affecting permeation. |

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**Note: Disclosure of identity by writing mobile number or making request for passing on any page of answer-sheet will lead to UMC against the candidate.**

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***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

## Section A (10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

| | |
|---|---|
| i. | What do you understand by Nasopulmonary drug delivery system? |
| ii. | Define a Transdermal patch. |
| iii. | What is the meaning of Dry powder inhaler? |
| iv. | Define Aerosol. |
| v. | Explain Progestasert. |
| vi. | Define a Matrix. |
| vii. | Define & differentiate Microcapsules and microspheres. |
| viii. | Give the Principle of Bio-adhesion. |
| ix. | Write the meaning & use of Monoclonal antibodies. |
| x. | Enlist various approaches to overcome ocular barriers to drug delivery. |

## Section B (2 X 10 = 20)

| | |
|---|---|
| 2. | What are the basic components of Transdermal Drug Delivery System? Discuss various formulation approaches of TDDS. |
| 3. | Discuss factors affecting gastric retention of dosage forms. Write a detailed note on various approaches of GRDDS. |
| 4. | Write formulation and applications of (2.5 each)-<br>a) Nanoparticles c) Niosomes<br>b) Liposomes d) Monoclonal antibodies |

## Section C (7 X 5 = 35)

| | |
|---|---|
| 5. | Explain different factors affecting percutaneous permeation of drug. |
| 6. | Discuss the principle and design of Floating Drug Delivery System. |
| 7. | Discuss Naso-Pulmonary Drug Delivery System. Write a note on – MDI and DPI. |
| 8. | Explain Coacervation (Phase separation) technique for microencapsulation. |
| 9. | Explain classification of liposome and explain their structural components. |
| 10. | Explain different type of implants. |
| 11. | What is the rationale of Controlled Drug Delivery System? |
| 12. | Explain physicochemical properties of drug relevant to controlled release formulations. |
| 13. | Discuss applications of polymers in Controlled Drug Delivery System. |

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25 JAN 2021

Roll No. | | | | | | | | | | |  Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (Sem.-7)

# NOVEL DRUG DELIVERY SYSTEM-THEORY

Subject Code : BP-704T

M.Code : 78390

Time : 3 Hrs.  Max. Marks : 75

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

## SECTION-A

**Answer briefly :**

1) Give the differences between controlled and sustained release formulations.

2) What is the need for mucoadhesive systems? Mention their advantages.

3) Write the principle and advantages of osmotic drug delivery systems.

4) What are hydrogels? Mention the applications of hydrogels.

5) Write the principle and advantages of pH dependent systems.

6) Write the differences between biodegradable and biocompatible polymers. Give two examples of each.

7) Write about the role of permeation enhancers in transdermal drug delivery systems with suitable examples.

8) Mention the advantages and disadvantages of drug targeting and give suitable examples of diseases for which targeting is required.

9) Write the principle in the formulation of altered density systems. Mention their applications.

10) Write the qualities of drugs suitable for controlled release dosage forms.



## SECTION-B

11) Write the principle advantages and disadvantages, methods of preparation and application of liposomal drug delivery systems.

12) Enumerate the characteristics of drug to the formulated as TDDS. Discuss the different methods of formulating and evaluation of Transdermal Drug Delivery Systems.

13) Explain the design and evaluation of controlled release formulations with suitable example.

## SECTION-C

14) Discuss the role of plasticizers in transdermal drug delivery systems.

15) Explain the mechanisms of drug release from controlled release dosage forms and how they are established.

16) Write about the evaluation tests meant for mucoadhesive systems.

17) Give the classification of polymers based on their structure with suitable examples.

18) Differentiate between dissolution controlled and diffusion controlled systems. Mention their relative advantages.

19) Write about stability problems of liposomes and approaches for stabilization.

20) Write the applications of natural gums in the design of controlled drug delivery.

21) Explain the principle of osmotic drug delivery systems.

22) Explain the formulation and evaluation of reservoir and matrix type systems.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**