

MAY 2011

[KY 343]

Sub. Code: 2904

M.PHARM. DEGREE EXAMINATION

(Regulations 2010)

Candidates admitted from 2010-2011 onwards

FIRST YEAR

Branch I – PHARMACEUTICS

Paper IV – ADVANCES IN DRUG DELIVERY SYSTEMS

Q.P. Code : 262904

Time : Three hours

Maximum : 100 marks

Answer All questions

I. Essay Questions:

(6 x 10 = 60)

1. Discuss in detail about physiochemical properties of drug molecule influencing the design and performance of sustained release drug delivery system.
2. Explain with examples biodegradable and nonbiodegradable polymers used for controlled drug delivery systems.
3. Discuss the principle and procedure for *in vitro* and *in vivo* evaluation of controlled released drug delivery.
4. Give an account of approaches and applications of implantable drug delivery systems.
5. Enumerate the characteristics of drug to be formulated transdermal drug delivery systems. Discuss any two methods of formulating transdermal drug delivery systems.
6. Discuss the design and development of oral controlled release drug administration.

II. Write short notes on:

(8 x 5 = 40)

1. Occusert.
2. Microencapsulation technique.
3. Permeation enhancers.
4. Diffusion controlled drug delivery.
5. Osmotic pressure control.
6. Granule coated products.
7. Classification of polymers.
8. Dissolution test for evaluating oral sustained release drug delivery systems.

October 2011

[KZ 343]

Sub. Code: 2904

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS

Q.P. Code : 262904

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Classify polymers and write the applications of polymers in controlled drug delivery systems. Discuss in detail about biodegradable and natural polymers.	17	40	20
2. Explain the principle and techniques of formulating nanoparticles.	17	40	20

II. Write notes on :

1. Osmotic pressure controlled drug delivery systems.	4	10	6
2. Long acting in insulin preparations.	4	10	6
3. New trends used in ophthalmic drug delivery systems.	4	10	6
4. Resealed erythrocytes as targeted drug delivery systems.	4	10	6
5. Monoclonal antibodies.	4	10	6
6. Magnetic microspheres.	4	10	6
7. Microencapsulation by spray drying and spray congealing.	4	10	6
8. Buccal strips.	4	10	6
9. Matrix devices controlled drug delivery systems.	4	10	6
10. Factors affecting permeation of transdermal drug delivery systems.	4	10	6

[LA 343]

MAY 2012
M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS
Q.P. Code: 262904

Sub. Code: 2904

Time: 3 hours
(180 Min)

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

Pages Time Marks
(Max.) (Max.) (Max.)

- | | | | |
|---|----|----|----|
| 1. Discuss in detail about liposomal drug delivery system in drug targeting to a specific site. | 17 | 40 | 20 |
| 2. Describe mucoadhesive drug delivery systems and its various methods of preparation and evaluation. | 17 | 40 | 20 |

II. Write notes on :

- | | | | |
|---|---|----|---|
| 1. Biodegradable polymers. | 4 | 10 | 6 |
| 2. Subdermal implants. | 4 | 10 | 6 |
| 3. Long acting penicillin preparations. | 4 | 10 | 6 |
| 4. Factors influencing colon targeting drug delivery systems. | 4 | 10 | 6 |
| 5. Ion exchange controlled drug delivery systems. | 4 | 10 | 6 |
| 6. Prodrug. | 4 | 10 | 6 |
| 7. Components in transdermal drug delivery systems. | 4 | 10 | 6 |
| 8. Give a brief account on nasal absorption and various approaches for its enhancement. | 4 | 10 | 6 |
| 9. Spansules. | 4 | 10 | 6 |
| 10. Explain design and mechanism of occuserts. | 4 | 10 | 6 |

[LB 343]

NOVEMBER 2012
M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS
Q.P. Code : 262904

Sub. Code: 2904

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :	Pages (Max.)	Time (Max.)	Marks (Max.)
1. What are Buccal drug delivery systems? Write a detail note on Merits, Demerits, Structure of Oral mucosa and Buccal absorption.	17	40	20
2. Discuss in detail Rate controlled drug delivery system and Explain the invitro and invivo Evaluation of Rate controlled drug delivery system.	17	40	20
II. Write Notes on :			
1. Oral controlled drug delivery system.	4	10	6
2. Applications of Polymers in Controlled drug delivery system.	4	10	6
3. Long acting contraceptive preparations.	4	10	6
4. Structure of Skin and Permeation of TDDS.	4	10	6
5. Coacervation and Phase separation technique.	4	10	6
6. Applications of Nasal drug delivery system.	4	10	6
7. Liposomes and Brain targeting.	4	10	6
8. Insitu Gels.	4	10	6
9. Ion-exchange resins.	4	10	6
10. Evaluation of TDDS.	4	10	6

[LC 343]

APRIL 2013
M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS
Q.P. Code : 262904

Sub. Code: 2904

Time : 3 hours

Maximum : 100 marks

I. Elaborate on :

(2x20=40)

1. Discuss in detail Physicochemical and Biological factors influencing Design of SRDDS.
2. Discuss in detail the Formulation approaches and Evaluation of TDDS.

II. Write notes on :

(10x6=60)

1. Classify Polymers and Write the applications of Polymers in CDDS.
2. Long acting Insulin preparations.
3. In-vitro and In-vivo Evaluation of Rate controlled drug delivery systems.
4. Write a note on Ocular inserts.
5. Resealed Erythrocytes.
6. Magnetic Microspheres.
7. Advantages and Dis-advantages of Mucoadhesive drug delivery system.
8. Add a note on Buccal drug delivery system.
9. Oral controlled release drug delivery system.
10. Microencapsulation techniques systems.

[LD 343]

OCTOBER 2013

Sub. Code: 2904

M.PHARM. DEGREE EXAMINATIONS

FIRST YEAR

BRANCH I – PHARMACEUTICS

PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS

Q.P. Code : 262904

Time: Three Hours

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

(2 x 20 = 40)

1. Define targeting. Discuss in detail Liposomal Drug Delivery system.
2. Describe in detail ocular drug delivery system.

II. Write notes on :

(10 x 6 = 60)

1. Differentiate sustained, Controlled and Conventional Drug Delivery System.
2. Co acervation phase separation.
3. Non Biodegradable polymers.
4. Long acting contraceptives
5. Various approaches for colon targeting.
6. pH controlled drug delivery system.
7. Nanoparticles.
8. Resealed erythrocytes.
9. Permeation enhancers in Transdermal Delivery.
10. Write note on Pulmonary drug delivery system.

[LE 343]

APRIL 2014

Sub. Code: 2904

**M.PHARM. DEGREE EXAMS
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEMS**

Q.P. Code : 262904

Time : 3 hours

Maximum : 100 marks

I. Elaborate on :

(2x20=40)

1. Explain the concepts and design of rate controlled drug delivery system.
2. Enumerate the characteristics of drug to be formulated as Transdermal Drug Delivery System. Explain formulation and evaluation in detail.

II. Write notes on :

(10x6=60)

1. Detail the physicochemical properties of Sustained Drug Delivery Systems.
2. Give the principle of Microencapsulation. Explain any one technique adopted for bringing about Microencapsulation.
3. Give an account of Natural Polymers used in Drug Delivery System
4. Write a note on Liposomal drug delivery
5. Add a note on Magnetically responsible microspheres
6. Write a note on Long acting Pencillin preparations.
7. Explain Ocular controlled drug delivery in detail
8. Write note on Transmucosal permeability and permeation enhancers.
9. Explain briefly Pulmonary drug delivery system.
10. Describe in detail Gastro intestinal retention of oral drug delivery system.

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OCTOBER 2014

Sub. Code: 2904

**M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH I – PHARMACEUTICS
PAPER IV – ADVANCES IN DRUG DELIVERY SYSTEM**

Q.P. Code : 262904

Time : Three hours

Maximum : 100 marks

I. Elaborate on:

(2 x 20 = 40)

1. Define Mucoadhesive drug delivery systems and the various methods of preparation and evaluation.
2. Discuss the design and development of controlled release oral drug delivery system.

II. Write notes on:

(10 x 6 = 60)

1. Physiochemical properties of drug influencing design of Sustained release preparations.
2. Biodegradable polymers
3. Implants
4. Long acting penicillin preparations
5. Evaluation of transdermal drug delivery systems
6. Ophthalmic *in situ* gels
7. Liposomes
8. Buccal strips
9. Feedback regulated drug delivery systems
10. Nanoparticles
