

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LL 932]

NOVEMBER 2017

Sub. Code: 2932

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICS – MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail ocular drug delivery system.
2. Explain the concepts and design of rate controlled drug delivery systems.

II. Write notes on:

(7 x 5 = 35)

1. Pharmacogenetics.
2. Components of transdermal drug delivery systems.
3. Buccal tablets.
4. Biodegradable polymers.
5. Methods to enhance drug permeation through transdermal route.
6. Preparation and evaluation of gastro retentive floating tablets.
7. Drug delivery systems for proteins.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LM 932]

MAY 2018

Sub. Code: 2932

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICS – MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Enumerate the characteristics of drugs to be formulated as Transdermal Drug Delivery System. Explain formulation and evaluation in detail.
2. Describe the various formulation approaches for delivery of proteins and macromolecules.

II. Write notes on:

(7 x 5 = 35)

1. Buccal strips.
2. Formulation of gastro retentive drug delivery systems.
3. Occuserts.
4. Pharmacogenetics.
5. Natural polymers.
6. Osmotic Pumps.
7. Newer trends in delivery of vaccines.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LN 932]

NOVEMBER 2018

Sub. Code: 2932

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICS – MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the various approaches to formulate gastro retentive drug delivery systems.
2. Classify and explain in detail about polymers. Write the applications of polymers in controlled drug delivery systems.

II. Write notes on:

(7 x 5 = 35)

1. Physiochemical properties affecting sustained release preparations.
2. Telepharmacy.
3. Activation modulated drug delivery systems.
4. Evaluation of mucoadhesive drug delivery.
5. Ophthalmic drug delivery systems.
6. Methods to enhance transdermal permeation.
7. Newer drug delivery systems for proteins.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 932]

MAY 2019

Sub. Code: 2932

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
PHARMACEUTICS – MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss the classification and applications of polymers in drug delivery.
2. Explain about osmotic activated drug delivery system.

II. Write notes on:

(7 x 5 = 35)

1. pH activated drug delivery systems.
2. Penetration enhancers in transdermal drug delivery systems.
3. Transdermal drug delivery of vaccines.
4. Customized drug delivery systems.
5. Barriers of drug permeation in ocular drug delivery.
6. Merits and demerits buccal drug delivery systems.
7. Elementary osmotic pump.

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[LP 932]

NOVEMBER 2019

Sub. Code: 2932

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
BRANCH I – PHARMACEUTICS – MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss about mechanism of drug release from CR/SR formulation.
2. Explain about modulation of GI transit time approaches to extend GI transit time.

II. Write notes on:

(7 x 5 = 35)

1. Enzyme activated drug delivery systems.
2. Categories of patients for personalized medicine.
3. Buccal strips.
4. Occusert systems.
5. Methods to enhance skin permeation.
6. Uptake of antigens.
7. Explain formulation any one drug delivery system of proteins and other molecules.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LQ 0121]

JANUARY 2021

Sub. Code: 2932

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-I (PCI New regulations 2016)

PHARMACEUTICS – MPH

PAPER II – DRUG DELIVERY SYSTEM

Q.P. Code : 262932

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail the principle involved and formulation of gastro retentive drug delivery system.
2. Explain the physiochemical and biological factors influencing the design of sustained release dosage forms.

II. Write notes on:

(7 x 5 = 35)

1. Personalized medicines.
2. Biodegradable polymers.
3. Buccal strips.
4. Activation modulated drug delivery.
5. Occuserts.
6. Formulation of delivery systems for vaccines.
7. Evaluation of transdermal patches.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0921]

**SEPTEMBER 2021
(OCTOBER 2020 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER-I (PCI New regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM
*Q.P. Code : 262932***

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail Vaccine delivery system.
2. Explain about formulation and evaluation of Protein and peptide Delivery system.

II. Write notes on:

(7 x 5 = 35)

1. 3D printing of Pharmaceuticals.
2. Buccal drug delivery system.
3. Permeature enhancement methods for transdermal permeation.
4. Biological factors influencing SR/CR formulations.
5. Personalized medicines.
6. Ocuserts.
7. Advantages and Disadvantages of Sustained release formulations.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0122]

**JANUARY 2022
(APRIL 2021 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER-I (PCI New regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM
Q.P. Code : 262932**

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail the formulation aspects of transdermal DDS. Write a note on evaluation tests.
2. Describe formulations of mechanically activated, pH activated and Osmotic activated rate controlled Drug Delivery system.

II. Write notes on:

(7 x 5 = 35)

1. Biodegradable polymers.
2. Vaccine delivery systems.
3. Customized Drug Delivery System.
4. Evaluation of delivery system of proteins.
5. Barriers of drug permeation in Ocular Drug Delivery system.
6. Principle of muco adhesion in Buccal drug delivery system.
7. Advantages and Disadvantages of Gastro Retentive drug delivery system.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MPHARM 0422]

**APRIL 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER-I (PCI New regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM
Q.P. Code : 262932**

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the principle and approaches for formulation of rate controlled DDS.
2. Explain about Ocular Drug Delivery system.

II. Write notes on:

(7 x 5 = 35)

1. Mucosal and transdermal delivery of vaccines.
2. Evaluation of Transdermal drug delivery system.
3. Osmotic activated drug delivery system.
4. Bioelectronic medicines.
5. Telepharmacy.
6. Physicochemical factors influencing SR/CR formulation.
7. Mechanism of Drug Delivery from SR/CR formulation.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0922]

**SEPTEMBER 2022
(APRIL 2022 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code : 262932

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the various approaches used in the design of oral sustained release or controlled release drug delivery system.
2. Give a detailed account on the various formulation approaches used to enhance the gastrointestinal residence of dosage forms.

II. Write notes on:

(7 x 5 = 35)

1. Bioelectronic medicines.
2. Barriers to ocular drug delivery.
3. Environmentally responsive polymers.
4. Methods to enhance drug permeation across skin.
5. Formulation approaches for protein and peptide parenteral delivery of drugs.
6. Single shot vaccines.
7. Principle of mucoadhesion.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0423]

**APRIL 2023
(OCTOBER 2022 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Elaborate on vaccine drug delivery systems.
2. Explain in detail about the buccal mucosa, principle of mucoadhesion, formulation approaches and evaluation of buccal drug delivery system.

II. Write notes on:

(7 x 5 = 35)

1. Tele pharmacy.
2. Diffusion controlled drug delivery system.
3. Factors affecting percutaneous absorption of drugs.
4. Feedback regulated drug delivery system.
5. Formulation approaches for ocular drug delivery system.
6. Barriers to protein and peptide drug delivery.
7. Floating drug delivery systems.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0823]

**AUGUST 2023
(APRIL 2023 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe in detail the formulation approaches, evaluation and applications of transdermal drug delivery system.
2. Give a detailed account on the various polymers used in the formulation of sustained or controlled release drug delivery system.

II. Write notes on:

(7 x 5 = 35)

1. 3-D printing of pharmaceuticals.
2. Vaccine drug delivery system.
3. Barriers to protein and peptide drug delivery.
4. Factors affecting gastro retention of oral dosage forms.
5. Chemically activated drug delivery systems.
6. Evaluation of Buccal films.
7. Ocular inserts.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 1223]

**DECEMBER 2023
(OCTOBER 2023 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time : Three hours

Answer ALL Questions

Maximum: 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the principle, dosage form, formulation and evaluation of mucoadhesive drug delivery.
2. Explain the formulation and evaluation of osmotic drug delivery system.

II. Write notes on:

(7 x 5 = 35)

1. Biological factors affecting controlled release preparations.
2. Gastro retentive drug delivery.
3. Occuserts.
4. Preparation of transdermal patches.
5. Feedback regulated drug delivery.
6. Classification of polymers used in drug delivery.
7. Protein drug delivery.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0524]

**MAY 2024
(APRIL 2024 EXAM SESSION)**

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time: Three hours

Answer ALL Questions

Maximum: 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail activation modulated controlled drug delivery systems.
2. Explain the formulation and evaluation of delivery systems of proteins and peptides.

II. Write notes on:

(7 x 5 = 35)

1. Write briefly on barriers for protein and peptide drugs.
2. Write a note on penetration enhancer for transdermal patch.
3. Describe the advantages and disadvantages of sustained release formulations.
4. Outline on Telepharmacy.
5. Write a note on enzyme activated drug delivery systems.
6. Define polymers and classify the polymers.
7. How to solve the barriers of drug permeation in ocular drug delivery?

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 0425]

APRIL 2025

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time: Three hours

Answer ALL Questions

Maximum: 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. How does skin act as a barrier in dermal delivery of drugs? Discuss the various methods of formulation and evaluation of transdermal drug delivery systems.
2. Discuss the principle and methods in the development of Gastro retentive drug delivery systems. Add a note on its evaluation.

II. Write notes on:

(7 x 5 = 35)

1. Bioelectronic Medicines.
2. Osmotic drug delivery systems.
3. Principles of muco adhesion.
4. Ocular drug delivery systems.
5. Barriers for protein delivery.
6. Vaccine drug delivery systems.
7. Pharmacogenetics.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[M.PHARM 1025]

OCTOBER 2025

Sub. Code: 2932

**M.PHARMACY DEGREE EXAMINATION
SEMESTER - I (PCI New Regulations 2016)
PHARMACEUTICS - MPH
PAPER II – DRUG DELIVERY SYSTEM**

Q.P. Code: 262932

Time: Three hours

Answer ALL Questions

Maximum: 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the barriers for the delivery of proteins. Discuss the various methods for the formulation of proteins and macromolecules drug delivery.
2. Write the principle of muco adhesion and discuss the merits, demerits and formulation and evaluation of buccal drug delivery systems. Write the mechanism of drug permeation.

II. Write notes on:

(7 x 5 = 35)

1. 3D printing of pharmaceuticals.
2. Feedback regulated drug delivery systems.
3. Approaches for the extension of GI transit.
4. Ocuserts.
5. Biodegradable polymers.
6. Vaccine delivery systems.
7. Evaluation of transdermal drug delivery systems.
