

**Mapping of Level of Learning Outcomes and Content in
Internal assessment-Unit Test
Syllabus: Part of Module I and Module III
M. Pharm. (Pharmaceutics)
Course 2101: Advanced Pharmaceutics II**

Course Objectives: To make the learner understand the developments in design, development and evaluation of advanced drug delivery systems.

Learning Outcomes: The learner will be able to:

1. Understand the developments in design and development of novel and advanced drug delivery systems using specialized excipients and approaches
2. Identify and understand the evaluation of novel and advanced drug delivery systems

Module 1: To study concepts of rate controlled and site- specific drug delivery systems and particulate carrier systems Credit 1

Objectives:

- To study site specific drug delivery systems to increase therapeutic efficacy of drug with minimum side-effects.
- To enable the learners to understand physiology of eye and develop advancements in ocular controlled drug delivery systems.
- To enable the learners to understand in detail biochemistry and anatomy of skin, recent developments in transdermal drug delivery systems and evaluate TDDS as per regulatory guidelines.
- To study site specific drug delivery systems to increase therapeutic efficacy of drug with minimum side-effects.

LOs: Learner will be able to

1. Understand the physiology of eye and develop advancements in ocular controlled drug delivery systems.
2. Understand biochemistry and anatomy of skin, recent developments in transdermal drug delivery systems and evaluate TDDS as per regulatory guidelines.

Module 2: To study buccal, nasal, pulmonary drug delivery Systems Credit 1

Objectives:

- To enable the learners to understand anatomy and physiology of buccal and nasal mucosa and lungs.
- To enable the learners to understand recent developments in buccal, nasal and pulmonary drug delivery systems and its applications.

LOs: Learners will be able to

1. Compare anatomical and physiological differences in various mucosae
2. Discuss recent advances in nasal and pulmonary DDS
3. Evaluate various mucosal DDS.

Module 3: To study rectal and vaginal drug delivery system Credit 1

Objectives:

- To teach basic principles regarding the physiology of rectum, vagina and uterus.
- To study in detail rectal and vaginal controlled buccal, nasal, pulmonary drug delivery systems and recent developments in medicated IUDS, hormone- releasing IUDS and prospects for intrauterine contraception.

LOs: Learners will be able to

1. Compare anatomical and physiological differences in various mucosae

2. Discuss recent advances in rectal and vaginal DDS as well as IUDs
3. Evaluate various mucosal DDS

Module 4: To study peptide based drug delivery system & Project & Seminar

Credit 1

Objectives:

- To enable the learners to understand the structural complexity and challenges to peptides and protein delivery of drugs and develop recent developments in peptide based drug delivery systems.
- The learners will be assigned reading from books and related published articles from journals followed by interactive discussion / submission of report.

LOs: Learners will be able to

1. Describe the Design requirements for peptide based DDS
2. Compare formulation considerations for peptide based DDS
3. Analyse the recent article from the journal based on DDS

**C. U. Shah College of Pharmacy,
S.N.D.T. Women's University.
M. Pharm (Pharmaceutics) Sem II
Advanced Pharmaceutics II
Theory Unit Test**

Date: 6/4/2018

Time: 10.30am-11.30am

Marks: 25

SECTION 1

1. Explain the fundamentals of antifertility action of copper. Describe any two newly developed Copper IUD (Diagram compulsory). 8M
2. Explain any two hydrogel based rectal drug delivery system. 5M

SECTION 2

1. Explain in brief cellular uptake as a biological process involved in drug transport along with their application in drug targeting 6 M
2. Differentiate between active and passive targeting 3 M
3. Describe the prodrug approach for drug delivery system 3 M

Learning outcome:

Q. No	Question	Marks	Module	Learning outcome
Section 1				
1.	Explain the fundamentals of antifertility action of copper.	8	3	Understand and Apply
2.	Explain any two hydrogel based rectal drug delivery systems	5	3	Apply
Section 2				
1.	Explain in brief cellular uptake as a biological process involved in drug transport along with their application in drug targeting	6	1	Remember and apply
2.	Differentiate between active and passive targeting	3	1	Distinguish
3.	Describe the prodrug approach for drug delivery system	3	1	Understand

- Internal assessment is also carried out in the form of assignments.
- Each student is given an assignment topic individually based on syllabus and asked to select research article based on the topic assigned from peer reviewed journals with impact factor of 2 and up and critique article for its positive as well as negative points
- Student is expected to present the article in the class
- Also students are asked to prepare write-up on the theory concepts taught in class through literature search.

This facilitates presentation skills, independent working as well as team work. It helps in achieving following PO's:

1. Understand
2. Review
3. Apply
4. Compare
5. analyse