[ND 277] **NOVEMBER 1994**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Explain the principle of design and working including kinetics of drug release of sustained action dosage forms employing ion–exchange resins, matrix devices and osmotic systems.

2. (a) Discuss the following : Spansules, Multilayer tablets.

(b) Discuss the regulatory considerations in controlled release medication systems.

3. Explain the advantages of transdermal drug delivery systems. According to the technological basis of their approach, how are these systems classified? Give labelled cross sectional views of these different classes. Give an account of the marketed forms of these systems.

4. Discuss the methods available for enhancing the bioavailability of drugs.

5. Write detailed notes on the following :

(a) Potential advantages and disadvantages of sustained drug therapy.

(b) Nanoparticles.

(c) Directly compressible excipients for tablets.

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[S B 306] **APRIL 1995**

M.Pharm. DEGREE EXAMINATION.

First Year

(New Regulations)

Branch I — Pharmaceutics

ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours. Maximum : 100 marks.

Answer any FOUR questions.

All questions carry equal marks.

1. Give the design and working of the apparatus employed for in vitro evaluation of transdermal drug delivery systems. Discuss the kinetics of drug release and drug absorption from these systems.

2. Give the advantages of microencapsulation. Discuss the important methods for microencapsulation of drugs. Explain their relative merits and limitations.

3. Discuss the formulation and working of sustained release dosage forms for parenteral purposes.

4. What are the advantages and application of liposomes ? How are they classified ? What are the materials employed for encapsulating drugs in liposomes ? How are these considered as target oriented drug delivery systems?

5. Write detailed notes on any THREE of the following :

(*a*) Polymeric materials employed for preparation of transdermal drug delivery systems.

(*b*) Bioavailability enhancers of drugs.

(*c*) Computerisation for in process quality control of tablets.

(*d*) Resealed erythrocytes.

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APRIL 1996

[AK 307] M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Explain in detail the various parametres to be studied before selecting a drug for sustained action formulation. Give advantages and disadvantages of sustained action formulation.

2. Discuss the recent trend in the formulation of sustained action osmotic devices, implants, intrauterine devices and intra vaginal devices. Discuss their merits and demerits.

3. Discuss in detail the Transdermal formulation techniques. Enumerate their advantages and discuss the merits and demerits of such formulations.

4. (a) Discuss about computerisation in 'inprocess' quality control of formulations.

(b) Discuss in detail about Liposomal formulations for drug targetting. Explain how monoclonal antibodies are helpful for drug targetting.

5. Explain on the following :

(a) Micellar solubilisation and bioavailability.

(b) Prodrugs and Bioavailability.

(c) Occusert as controlled drug delivery module.

(d) Coating techniques for sustained action oral formulation.

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[PK 203] **OCTOBER 1996**

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. Write notes on :

(a) Direct compression of tablets.

(b) Computerisation of "in process quality control" of tablets.

(c) Nanoparticles.

2. Discuss in detail the various factors that affect the absorption of drugs through the skin. How are in vivo and in vitro studies carried out for percutaneous absorption. Mention the importance of absorption enhancers in formulation of ointments.

3. (a) Discuss about the regulator consideration for controlled release medication.

(b) Give an account of polymers used in Controlled Drug Delivery modules. What are the advantages and disadvantages of using Polymers for controlled Drug Delivery Modulues?

Mention a few marketed forms of oral sustained release preparations. Discuss in detail about their formulation and evaluation.

5. Give a detailed account of Targeted Drug Delivery systems.

APRIL 1997

M.Pharm. DEGREE EXAMINATION

(New Regulations)

MP255

First Year

Branch I - Pharmaceutics

Paper IV - ADVANCES IN DRUG DELIVERY SYSTEM

Time: Three hours Max.marks:100

Answer any FOUR questions

All questions carry equal marks

1. Explain in detail the different techniques employed to achieve sustained release formulations. Mention their merits and demerits.

2. Discuss in detail the formulation of different types of transdermal formulations. Discuss the merits and demerits of such formulations.

3. What are the various factors to be considered in the formulation of controlled drug delivery systems? What is the rate limiting step in the availability of a drug from controlled release formulations?

4. What are the advantages of targetted drug delivery systems? Discuss in detail about Liposomal formulations for drug targetting. Explain how monoclonal antibodies are helpful for drug targetting.

5. Explain the following:

   (a) Bio-adhesive systems

   (b) Osmotic pump

   (c) Occusert as controlled drug delivery module

   (d) Regulatory conditions in controlled release medication.

MS 239

OCTOBER 1997

M.Pharm. DEGREE EXAMINATION

(New Regulations)

First Year

Branch I - Pharmaceutics

Paper IV - ADVANCES IN DRUG DELIVERY SYSTEM

Time: Three hours Max.marks:100

Answer any FOUR questions

All questions carry equal marks

1. Considering a sustained action formulation as a new drug, explain the various documents to be submitted to legal authorities for obtaining a licence to manufacture such a formulation. Give examples of drugs available in the market as sustained action formulations.

2. Discuss about various techniques of drug targetting and their limitations.

3. Discuss the various techniques of making sustained action oral formulations. Discuss with examples how such products are evaluated.

4. (a) Discuss about magnetic microspheres, sprayable bandages and bioadhesive material for novel drug delivery systems.

   (b) Discuss about systemic absorption of drugs through nasal route.

5. Explain the following:

   (a) Methods of solubilisation of drugs

   (b) Methods of enhancing bioavailability of drugs across the skin

   (c) Insulin pump as a controlled drug delivery module

   (d) Microencapsulation techniques.

[SV 271] APRIL 1998

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper IV — ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Explain the newer coating technology in the manufacture of Tablets to enhance stability and sustained action.

2. Describe the various parameters to be taken into account before selecting a drug for sustained action formulation.

3. Explain in detail :

(a) The role of ion–exchange resins in the formulation of sustained–release formulations.

(b) Formulation and evaluation of ocursert.

4. Explain in detail the targetted drug delivery system. Explain the role of erythrocytes as a drug carrier in targetting a drug.

5. Give a detailed account of parenteral controlled release systems.

[KA 271] OCTOBER 1999

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper IV — ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) Discuss formulation design and optimization of Transdermal therapeutic systems.

(b) Describe in brief the methods to evaluate Transdermal patch.

2. (a) Discuss the 'tablet coating' as a technic for sustained action purposes.

(b) Discuss the following properties of ingredients for direct compression of tablets :

(i) Compressibility

(ii) Fluidity.

3. Explain the application of biodegradable and bioerodible polymers in the design of Controlled Drug Delivery Systems, with examples.

4. (a) State the role of liposomes in Drug delivery systems. How are the liposomes evaluated?

(b) Justify the statement "Pro-drug is a novel drug delivery system".

5. (a) Give the regulatory requirements to demonstrate the safety and efficacy of a controlled drug delivery system.

(b) What are the methods to enhance dissolution characteristics of an oral formulation?

6. Write notes on :

(a) Micro encapsulation.

(b) Osmotically controlled drug devices.

M. Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper IV — ADVANCES IN DRUG DELIVERY SYSTEM

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. What is microencapsulation? Mention different methods of microencapsulation. Describe any method in detail used for encapsulating a liquid drug to be converted into a free flowing solid.

2. What are different types of transdermal drug delivery systems? Describe.

How do you evaluate them for invitro performance?

3. Discuss biodegradable polymers commonly employed in the preparation of novel drug delivery system.

4. What are liposomes? Discuss different methods of preparation of liposomes. How are liposomes evaluated for their performance?

5. Discuss in detail the different methods of enhancing bioavailability of drugs.

6. Write notes on :

(a) Matrix tablets

(b) Explain the difference between sustained release and prolonged release products

(c) Computerisation in developing drug delivery system.

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[KC 271] OCTOBER 2000

M.Pharm. DEGREE EXAMINATION.

(New Regulations)

First Year

Branch I — Pharmaceutics

Paper IV — ADVANCES IN DRUG DELIVERY SYSTEMS

Time : Three hours Maximum : 100 marks

Answer any FOUR questions.

All questions carry equal marks.

1. Explain the difference between sustained release and controlled release drug delivery systems. Illustrate your answer with suitable examples.

2. Give an account on immunologically based drug delivery systems. What is the manufacturing feasibility?

3. Discuss on various approaches for enhancement of bio-availability of hydrophobic drugs.

4. Explain the limitations of Direct compression technology. Mention a few recently developed Direct Compression vehicles.

5. Discuss the advantages and disadvantages of bio-degradable, hydrophilic, lipophilic polymers in the development of CDDM.

6. Write notes on :

(a) Computerisation in developing drug delivery systems.

(b) Particle controlled drug delivery systems.

(c) Film coating using modern techniques.

(d) Implants.
