

2.3: Teaching- Learning Process

2.3.1: Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences using ICT tools

2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

A) Experiential learning

- 1) *B. Pharm Project work*
- 2) *M. Pharm Project work*
- 3) *Pharm-D Students Internship*

The practical/tutorial sessions concentrate on student needs and learn from experiences throughout various learning activities, such as internships, industrial and hospital visits, seminars, assignments, poster preparation, and lab postings.

Being a professional course, undergraduate coursework does not have the option to switch across disciplines. The majority of the B. Pharm. and Pharm.-D. courses are inter-disciplinary in nature.

Teaching B. Pharm subjects is a responsibility shared by all PG departments. The institute supports and fosters interdisciplinary and cross-disciplinary research among the departments and organizations. The majority of PG dissertation projects involve many departments.

Project-based learning

According to PCI/University standards, the students' projects are a requirement for their successful completion of the course.


UG Courses:

B. Pharm.

As part of their coursework, B. Pharm students do a 6-month project in a group of 3–4 peers during their final year.

Patient-centric and Evidence-Based Learning

The curriculum is set up such that each student gains professional potential in the field through expert instruction. Students are given practical training in labs, patient interactions, and industry tours to help them become professionally competent. Students receive professional training while working in the hospital's clinical settings. Evidence-based medicine is practiced and established clinical practice standards are taught to students.


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PG Course:**Pharm-D.**


According to PCI and affiliating University rules, Pharm-D students must complete their projects within their Vth year. Typically, teams of two to three students work on projects under the direction of college teachers and medical professionals from the nearby hospital.

M. Pharm

All M. Pharmacy students, regardless of their area of focus, are required to complete a one-year project as part of their coursework.

Role Play:

During their practical hours, students engage in role plays like patient counselling. They are also permitted to compete in intercollege tournaments.



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Vishnupuri, Nanded-08.

M. Pharm Research Title



**“EXTRACTION, FORMULATION AND
EVALUATION OF EDIBLE FILM AND COATING
ON FRUIT USING NATURAL POLYMER”**

Dissertation submitted to the

Swami Ramanand Teerth Marathwada University Nanded

In Partial Fulfilment of The requirement for the award of the degree of

MASTER OF PHARMACY

IN

PHARMACEUTICS

Submitted By

Miss. MANSI SHIVAJI MANE

Guide/Mentor

Dr. JADHAV S. B.

Head, Department of pharmaceuticals

Indira College of pharmacy, Vishnupuri, Nanded.



DEPARTMENT OF PHARMACEUTICS

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED.

2021-22

**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.**

Sahayog sevabhavi sansthan's

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Extraction, Formulation and Evaluation of Edible Film and Coating on Fruit Using Natural Polymer*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Miss. Mansi Shivaji Mane at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded

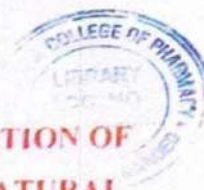
Dr. S.B. Jadhav

Research Guide

Indira College of Pharmacy, Vishnupuri,
Nanded

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"EXTRACTION, FORMULATION AND EVALUATION OF
EDIBLE FILM & COATING ON FRUIT USING NATURAL
POLYMER"**



*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfillment of The requirement for the award of the degree of*

**MASTER OF PHARMACY IN
PHARMACEUTICS**

Submitted By

MISS. ANKITA BALAJI SHINDE

Guide/Mentor

Dr. Prakash Katakam

Principal Indira College of pharmacy, Vishnupuri, Nanded.

INDIRA COLLEGE OF PHARMACY



VISHNPURI, NANDED.

2021-22

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Indira College of Pharmacy
Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sansthan's
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NANDED.




CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Extraction, Formulation and Evaluation of Edible Film & Coating on Fruit Using Natural Polymer*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Miss Ankita Balaji Shinde*, at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfillment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded


Dr. Prakash Katakam
Research Guide

Indira College of Pharmacy,
Vishnupuri, Nanded
Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"PREPARE AND RESEARCH OF MEDICATED BANANA
SUTURE FROM USING OF PSEUDO STEM FIBER"**

*Dissertation submitted to the
Swami Ramanand Teertha Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*

**MASTER OF PHARMACY
IN
PHARMACEUTICS**

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Dr. PRAKASH KATKAM

*Head, Department of Pharmaceutics
Indira College of pharmacy,
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2021-22

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Vishnupuri, Nanded-06.**

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VISHNUPURI, NANDED.




CERTIFICATE

This is to certify that the research work embodied in this thesis entitled *"PREPARATION OF RESEARCH OF MEDICATED BANANA SQUEEZE FROM USING OF PSEUDO NIGELLA FRUIT"* submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Mr. Bharati Vivek Rayindra*, at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10.08.2022

Place: Nanded


Dr. Prakash Katkam
Research Guide
Indira College of Pharmacy,
Vishnupuri, Nanded
Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.



**"EXTRACTION, FORMULATION AND
EVALUATION OF EDIBLE FILM & COATING ON
FRUIT USING NATURAL POLYMER"**

*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
for the award of the degree of*

MASTER OF PHARMACY

IN

PHARMACEUTICS

Submitted By

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Guidance/Mentor

Dr. PRAKASH KATAKAM

Principal

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DEPARTMENT OF PHARMACEUTICS

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2021-22



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Indira College of Pharmacy
Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sansthan's
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED

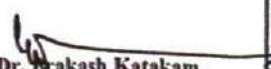


CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Extraction, Formulation and Evaluation of Edible Film and Coating on Fruit Using Natural Polymer.*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Miss. Shifa Kuaser Khursheed Akram*, at Indira College of Pharmacy, Vishnupuri, Nanded under your supervision in the partial fulfilment of the requirement for the award of degree of *Master of Pharmacy* in the subject *Pharmaceutics*. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/22

Place: Nanded


Dr. Prakash Katakam,
Research Guide
Indira College of Pharmacy,
Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**PREPARATION AND EVALUATION OF
COMPOSITE FILM FOR WOUND DRESSING
APPLICATION"**

Dissertation submitted to the
Swami Ramanand Teerth Marathwada University, Nanded

In partial fulfillment of the requirement
for the award of the Degree of

**MASTER OF PHARMACY
IN
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Submitted By


Mrs. Seema Panditrao Kurhe
Indira college of pharmacy Vishnupuri, Nanded

Guide/ Mentor

Dr. Prakashkulkarni
Indira College of Pharmacy,
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Preparation and Evaluation of composite from natural polymer for wound dressing


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

SahayogSevabhaviSanstha's
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "Preparation and evaluation of composite film for wound dressing application" submitted to Swami RamanandTeerthMarathwada University, Nanded was carried out by Mrs. Seema Panditrao kurhe at Indira College of Pharmacy, Vishnupuri, Nanded under my supervision in the partial fulfillment of the requirement for the award of degree of Master of Pharmacy in the subject Pharmaceutics. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of him is original and Bonafide.

Date: 10.08.2022

Place: Nanded.


Dr. Prakash Katakam


Research Guide

Indira College of Pharmacy,

Principal

Vishnupuri, Nanded

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

**"DESIGN AND EVALUATION OF MEDICATED SUTURE
FROM PSEUDO STEM BANANA FIBER"**

*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*



**MASTER OF PHARMACY
IN
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Submitted By

MISS. CHAVAN TEJASHWINI ASHOKRAO

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**Principal
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Vishnupuri, Nanded-06.**

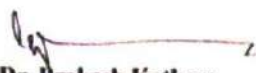
Sahayog Sevabhavi Sansthan's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.




CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Design and evaluation of Medicated Suture from Pseudo Stem Banana Fiber*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Mrs. Tejshwari Ashokrao Chavan*, at Indira College of Pharmacy, Vishnupuri, Nanded under your supervision in the partial fulfilment of the requirement for the award of degree of Master of Pharmacy in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of her is original and Bonafide.

Date: 10/8/22
Place: Nanded


Dr. Prakash Katkam
Research Guide
Indira College of Pharmacy,
Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

**FORMULATION AND EVALUATION OF MEDICATED
SUTURE FROM COCONUT FIBER**

*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*



**MASTER OF PHARMACY
IN
PHARMACEUTICS**

Submitted By

MR. ROHIT BALAJI ARDE

Guide/Mentor

Dr. PRAKASH KATAKAM

Head, Department of Pharmaceutics
Indira College of pharmacy,
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Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sansthan's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.





CERTIFICATE

This is to certify that the research work embodied in this thesis entitled Formulation and Evaluation of Medicated Supine From Coconut Fiber submitted to SwamiRamanand Teerth Marathwada University, Nanded was carried out by Mr. Rohit Balaji Arate at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded


Dr. Prakash Katakam
Research Guide
Indira College of Pharmacy,
Vishnupuri, Nanded


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

"Formulation and Evaluation of Medicated Pads from Coconut Fibre"

Dissertation submitted to the
Swami Ramanand Teerth Marathwada University, Nanded
In partial fulfillment of the requirement
For the award of the degree of

**MASTER OF PHARMACY
IN
PHARMACEUTICS**



Submitted by
Ms. DAWALBAJE KALYANI BHAGWAT

Guide by
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Head, Department of Pharmaceutics,
Indira College of Pharmacy,
Vishnupuri, Nanded.



**DEPARTMENT OF PHARMACEUTICS
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2021-22

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Indira College of Pharmacy
Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Formulation and Evaluation of Medicated pads from coconut fiber*" submitted to Swami Ramanand Teerth Marathwada University, Nanded, was carried out by *Ms. Dawalbaje K. B.* at Indira College of Pharmacy, Vishnupuri, Nanded under the supervision of *Mr. Katkam* for the partial fulfillment of the requirement of the award of the degree of Master of Pharmacy in the subject Pharmaceutics.

Date:- 10 August 2022

Place:- Nanded



Principal

Indira College of Pharmacy,

Vishnupuri, Nanded

Principal

Indira College of Pharmacy

Vishnupuri, Nanded-06.

2



Principal

Indira College of Pharmacy

Vishnupuri, Nanded-06.



**"FORMULATION AND EVALUATION OF MEDICATED
SUTURE FROM COCONUT FIBER"**

**Dissertation submitted to the
SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
NANDED**

In partial fulfillment of the requirement

**For the award of the Degree of
MASTER OF PHARMACY**

**IN
PHARMACEUTICS**

Submitted by

Mr. Parmeshwar Devidasrao Mirase

Guide Member

Dr. S.B.JADHAV

Head Department of Pharmaceutics

**Indira College of Pharmacy,
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VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Formulation and evaluation of medicated suture from coconut fiber*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Mr. PARMESHWAR DEVIDASRAO MIRASE at Indira College of Pharmacy, Vishnupuri, Nanded under your supervision in the partial fulfillment of the requirement for the award of degree of Master of Pharmacy in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/03/2022

Place: Nanded

Dr. S. B. Jadhav

Research Guide

Indira College of Pharmacy,

Vishnupuri, Nanded

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**Formulation and Evaluation of
Transfersomes for the Treatment of *Acne
vulagris***

**Dissertation submitted to Swami Ramanand Teerth
Marathwada University Nanded**

**In partial fulfilment of
the requirements for the degree of
MASTER OF PHARMACY
in
PHARMACEUTICS**

Submitted By

Mr. Onkar Malharrao Deshmukh

Guided By

Dr. S.B Jadhav

**Head, Department of Pharmaceutics
Indira College of Pharmacy, Nanded**

Co- Guided by

Pathan Azher Khan

Pristyn Research Solutions, Aurangabad



**DEPARTMENT OF PHARMACEUTICS
Indira College of Pharmacy,
Vishnupuri, Nanded**

AUGUST 2022

**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this dissertation entitled **"Formulation and Evaluation of Transferosomes for the Treatment of *Acne vulgaris*"** submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Mr. Onkar Malharrao Deshmukh at Indira College of Pharmacy, Vishnupuri, Nanded under the supervision of **Dr S.B. Jadhav** in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of him is original and Bonafied.

Date: 10/08/2022

Place: Nanded

Dr. S.B Jadhav
Research Guide

Head Department of Pharmaceutics

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"FORMULATION AND EVALUATION OF SUTURE
FROM PSEUDO STEAM BANANA FIBER"**

*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*



**MASTER OF PHARMACY
IN
PHARMACEUTICS**

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MR. KARAMUNGE UMESH SHIVHAR

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Department of pharmaceuticals Indira
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DEPARTMENT OF PHARMACEUTICS

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2021-22


**Principal
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INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Formulation And Evaluation Of Suture From Pseudo Steam Banana Fiber*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Mr. Umesh Shivhar Karanunge* at Indira College of Pharmacy, Vishnupuri, Nanded under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded

Mr. Shinde S.R.
Research Guide

Indira College of Pharmacy,
Vishnupuri, Nanded

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

**"Coated Banana Pseudo-Stem Fiber Guaze
With Ag/ZnO/Chitosan Nanocomposite as a
Modern Wound Dressing "**



*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*

**MASTER OF PHARMACY
IN
PHARMACEUTICS**

Submitted By

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Mr. Shinde Suraj Ramchandrarao


Asso. Professor

**Indira College of Pharmacy,
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AUGUST-2022


**Principal
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Sahayog sevabhavi sansthan's
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VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Pseudo Stem Fiber Composite with Ag-ZnO Chitosan Nanocomposite As a Modern wound dressing*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Mr. Kiran Vinthal Gunde, in the department of Pharmaceutics at Indira College of Pharmacy, Vishnupuri, Nanded under the supervision of Mr. Shinde S. R. in the partial fulfilment of the requirement for the award of degree of Master of Pharmacy in the subject Pharmaceutics. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis.

Date: 12/08/2022.

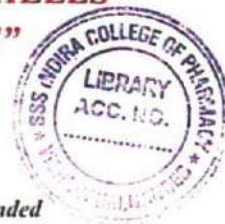
Place: Nanded.

Asso. Professor

Mr. Shinde S. R.
Indira College of
Pharmacy, Vishnupuri, Nanded.

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"DESIGN OF VEGETABLE CAPSULE SHELLS
BY USING NATURAL POLYMERS"**



*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University, Nanded
In Partial Fulfilment of The
requirement For the award of
the degree of*

**MASTER OF
PHARMACY**

**IN
PHARMACEUTICS**

Submitted By

MR. DETHE SAURABH SANJAY

Guide/Mentor

Dr. YADAGIRI PHALGUNA




Associate Professor

Indira College of pharmacy, Vishnupuri, Nanded.

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August 2022


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INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied " Design of Vegetable capsule shells by using Natural polymers " in this thesis submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Mr Dethe Saurabh Sanjay*, at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded



Dr . Yadagiri Phalguna

Research Guide

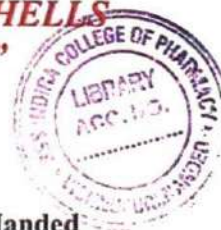
Associate Professor

Indira College of Pharmacy,

Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

***"DESIGN OF VEGETABLE CAPSULE SHELLS
BY USING NATURAL POLYMERS"***



Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
*In Partial Fulfilment of The requirement
for the award of the degree of*

**MASTER OF PHARMACY
IN
PHARMACEUTICS**

Submitted By

Ms. VASUNDHARA CHANDRASHEKHAR KADAM

Guide/Mentor

Dr. YADAGIRI PHALGUNA

Associate Professor

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INDIRA COLLEGE OF PHARMACY

VISHNPURI, NANDED.

August 2022

**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.**

SAHAYOG SEVABHAVI SANSTHAN'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied "Design of Vegetable Capsule Shells by Using Natural Polymers" in this thesis submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Ms. Vasundhara Chandrashekhar Kadam, at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfillment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10-08-2022

Place: Nanded


Dr. Yadagiri Phalguna

Research Guide Associate Professor

Indira College of Pharmacy,

Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"FORMULATION AND EVALUATION OF
BANANA FIBER GUAZE AS MODERN
WOUND DRESSING"**

*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of The requirement
For the award of the degree of*

**MASTER OF PHARMACY
IN
PHARMACEUTICS**

Submitted By

Mr. Dhiraj Narsing Panchal

Guide/Mentor

Dr. Jadhav S.B (M.Pharm, PhD.)

Head, Department of pharmaceutics
Indira College of pharmacy,
Vishnupuri, Nanded.




DEPARTMENT OF PHARMACEUTICS

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED.

AUGUST 2022


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

Sahayog sevabhavi sansthan's

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied in this dissertation entitled "*Formulation and Evaluation Of Banana fiber guaze as a Modern wound dressing*," submitted to Swami Ramanand Theerth Marathwada University, Nanded was carried out by *Narsing Panchal* at Department of pharmaceutical of Indira College of Pharmacy, Vishnupuri, Nanded Under my supervision *Dr. Jadhav S.B* in the partial fulfilment of requirement for the award of degree of Master of Pharmacy In the subject *Pharmaceutics*. The extent and source of information/ material as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of him is original and bonafide.

Date:- 10/08/2022

Place:- Nanded.

Dr. Jadhav S. B
Research Guide
Indira College Of Pharmacy,
Vishnupuri, Nanded

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.



Submitted By

Guide/Mentor

Associate Professor

Indira College of pharmacy,Vishnupuri,Nanded.



VISHNPURI, NANDED.

August 2022

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Ans

Sahayog sevabhavi sansthan's

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied " Design of Vegetable capsule shells by using Natural polymers " in this thesis submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Mr. Mekewad Krishna Hanumanth*, at **Indira College of Pharmacy, Vishnupuri, Nanded** under your supervision in the partial fulfilment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Pharmaceutics**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10/08/2022

Place: Nanded


Dr . Yadagiri Phalguna

Research Guide

Associate Professor

Indira College of Pharmacy,

Vishnupuri, Nanded.



Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"DESIGN OF VEGETABLE CAPSULE SHELLS BY
USING NATURAL POLYMERS"**



*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded*

*In Partial Fulfilment
Of The requirement For the award of the
degree of*

MASTER OF PHARMACY IN PHARMACEUTICS

Submitted By

Ms. RAJNANDINI RAJU DYADE

Guide/Mentor

Dr. YADAGIRI PHALGUNA

Associate Professor

Indira College of Pharmacy, Vishnupuri, Nanded.



INDIRA COLLEGE OF PHARMACY

VISHNPURI, NANDED.

2021-22


**Principal
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Vishnupuri, Nanded-08.**

Sahayog sevabhavi sansthan's

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED



CERTIFICATE

This is to certify that the research work embodied Design of Vegetable capsule shells by using Natural polymers in this thesis submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Ms. Rajnadini Raju Dyade, at Indira College of Pharmacy, Vishnupuri, Nanded under your supervision in the partial fulfilment of the requirement for the award of degree of Master of Pharmacy in the subject Pharmaceutics. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by him in the thesis. The research work of his is original and Bonafide.

Date: 10-08-2022

Place: Nanded


Dr. Yadagiri Phalguna

Research Guide

Associate Professor

Indira College of Pharmacy,

Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

**“QUALITATIVE & QUANTITATIVE EVALUATION OF CAREYA
ARBOREA FRUIT BY USING CHROMATOGRAPHIC &
SPECTROSCOPIC TECHNIQUES”**

Dissertation submitted to the
SWAMI RAMANAND TEERTH MARATHAWADA UNIVERSITY, NANDED
In the partial fulfilment of the requirement for the award of the degree of
MASTER OF PHARMACY

In
QUALITY ASSURANCE

Submitted By

Miss. Sakhare Vaishnavi Ramesh

Research Guide

Miss. H. N. Khan

Assistant Professor

Indira College of Pharmacy, Vishnupuri, Nanded

Industrial Guide

Digambar P. More




Department of Quality Assurance

INDIRA COLLEGE OF PHARMACY

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2021-22


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Sahayog Sevabhavi Santha's

INDIRA COLLEGE OF PHARMACY

Sahayog Educational Campus, Vishnupuri, Nanded – 431606

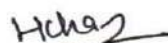


CERTIFICATE BY GUIDE

This is to certify that the research work embodied in this thesis entitled "QUALITATIVE & QUANTITATIVE EVALUATION OF CAREYA ARBOREA FRUIT BY USING CHROMATOGRAPHIC & SPECTROSCOPIC TECHNIQUES" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by Miss.Sakhare Vaishnavi Ramesh in the Department of Quality Assurance of Indira College of Pharmacy, Vishnupuri, Nanded under the supervision of Miss. H.N.Khan for the partial fulfilment of the requirement for the award of degree of Master of Pharmacy in the subject Pharmaceutical Quality Assurance. The extent and source of information/ materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of her is original and bonafide.

Date:


Place: Nanded


Miss. H. N. Khan

Assistant Professor

Indira College of Pharmacy,

Vishnupuri, Nanded


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"DEVELOPMENT AND VALIDATION OF ANALYTICAL
METHODS FOR THE ESTIMATION OF LINEZOLID,
PRETOMANID AND BEDAQUILINE IN BULK AND IN
PHARMACEUTICAL DOSAGE FORM"**

**Dissertation submitted to the
SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
NANDED**

**In partial fulfillment of the requirement for the award of the degree of
MASTER OF PHARMACY**

**IN
QUALITY ASSURANCE**

**Submitted By
Miss. Patange Anjali Balasaheb**

Guide/ Mentor


Dr. Pallavi A. Kamble

**Associate Professor
(Dept. of Pharmaceutical Chemistry)
Indira College of Pharmacy
Vishnupuri, Nanded.**



**DEPARTMENT OF QUALITY ASSURANCE
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.**

**Academic Year
2021-2022**


**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.**

Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled *"Development And Validation of Analytical Method For The Estimation Linezolid, Pretomanid and Bedaquiline In Bulk And In Pharmaceutical Dosage Form"* submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Miss. Patange Anjali Balasaheb* at Indira College of Pharmacy, Vishnupuri, Nanded under my supervision in the partial fulfillment of the requirement for the award of degree of Master of Pharmacy in the subject Quality Assurance. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of her is original and Bonafide.

Date : 17/08/2022

Place : Nanded

Dr. Pallavi A. Kamble

Research Guide

Indira College of Pharmacy,

Vishnupuri, Nanded.

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"DEVELOPMENT AND VALIDATION OF ANALYTICAL METHODS FOR
THE SIMULTANEOUS ESTIMATION OF EMPAGLIFLOZIN AND
LINAGLIPTIN IN BULK AND IN PHARMACEUTICAL DOSAGE FORM"**

Dissertation submitted to the

SWAMI RAMANAD TEERTH MARATHWADA UNIVERSITY, NANDED

In partial fulfillment of the requirement for the award of the degree of

MASTER OF PHARMACY

IN

QUALITY ASSURANCE

Submitted By

Miss. Sawant Supriya Diliprao

Guide/ Mentor

Dr. Pallavi A. Kamble

Associate Professor

(Dept. of Pharmaceutical Chemistry)

Indira college of Pharmacy,

Vishnupuri, Nanded.



DEPARTMENT OF QUALITY ASSURANCE

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Sahayog Sevakbhai Sanstha's
INDIRA COLLEGE OF PHARMACY,
VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Development and Validation of Analytical Method for The Simultaneous Estimation of Empagliflozin and Linagliptin in Bulk and in Pharmaceutical Dosage Form*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Miss. Sawant Supriya D.* at Indira College of Pharmacy, Vishnupuri, Nanded under my supervision in the partial fulfillment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Quality Assurance**. The extent and source of information / materials has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of her is original and Bonafide.


Date: 10/8/22

Place: Nanded

Dr. Pallavi A. Kamble

Research Guide

Indira College of Pharmacy,
Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

**“ANALYTICAL METHOD DEVELOPMENT AND
VALIDATION OF AZELNIDIPINE AND TELMISRTAN BY
USING UV & HPLC TECHNIQUE”**

Synopsis submitted to the
**SWAMI RAMANAND TEERTH MARATHWADA
UNIVERSITY, NANDED**

**In partial fulfillment of the requirement
For the award of the Degree of
MASTER OF PHARMACY
IN
QUALITY ASSURANCE**

Submitted By
Miss. MAZALKAR KOMAL K.

Guide/ Mentor

Miss. Khan H. N.
Associate Professor
Indira College of Pharmacy,
Vishnupuri, Nanded.



Department of Quality Assurance
INDIRA COLLEGE OF PHARMACY,
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VISHNUPURI, NANDED.




CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Analytical Method Development And Validation Of Azelnidipine And Telmisartan By Using UV And HPLC Technique*" submitted to Swami Ramanand Teerth Marathwada University, Nanded was carried out by *Miss. Mazalkar Komal K.* in the Department of Quality Assurance of Indira College of Pharmacy, Vishnupuri, Nanded under the supervision of *Miss. Khan Hajera* in the partial fulfillment of the requirement for the award of degree of Master of Pharmacy in the subject **Quality Assurance**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis.

Date: 17/08/2022

Place: Nanded.

Miss. Khan Hajera
Research Guide
Indira College of Pharmacy,
Vishnupuri, Nanded.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

*"Development and Validation of Analytical Methods for the
Simultaneous Estimation of Montelukast & Bilastine"*

Dissertation submitted to the

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
NANDED

*In partial fulfillment of the requirement for the
award of the Degree of*

MASTER OF PHARMACY

IN

QUALITY ASSURANCE



Submitted by

Miss. Vaishnavi Gulabrao Sarje

Guide / Mentor

Miss. Khan Hajera N.

Associate Professor

Indira College of Pharmacy,
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Department of Quality Assurance

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VISHNUPURI, NANDED.



CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "*Development And Validation Of Analytical Methods For The Simultaneous Estimation Of Montelukast & Bilastine*" submitted to **Swami Ramanand Teerth Marathwada University, Nanded** was carried out by *Miss. Vaishnavi Gulabrao Sarje* at **Indira College of Pharmacy, Vishnupuri, Nanded** under my supervision in the partial fulfillment of the requirement for the award of degree of **Master of Pharmacy** in the subject **Quality Assurance**. The extent and source of information / materials as has been obtained by candidate from other sources has been duly acknowledged by her in the thesis. The research work of her is original and Bonafide.

Date:

Place: Nanded

H.K. Hajera

Miss. Khan Hajera

Research Guide

Indira College of Pharmacy,

Vishnupuri, Nanded

[Signature]

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-431 006.

B. Pharm Library Assignment/ Project work

In vitro anthelmintic efficacy of phyllanthus emblica L. against Indian adult earth worms (Pheretima Posthuma)

Submitted for the partial fulfillment of fourth year B pharm Degree

Submitted by

Ashwini B. Koturwar

Lakshmi G. Khansole

Sushil J.Kshirsagar

Akash A. Kudale

Amey S. Lakde

Under the Guidance of

Mr. Karle P P (M.Pharm)

(Dept. Of Pharmacology)



Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606(M.S.)

Submitted to

Swami Ramanand Teerth Marthwada University, Nanded

2021-2022



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**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.**



स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नंदेड

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
VISHNUPURI, NANDED – 431606, MAHARASHTRA STATE, INDIA

CERTIFICATE

This is to certify that

- 1) KOTURWAR ASHWINI BALAJI
- 2) KHANSILE LAKSHMI GOPINATH
- 3) KSHIRSAGAR SUSHIL JAYWANT
- 4) KUDHALE AKASH ANIL
- 5) LAKDE AMEY SANTOSH

has Satisfactorily carried out the project work entitled “In-vitro anthelmintic efficacy of Triphala against Indian adult earth worms (*Pheretima posthuma*).” prescribed by swami Ramanand Teerth Marathwada University, Nanded For the Final Year Bachelor of Pharmacy (B.Pharm) in the Subject Pharmacology during academic year 2021-2022



Place : Nanded

Date : 20/7/22

Guide

Mr. Karale p p

(Dept. Of pharmacology)

Assistant Professor
Indra College of Pharmacy
Vishnupuri, Nanded-06.

2 | Page

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Principal
Indra College of Pharmacy
Vishnupuri, Nanded-06.

Preparation And Evaluation Of Herbal Hand wash

A
PROJECT WORK ON
PREPARATION AND EVALUATION OF HERBAL HAND WASH

Submitted for the Partial fulfilment of fourth year B. pharmacy Degree

Submitted By

Mr. Patange Omkar Taterao

Miss. Pawar Neha Pramod

Mr. Pedgulwar Govind Dattatray

Mr. Ramlod Mayuresh Maroti

Mr. Rathod Madan Ramesh

(B. pharm final year)

Guided By

Mr. Pravin Nandkumar Muli

[Dept . of Pharmaceutical Chemistry]



Sahayog Sevabhavi Sanstha's

Indira College of Pharmacy

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Submitted to

Swami Ramanand Teerth Marathwada University Nanded

2021-2022

Principal
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Sahayog Sevabhavi Sanstha's
Indira College of Pharmacy
Vishnupuri, Nanded-431606(M.S.)

Certificate

This is to certify that Mr.Patange Omkar Taterao (UD5202), Miss.Pawar Neha Pramod (UD5203) , Mr. Pedgulwar Govind Dattatray (UD5204),Mr. Ramlod Mayuresh Maroti (UD5205),Mr. Rathod Madan Ramesh (UD5206) he/she has satisfactorily carried out the project work entitled "Preparation and Evaluation of Herbal Hand Wash" prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the Final Year B. Pharmacy during Academic Year 2021-22.




Place: - Nanded

Date:- 26/07/2022


Guide

Mr. Pravin Nandkumar Muli

[Dept. of Pharmaceutical Chemistry]
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A

PROJECT WORK ON
PREPARATION AND EVALUATION OF HERBAL FACEWASH

Submitted for the Partial fulfilment of fourth year B. pharmacy Degree

Submitted By

Miss. Ukinkar Pratidnya Gangadhar (UD5227)

Mr. Vasu Pavankumar Yashwantrao (UD5228)

Miss. Wakode Smita Vishwanath (UD5229)

Mr. Yewale Shivprasad Narayan(UD5230)

(B. pharm final year)

Guided By

Mr. Pravin Nandkumar Muli

[Dept. of Pharmaceutical Chemistry]



Sahayog Sevabhavi Sanstha's

Indira College of Pharmacy

Vishnupuri, Nanded-431606(M.S.)



Submitted to

Swami Ramanand Teerth Marathwada University Nanded

2021-2022

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Indira College of Pharmacy

Vishnupuri, Nanded-431606(M.S.)

Certificate

This is to certify that Miss. Ukinkar Pratidnya Gangadhar, Mr. Vasu Pavankumar Yashwantrao, Miss. Wakode Smita Vishwanath, Mr. Yewale Shivprasad Narayan has satisfactorily carried out the project work entitled "Preparation and Evaluation of Herbal Face Wash" prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the Final Year B. Pharmacy during Academic Year 2021-22.



Place: - Nanded

Date:- 26/07/2022

Guide

Mr. Pravin Nandkumar Muli

[Dept. of Pharmaceutical Chemistry]

Assistant Professor
Indira College of Pharmacy
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A handwritten signature in green ink.

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Anthelmintic potential of *Helicteres Isora* bark against *Pheretima Posthuma*

A project work submitted for the partial fulfillment of requirement for the VIIIth semester of B. Pharmacy Degree

Submitted By

Mr. Shinde Akash Karbhari
Mr. Shinde Om Ganesh
Miss.Sharma Gayatri Balkishan
Mr.Shelke Vijay Ashokrao
(B. Pharm. final year)

Guided By

Mr. Karle Pravin P.
(Dept. of Pharmacology)



Sahayog Sevakhavi Sanstha's

Indira College of Pharmacy

Vishnupuri, Nanded-431606(M.S.)



Swami Ramanand Teerth Marathwada University, Nanded

2021-2022

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Indira College of Pharmacy
Vishnupuri, Nanded-04.



Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606 (M.S.)

Certificate

*This is to certify that Mr. Shinde Akash Karbhari, Mr. Shinde Om Ganesh, Miss. Sharma Gayatri Balkishan, Mr. Shelke Vijay Ashokrao has satisfactorily carried out the project work entitled "**Anthelmintic potential of Helicteres Isora bark against Pheretima Posthuma**" prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the Final Year B. Pharmacy during Academic Year 2021-22.*



Place: - Nanded

Date: - 20/07/2022

Guide

Mr. Karle Pravin P.
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
Project Report
ON

**"PRELIMINARY PHYTOCHEMICAL ANALYSIS OF AQUEOUS EXTRACT OF
Malkangani leaves"**

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

SAWANDKAR NAMDEV LAXMAN
SAWANT ABHIJEET BHIMRAO
SAWANT YASHORATNA BHIMRAO
SHAIKH SHOAIB SHADULLA
SHAIKH TAUQEER AQEEB
[B. PHARM FINAL YEAR]

Guided by


Dr. JAMEEL AHMED
M. Pharm; Ph. D.
[Head of Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)



Submitted to
SWAMI RAMANAND TEERTH MARATHIWADA UNIVERSITY
NANDED
2021-2022


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.



Sahayog Sevakbavi Sanstha's
INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that
SAWANDKAR NAMDEV LAXMAN
SAWANT ABHIJEET BHIMRAO
SAWANT YASHORATNA BHIMRAO
SHAIKH SHOAIB SHADULLA
SHAIKH TAUQEER AQEEB

has satisfactorily carried out the project work entitled "**Preliminary Phytochemical Analysis of Aqueous Extract of *Malkangani leaves***" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy Semester VIII** during academic year **2021-2022**.

Place : Nanded

Date : 26/07/2022




Guide

Dr. Jameel Ahmed
[Head, Dept. of Pharmacognosy]


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-08.

A
Project Report
ON

**FORMULATION AND EVALUATION OF SOLID DISPERSION
FOR POORLY WATER SOLUBLE DRUG**

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

1. DAWARE KRISHNA BAPURAO
 2. DESHMUKH AJINKYA SANJAYRAO
 3. DHANJE SUPRIYA VASANT
 4. DHONDE SHIVANI SHIVSAMBH
 5. DUKARE JYOTI GIRAJI
- [B. PHARM FINAL YEAR]

Guided by

Dr.Y. PHALGUNA

M. Pharm., Ph. D.



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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Submitted to
SWAMI RAMANAND TEERTH MARATHIWADA UNIVERSITY
NANDED
2021-2022

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Principal
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Vishnupuri, Nanded-08.



Sahayog Sevabhavi Sanstha's

INDIRA COLLEGE OF PHARMACY

Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that

1. DAWARE KRISHNA BAPURAO
2. DESHMUKH AJINKYA SANJAYRAO
3. DHANJE SUPRIYA VASANT
4. DHONDE SHIVANI SHIVSAMBH
5. DUKARE JYOTI GIRAJI

has satisfactorily carried out the project work entitled

"FORMULATION AND EVALUATION OF SOLID DISPERSION FOR
POORLY WATER SOLUBLE DRUG" prescribed by Swami Ramanand
Teerth Marathwada University, Nanded for the Final Year B. Pharmacy
Semester VIII during academic year 2021-2022.

Place : Nanded

Date : 25/07/2022



Guide

Dr. Y. PHALGUNA

M. PHARM, Ph.d.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
Project Report
ON

**EXTRACTION, STANDARDIZATION & ANTIOXIDANT SCREENING
OF OIL OF SEMECARPUS ANACARDIUM SEEDS**

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

Sumedh Digambarrao Joshi
Pooja Subhashrao Kadam
Praful Taterao Kadam
Harsha Marotirao Kalaskar
Ayush Gangadhar Kale
[B. PHARM FINAL YEAR]

Guided by

Dr. Pallavi A. Kamble
(M. Pharm; Ph. D.)
[Dept. of Pharmaceutical chemistry]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



Submitted to

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY

NANDED

2021-2022

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.



Sahayog Sevabhavi Sanstha's
INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that Sumedh Digambarrao Joshi, Pooja Subhashrao Kadam, Praful Taterao Kadam, Harsha Marotirao Kalaskar, Ayush Gangadhar Kale has satisfactorily carried out the project work entitled "**EXTRACTION, STANDARDIZATION & ANTIOXIDANT SCREENING OF OIL OF SEMECARPUS ANACARDIUM SEEDS**" prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the **Final Year B. Pharmacy Semester VIII** during academic year 2021-2022.

Place : Nanded

Date : 25 / 07/2022



Guide

Dr. Pallavi A. Kamble

[Dept. of Pharmaceutical chemistry]
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

**"DETERMINATION OF CASEIN PRESENT IN DIFFERENT
MILK SAMPLES"**



Dissertation submitted to the
Swami Ramanand Teerth Marathwada University, Nanded
In Partial Fulfilment of Fourth year B.Pharmacy Degree

Submitted By

Miss. Shailaja Nehru Sontakke
Mr. Shubham Kalidas Suryawanshi
Mr. Sopan Nanarao Suryawanshi
Mr. Sagar Sanjay Tapdiya
Miss. Tanuja Kashinath Timewar

Guided By

Mr. Syed Ansar Ahmed


(Asst. Professor)

M.Pharm (Pharmaceutical Chemistry)



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Certificate

This is certify that Miss. Shailaja Nehru Sontakke, Mr. Shubham Kalidas Suryawanshi, Mr. Sopan Nanarao Suryawanshi, Mr. Sagar Sanjay Tapdiya, Miss. Tanuja Kashinath Timewar has satisfactorily carried out the project work entitled "DETERMINATION OF CASEIN PRESENT IN DIFFERENT MILK SAMPLES" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B. Pharmacy Semester VIII during academic year 2021-2022.

Place :Nanded

Date : 24/07/2022



Guide

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"NIOSOMES: A NOVEL DRUG DELIVERY SYSTEM"



Dissertation submitted to the

Swami Ramanand Teerth Marathwada University, Nanded
In Partial Fulfilment of Fourth year B.Pharmacy Degree

Submitted By

Mr. Dhirajkumar Bharat Maske
Mr. Mohammad Faizan Farooqui
Miss. Urmila Mohanrao More
Miss. Shraddha Shivaji Nartwar
Mr. Ajay Marotirao Pargewar

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Certificate

This is certify that **Mr.Dhirajkumar Bharat Maske, Mr.Mohammad Faizan Farooqui, Miss.Urmila Mohanrao More, Miss. Shraddha Shivaji Nartwar, Mr. Ajay Marotirao Pargewar** has satisfactorily carried out the project work entitled "**NIOSOMES:A NOVEL DRUG DELIVERY SYSTEM**" prescribed by Swami Ramanand Teerth Marathwada University Nanded, for the **Final Year B.Pharmacy Semester VIII** during academic year **2021-2022**.

Place :Nanded

Date : 26/07/2022




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**"STABILITY INDICATING ANALYTICAL METHOD DEVELOPMENT &
VALIDATION OF ANTI-VIRAL DRUG BY USING UV TECHNIQUES"**



*Dissertation submitted to the
Swami Ramanand Teerth Marathwada University Nanded
In Partial Fulfilment of Fourth year B.Pharmacy Degree*

Submitted By

Mr. Prasad Ashokrao Kalyankar

Miss. Shweta Balajirao Kamble

Mr. Kamran Khan Hameed Khan

Miss. Vaishnavi Santosh Kawale

Mr. Bhagwat Daulatrao Kawle.

Guided By

Miss. H.N. Khan

Assistant Professor

**Indira College of pharmacy,
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INDIRA COLLEGE OF PHARMACY
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Certificate

This is certify that Mr. PRASAD ASHOKRAO KALYANKAR, MISS. SHWETA BALAJIRAO KAMBLE, MR. KAMRAN KHAN HAMEED KHAN, MISS.VAISHNAVI SANTOSH KAWALE, MR.BHAGWAT DAULATRAO KAWLE. has satisfactorily carried out the project work entitled "STABILITY INDICATING ANALYTICAL METHOD DEVELOPMENT & VALIDATION OF ANTI-VIRAL DRUG BY USING UV TECHNIQUES" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B. Pharmacy Semester VIII during academic year 2021-2022.

Place : Nanded

Date : 25/07/22



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Vishnupuri, Nanded-06.

A
Project Report
ON

**"PRELIMINARY PHYTOCHEMICAL ANALYSIS OF AQUEOUS EXTRACT OF
Ghaf Leaves"**

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

ATHAWALE GUNARATNA JANARDHAN
BETKAR RUSHIKESH MADHAV
BHUSAWALE SANDIP AJABRAO
BISMILE BALAJI RAMRAO
CHATE MAHESH RAJENDRA
[B. PHARM FINAL YEAR]

Guided by


Dr. JAMEEL AHMED
M. Pharm; Ph. D.
[Head of Dept. of Pharmacognosy]



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Submitted to
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NANDED
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BISMILE BALAJI RAMRAO
CHATE MAHESH RAJENDRA

has satisfactorily carried out the project work entitled "**Preliminary
Phytochemical Analysis of Aqueous Extract of *Ghaf* Leaves**" prescribed by
Swami Ramanand Teerth Marathwada University Nanded for the **Final Year
B. Pharmacy Semester VIII** during academic year **2021-2022.**

Place : Nanded

Date : 26/07/2022




Gulde

Dr. Jameel Ahmed

[Head, Dept. of Pharmacognosy]


Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

5

A Project Report On
**"USE OF UV-VISIBLE SPECTROSCOPIC METHOD FOR THE ASSAY
OF DRUG IN THEIR FORMULATOIN"**

Submitted to the



Swami Ramanand Teerth Marathwada University Nanded

In Partial Fulfilment of Fourth Year B. Pharmacy Degree

Submitted By

MR. GORE NARENDRA AMBADASRAO

MISS.GORE TEJASWINI RAMESHRAO

MR. JAISWAL SHUBHAM GIRIDHARILAL

B. PHARM FINAL YEAR

Guided By

MR. MOHAMMAD ZAMEERUDDIN

M. Pharm, (Ph. D.)

[Head, Dept. of Pharmaceutical Chemistry]




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INDIRA COLLEGE OF PHARMACY

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Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is certify that **MR.GORE NARENDRA AMBADASRAO** has satisfactorily carried out the project work entitled "Use of UV-Visible spectroscopic method for the assay of drug in their formulation"prescribed by Swami RamanandTeerthMarathwada University Nanded for the Final Year B. Pharmacy Semester VIII during academic year 2021-2022.

Place :Nanded

Date : 25/07 /2022



E. H. ...
Guide 25/07/22

Mr. Mohammed Zameeruddin

(Assistant Professor)

Head Dept. Pharmaceutical Chemistry
SSS Indira College of Pharmacy
Vishnupuri, Nanded-06

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Principal
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Vishnupuri, Nanded-06.

A Project Report On

**"USE OF UV-VISIBLE SPECTROSCOPIC METHOD FOR THE ASSAY OF
DRUG IN THEIR FORMULATOIN"**

Submitted to the



Swami Ramanand Teerth Marathwada University Nanded

In Partial Fulfilment of Fourth Year B. Pharmacy Degree

Submitted By

MR. FAROOQUI FAYZAN AHMED FAHEEM AHMED

MISS. GHANDGE PALLAVI SARJERAO

B. PHARMACY 4TH YEAR

Guided By

MR. MOHAMMAD ZAMEERUDDIN

M. Pharm. (Ph. D.)

[Head, Dept. of Pharmaceutical Chemistry]



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Certificate

This is certify that Mr. Farooqui Fayzan Ahemad Faheem Ahmed has satisfactorily carried out the project work entitled "Use of UV-Visible spectroscopic method for the assay of drug in their formulation" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B. Pharmacy Semester VIII during academic year 2021-2022.

Place : Nanded

Date : 25/07 / 2022




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Project Report
2020-2021

DIABETES

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Warvate Priyanka Rajendra
[B. PHARM FINAL YEAR]

Guided by

Mr. KADAM R.K
Asst. Professor
[Dept. of Pharmacology]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)



Submitted to
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2020-2021



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Certificate

This is to certify that **Warvate Priyanka Rajendra** has satisfactorily carried out the project work
entitled "**DIABETES**" prescribed by Swami Ramanand Teerth Marathwada University
Nanded for the **Final Year B. Pharmacy Semester VIII** during academic year **2020-2021**.

Place : Nanded

Date : 31 / 07 / 2021



Guide

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R.K. Kadam

Assistant Professor
Indira College of Pharmacy
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Vishnupuri, Nanded-06.

A
Project Report
ON

MIGRAINE

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

GANRAJ CHANDRAO SAKHARE
[B.PHARM FINAL YEAR]

Guided by

Mr. KADAM R.K

[Dept. of Pharmacology]



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This is to certify that **SAKHARE GANRAJ CHANDRAO** has satisfactorily carried out the project work entitled "**MIGRAINE**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy Semester VIII** during academic year 2020-2021.

Place : Nanded

Date : 31/07/2021



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A
Project Report
ON

ASTHMA

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mr. Vishal Kondiba Kadam
[B.PHARM FINAL YEAR]

Guided by

Mr. SAWALE P. V

Asst. professor [Dept. of pharmacognosy]



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This is to certify that **Mr. Vishal Kondiba Kadam** has satisfactorily carried out the project work entitled "**ASTHMA**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy Semester VIII** during academic year 2020-2021.

Place : Nanded

Date 28/07/2021




Guide

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A
Project Report
ON

Topic Name: CHEMOTHERAPY OF ANTINEOPLASTIC DRUG

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

WANJE SHRIKANT VITTHALRAO
[B.PHARM FINAL YEAR]

Guided by

Ms. Gajale M. S.

[Head, Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S
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This is to certify that WANJE SHRIKANT VITTHALRAO has satisfactorily carried out the project work entitled "CHEMOTHERAPY OF ANTINEOPLASTIC DRUG" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B Pharmacy Semester VIII during academic year 2020-2021.

Place :Nanded

Date 31/ 07/2021




Guide

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Principal
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Project Report

2020-2021

ROLE OF PHARMACIST IN VACCINE DEVELOPMENT

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

PRANITA PRALHAD LOKHANDE

[B. PHARM FINAL YEAR]

Guided by

Dr. Pallavi A. Kamble

M. Pharm (Ph.D.)

[Dept. of Pharmaceutical Chemistry]



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Certificate

This is to certify that **PRANITA PRALHAD LOKHANDE** has satisfactorily carried out the project work entitled "**Role of Pharmacist in Vaccine Development**" prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the **Final Year B. Pharmacy Semester VIII** during academic year **2020-2021**.

Place : Nanded

Date : 02/08/2021




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[Department of Pharmaceutical Chemistry]

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23
Project Report
On

CANCER

Submitted for the Partial fulfillment of Fourth year B.Pharm. Degree

Submitted by,

Pratik Suryakant Kadam

[B.PHARM FINAL YEAR]

Guided by,

Asst. Professor Kadam R.K.

[Assistant Professor]



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This is to certify that *Pratik Suryakant Kadam* has satisfactorily carried out the project work entitled **CANCER** Prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the Final Year B.Pharmacy Semester VIII during academic year 2020-2021.

Place : Nanded

Date : 31 / 07/2021



Guide,

Mr. Asst. Professor Kadam R.K.

R.K. Kadam
Assistant Professor
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BIOMEDICAL WASTE MANAGEMENT

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

SAGAR GOVIND JADHAV

[B. PHARM FINAL YEAR]

Guided by

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Place : Nanded

Date : 02/08/2021



Pallavi A Kamble
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7

A
Project Report
ON

“ROLE OF NANOCRYSTALS AND NANOSUSPENSION IN DRUG DELIVERY
SYSTEM”

Topic Name

Submitted for the Partial fulfillment of Fourth year B. Pharm Degree

Submitted by

PRADNYA VISHWAMBHAR BOINWAD
[B. PHARM FINAL YEAR]

Guided by

Ms. SONALI A. BHAGAT
Assistant Professor
Department of Pharmaceutics



SAHAYOG SEVABHAVI SANSTHA'S
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Certificate

This is to certify that **PRADNYA VISHWAMBHAR BOINWAD** has satisfactorily carried out the project work entitled **ROLE OF NANOCRYSTALS AND NANOSUSPENSION IN DRUG DELIVERY SYSTEM** prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy** in the subject **Pharmaceutics (Library Project)** during academic year **2020-2021**.

Place: Nanded

Date: 03/08/2021



Guide
Sonalika Bhagat
Ms. SONALIKA BHAGAT

Assistant Professor

[Department of Pharmaceutics]
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal
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Vishnupuri, Nanded-06.

19

A
Project Report
ON
"MONITORING OF THE MEDICATION DISTRIBUTION"
Topic Name

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

INGLE YOGESH MAROTI
[B. PHARM FINAL YEAR]

Guided by
Ms. SONALI A. BHAGAT
Assistant Professor
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SAHAYOG SEVABHAVI SANSTHA'S
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This is to certify that **INGLE YOGESH MAROTI** has satisfactorily carried out the project work entitled "**MONITORING OF THE MEDICATION DISTRIBUTION**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy** in the subject **Pharmaceutics (Library Project)** during academic year 2020-2021.

Place: Nanded

Date: 31/07/2021



Guide

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A
Project Report
ON
Green synthesis of nanoparticle

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by
LOKHANDE ANKITA RAJESH

[B. PHARM FINAL YEAR]

Guided by
Ms. SONALI A. BHAGAT
Assistant Professor
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Certificate

This is to certify that **LOKIHANDE ANKITA RAJESH** has satisfactorily carried out the project work **Green Synthesis of Nanoparticle** entitled prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy** in the subject **Pharmaceutics (Library Project)** during academic year **2020-2021**.

Place: Nanded

Date: 31/07/2021



Guide

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31/07/2021

Ms. SONALI A. BHAGAT

Assistant Professor

[Department of Pharmaceutics]

Assistant Professor

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Vishnupuri, Nanded-06.

**A
Project Report
ON
POST COVID DIABETES**

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

**Submitted by
SURYAWANSHI RAMRAO RAJEIHWAR
[B. PHARM FINAL YEAR]**

**Guided by
Ms. SONALI A. BHAGAT
Assistant Professor
Department of Pharmaceutics**




**SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)**



Submitted to
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Nanded-08.**



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INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that SURYAWANSHI RAMRAO RAJESHIWAR has satisfactorily carried out the project work "POST COVID DIABETES" entitled prescribed by Swami Ramanand Teerth Marathwada University, Nanded for the Final Year B. Pharmacy in the subject Pharmaceutics (Library Project) during academic year 2020-2021.

Place: Nanded

Date: / 07/2021

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Guide

S. Bhagat
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Assistant Professor

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10

**A
Project Report
ON**

National AIDS
control program
Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by
Dasturkar Gajshri Anilrao
[B. PHARM FINAL YEAR]

Guided by
Mrs. KOMAL PRACHANDE




SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)



Submitted to
**SWAMI RAMANAND TEERTH MARATHWADA
UNIVERSITY NANDED**
2020-2021

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Vishnupuri, Nanded-06.**



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INDIRA COLLEGE OF PHARMACY
Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that **Dasturkar Gajshri Anilrao** has satisfactorily carried out the project work entitled " **National AIDS Control Program** " prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy** in the subject Research Methodology (Environmental Project) during academic year 2020- 2021.

Place : Nanded

Date : 02/ 07/2021




2-8-21
Guide

Mrs. KOMAL PRACHANDE

[Head, Dept. of Pharmaceutical Chemistry]
Assistant Professor
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Principal
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Vishnupuri, Nanded-06.

A
SEMINAR REPORT
ON

NEW APPROACH & RECENT TRADE IN MICROEMULSION

Submitted for the Partial fulfilment of fourth year
(B. Pharm Degree)

Submitted By

Mr. JADHAV YOGESH VINAYAKRAO

(B.PHARM Final year)

Guided by

Miss. MEGHA GAJALE

[Dept. of Pharmacognosy]



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INDIRA COLLEGE OF PHARMACY
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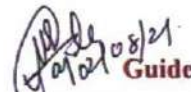
CERTIFICATE

This is to certify that **Miss. S. D. BHANDARGE** has satisfactorily carried out the assignment work entitled "**NEW APPROACH RECENT TRADE IN MICROEMULSION**" prescribed by Swami Ramanand Teeth Marathwada University Nanded for the **First Year M. Pharmacy** in the subject **Research Methodology** during the academic year **2020-2021**.

Place: NANDED

Date: 07 / 08 / 2021




Guide

Miss. MEGHA GAJALE

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Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
Project Report
ON

Herbal Cosmetics

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Shweta Balkrishna Rajnor

[B. PHARM FINAL YEAR]

Guided by

Ms. Parchande K V



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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Certificate

This is to certify that **Shweta Balkrishna Rajnor** has satisfactorily carried out the project work entitled "**Herbal Cosmetics**" Prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B. Pharmacy Semester VIII** during academic year 2020-2021.

Place : Nanded

Date : 02/08/2021



KP
08-21
Guide

Ms. Parchande K V
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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[Signature]
Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
SEMINAR REPORT
ON

NEW APPROACH & RECENT TRADE IN MICROEMULSION

Submitted for the Partial fulfilment of fourth year
(B. Pharm Degree)

Submitted By
Mr. JADHAV YOGESH VINAYAKRAO
(B.PHARM Final year)

Guided by
Miss. MEGHA GAJALE
[Dept. of Pharmacognosy]



SATYOG SEVABILAVI SANSTHA'S
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CERTIFICATE

This is to certify that **Miss. S. D. BHANDARGE** has satisfactorily carried out the assignment work entitled "**NEW APPROACH RECENT TRADE IN MICROEMULSION**" prescribed by Swami Ramanand Teeth Marathwada University Nanded for the **First Year M. Pharmacy** in the subject **Research Methodology** during the academic year **2020-2021**.

Place: NANDED

Date: 07 / 07 / 2021



 08/07/21
Guide

Miss. MEGHA GAJALE

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Assistant Professor
Indira College of Pharmacy
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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
Project Report
ON

Topic Name : INDOLE 3 CARBINOL IN CANCER

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mamidwar Mayuri Ganeshrao
[B.PHARM FINAL YEAR]

Guided by

Ms. Gajale M. S.

[Head, Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S
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Sahayog Sevabhavi Sanstha's
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Vishnupuri, Nanded 431606 (M.S.)

Certificate

This is to certify that MAMIDWAR MAYURI GANESHRAO has satisfactorily carried out the project work entitled "INDOLE 3 CARBINOL IN CANCER" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B.Pharmacy Semester VIII during academic year 2020-2021.

Place : Nanded

Date: 21/07/2021



Ms. Gajale M. S.
Guide

Ms. Gajale M. S.
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal

Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
Project Report
ON

**REGULATORY APPROVAL
PROCESS**

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by
PANDE BHAGYASHREE NAGORAO
[B. pharmacy, final year]

Guided by

Mr.
SHINDE
S.R.



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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Submitted to
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Sahayog Sevakbavi Sanstha's
INDIRA COLLEGE OF PHARMACY
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Certificate

This is to certify that Miss.PANDE BHAGYASHREE NAGORAO has satisfactorily carried out the project work entitled "REGULATORY APPROVAL PROCESS" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B.Pharmacy Semester VIII during academic year 2020-2021.

Place :Nanded

Date :27/07/2021




Guide

Mr. SHINDE S.R..

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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A
LIBRARY ASSIGNMENT ON

**“ ECOSYSTEM IS A CRUCIAL ASSEMBLY FOR
BALANCE ENVIRONMENT”**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Miss. PAWALE ASHVINI SANJAY

[B.PHARM Final year]

Guided by

Mr. SHINDE S.R.

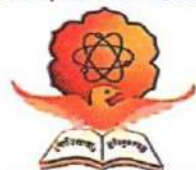
[Dept. of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

Submitted To

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2018-2019

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Vishnupuri, Nanded-06.**



Sahayog Sevabhavi Sanstha's

INDIRA COLLEGE OF PHARMACY

Sahayog Educational Campus, Vishnupuri, Nanded 431606. Dist. Nanded (Maharashtra)

CERTIFICATE

This is to certify that *Miss. Pawale Ashvini Sanjay* her satisfactorily carried out the project work entitled **ECOSYSTEM IS A CRUCIAL ASSEMBLY FOR BALANCE ENVIRONMENT** prescribed by Swami Ramanand Teerth Marathwada University Nanded for the *final Year B.Pharmacy* in the during the academic year *2018-2019*.

Place: NANDED

Date: 04/04/19



Guide

Mr. SHINDE S.R.

[Dept. of Pharmaceutics]

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-43.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-43.

46

**A
LIBRARY ASSIGNMENT
ON**

HUMAN EMBRYONIC STEM CELLS

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Mr. RANSHINGE YOGESH G.
(B.PHARM Final year)

Guided by

MISS. N.V. GHULE
[Dept. of Pharmacology]



**SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY**
VISHNUPURI, NANDED 431606 (M.S.)



Submitted to
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Vishnupuri, Nanded-06.**



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)

CERTIFICATE

This is to certify that **Mr. RANSHINGE YOGESH G.** has satisfactorily carried out the assignment work entitled "**HUMAN EMBRYONIC STEM CELLS**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject Research Methodology (LIBRARY ASSIGNMENT) during the academic year **2018-2019**.



Guide

MISS. N. V. GHULE,
Assistant Professor
(Department of Pharmacy)
Vishnupuri, Nanded-06.

Place: NANDED

Date:

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Indira College of Pharmacy
Vishnupuri, Nanded-06.

26

A

LIBRARY ASSIGNMENT ON

"HERBS USED IN DIABETES MELLITUS"

Submitted for the Partial fulfilment of fourth year B. Pharm Degree

Submitted By

MS. KALYANKASTURE SONAL TUKARAM

(B.PHARM Final year)

Guided by

MR. ARALE S.S.

[Department of Quality Assurance]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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Submitted To

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SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, Nanded 431606 (M.S.)

CERTIFICATE

This is to certify that **MISS. KALYANKASTURE SONAL TUKARAM** has satisfactorily carried out the assignment work entitled **"HERBS USED IN DIABETES MELLITUS"** "prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B.Pharmacy in the subject Pharmaceutics during the academic year 2018-2019.

Place-Nanded

Date: 06/06/2019




Guide

MR. ARALE.S.S.
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.
[Department of Quality Assurance]

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT ON

PHYTOCHEMICAL STUDIES OF CLOVE.

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mr.HABIB UBED CHAUS

[B.PHARM]
Final Year

Guided by

Miss. P.M.Kshirsagar
Assistant Professor
[Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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SATYAYOGI SEVAKIYAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)

CERTIFICATE

This is to certify that **Mr. HABIB UBED CHAUS** his satisfactorily carried out the project work entitled **"PHYTOCHEMICAL STUDIES OF CLOVE"** prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the during the academic year **2018-2019**.

Place: NANDED

Date: 02/04/2019

Guide

Miss. P.M. Kshirsagar

Assistant Professor

[Dept. of pharmacognosy]

Assistant Professor

**Indira College of Pharmacy
Vishnupuri, Nanded-06.**



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**Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.**

A
PROJECT ON MICROENCAPSULATION

Submitted for the Partial fulfillment of fourth year B.Pharmacy Degree

Submitted By
Miss. Beralikar Kalyani Subhashrao

(B.Pharmacy Final Year)

Guided by
Mr. Jadhav S.B.
[Head, Department of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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INDIRA COLLEGE OF PHARMACY
VISHNUPURI, Nanded 431606 (M.S.)

CERTIFICATE

This is to certify that *Miss. BERALIKAR KALYANI SUBHASHRAO* has satisfactorily carried out the assignment work entitled "*MICROENCAPSULATION*" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the subject Research Methodology (Environmental Project) during the academic year 2018-2019


Guide

Mr. JADHAV S.B.
[Head, Department of Pharmaceutics]
Assistant Professor
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Vishnupuri, Nanded-06.

Place: Nanded

Date: / /



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Vishnupuri, Nanded-06.

18

A
LIBRARY ASSIGNMENT
ON

"USE OF NATURAL COAGULANTS IN WASTE WATER TREATMENT"

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Miss. HARKAL KALPANA TATERAO

[B.PHARM Final year]

Guided by

Mr. JAMEEL AHMED

[Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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CERTIFICATE

This is to certify that *Miss. HARKAL KALPANA TATEAO* her satisfactorily carried out the project work entitled *USE OF NATURAL COAGULANT IN WASTE WATER TREATMENT* prescribed by Swami Ramanand Teerth Marathwada University Nanded for the *final Year B.Pharmacy* in the during the academic year *2018-2019*.

Date: 02/04/2019

Place: Nanded



Guide

Mr. JAMEEL AHMED

[Head, Dept. of Pharmacognosy]

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

LIBRARY ASSIGNMENT ON

New Approaches and Recent Trade In Microemulsion

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Mr.GADADE VINOD PRABHAKAR

(B.Pharm Fourth year)

Guided by

Miss. KENDRE N.N

[Department of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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SAHAYOG SEVABHAVI SANSTHA'S
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CERTIFICATE

This is to certify that **Mr. GADADE VINOD PRABHAKAR** has satisfactorily carried out the assignment work entitled "**New Approaches and Recent Treade in Microemulsion**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Fourth Year B. Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2018-2019**.



Place: NANDED

Date: 02/04/2019

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Assistant Professor
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Vishnupuri, Nanded-06.

LIBRARY ASSIGNMENT ON

**"GREEN SYNTHESIS, METHOD OF PREPARATION & USES OF
NANOPARTICLE"**

Submitted for the Partial fulfillment of fourth year B.Pharmacy Degree

Submitted by

Mr. MANDAWAD ANKUSH B.
(B.PHARMACY Final year)

Guided by

MISS. N. V. GHULE
[Dept. of Pharmacology]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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CERTIFICATE

This is to certify that **Mr.MANDAWAD ANKUSH BALAJI**.his satisfactorily carried out the assignment work entitled "**GREEN SYNTHESIS,METHOD OF PREPARATION& USES NANOPARTICLE** ": prescribed by Swami Ramanand teerth Marathwada University,Nanded for the **final Year B.Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2018-2019**.

Guided By

MISS.N.V.GHULE

[Department of Pharmacology]

Assistant Professor
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Vishnupuri, Nanded-06.

Place:NANDED

Date:



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Vishnupuri, Nanded-06.

04

A

LIBRARY ASSIGNMENT ON

"RECENT THERAPEUTIC APPROACHES FOR TREATMENT OF ALZHEIMER DISEASE"

Submitted for the Partial fulfilment of fourth year B. Pharm Degree

Submitted By

MS. BHOSLE RAKHI ANILRAO

(B. PHARM Final year)

Guided by

MR. WANKHADE.P.P.

[Department of Pharmacology]



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This is to certify that **MISS. BHOSLE RAKHI ANILRAO** has satisfactorily carried out the assignment work entitled "**RECENT THERAPEUTIC APPROCHES FOR TREATMENT OF ALZHEIMER DISEASE**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the subject **Pharmaceutics** during the academic year **2018-2019**.

Place-Nanded

Date: 09/09/19



Guide

MR. WANKHADE.P.P.

[Department of Pharmacology]
Assistant Professor
Indira College of Pharmacy
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Principal
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Vishnupuri, Nanded-06.

48

A
LIBRARY ASSIGNMENT
ON

NIOSOME – A NOVEL TREND IN DRUG DELIVERY

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

MISS. SAYYED SUMERABEGUM GOUS
(B.PHARM Final year)

Guided by

Mr. B.G. WAGHMARE
[Dept. of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, NANDED 431606 (M.S.)



Submitted To
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Indira College of Pharmacy
Vishnupuri, Nanded-06.



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
VISHNUPURI, Nanded 431606 (M.S.)

CERTIFICATE

This is to certify that **MISS. SAYYED SUMERABEGUM GOUS** has satisfactorily carried out the assignment work entitled "**NIOSOME – A NOVEL TREND IN DRUG DELIVERY**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2018-2019**.


Guide

Mr. B.G. WAGHMARE

[Dept. of Pharmaceutics]

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Place: Nanded

Date: 04/04/2019



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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT
ON

“REVIEW ON HYPERTENSION”

Submitted for the Partial fulfillment of Fourth year B.Pharmacy Degree

Submitted by

Mr. LUMDE AMOL PANDITRAO
[B.PHARM FINAL YEAR]

Guided by

Mr. MUSA BAIG SIR
[Assistant professor]
[Department of Pharmacology]



SAHAYOG SEVABHAVI SANSTHA'S
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Submitted to
SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY
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SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY

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CERTIFICATE

This is to certify that **MR. LUMDE AMOL PANDITRAO** his satisfactorily carried out the project work entitled "**REVIEW ON HYPERTENSION**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the during the academic year **2018-2019**.

Place: NANDED

Date: 04/04/19




Guide

Mr. MUSA BAIG SIR

[Assistant professor]

[Dept. of Pharmacology]

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT ON

**“A Review on Novel Approaches for Colon Targeted Drug
Delivery System”**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Miss. Ashwini Kamalakar Munde
[B.Pharmacy Final Year]

Guided by

Mr. S. B. Jadhav
[Head, Department of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



Submitted To
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SAHAYOG SIVABHAVI SANSTHA'S
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VISHNUPURI, NANDED 431606 (M.S.)

CERTIFICATE

This is to certify that **Miss. Ashwini Kamlakar Munde** her satisfactorily carried out the project work entitled "**A REVIEW ON NOVEL APPROACHES FOR COLON TARGETED DRUG DELIVERY SYSTEM**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the during the academic year **2018-2019**.

Place: NANDED

Date:




Guide

Mr. S.B.JADHAV
[Head, Department of Pharmaceutics]
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Indira College of Pharmacy
Vishnupuri, Nanded-06.

33

A
LIBRARY ASSIGNMENT ON

RECENT TRENDS IN INSULIN DRUG DELIVERY SYSTEM

Submitted for the Partial fulfillment of Final year B.Pharm Degree

Submitted by

Mr. MOHAMMED ANEES

[B.PHARM Final Year]

Guided by

Miss. PALLAVI K. BAWANTHADE

[Dept. of Pharmaceutical Chemistry]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



Submitted to

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CERTIFICATE

This is to certify that Mr. MOHAMMED ANEES his satisfactorily carried out the project work entitled "RECENT TRENDS IN INSULIN DRUG DELIVERY SYSTEM" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the Final Year B.Pharmacy in the during the academic year 2018-2019.

Place: Nanded

Date: 02/04/2019




Guide

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Vishnupuri, Nanded-06.

०५

A

PROJECT ON LIBRARY ASSISNGMENTS

A REVIEW: SYNTHESIS OF POLYHYDROUINOLINE DERIVATIVES VIA DIFFERENT METHODS

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Miss.Bhujbal Shivkanya Madhavrao
[B.PHARM IV YEAR]

Guided by

Mr.Pravin N.Muli
[Dept.of Pharmaceutical Chemistry]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY

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CERTIFICATE

This is to certify that **MISS.BHUJBAL SHIVKANYA MADHAVRAO**
his satisfactorily carried out the project work entitled "A Review:
Synthesis of polyhydroquinoline derivatives via different methods"
prescribed by Swami Ramanand Teerth Marathwada University
Nanded for the **Final Year B.Pharmacy** in the during the
academic year **2018-2019**.

Place: NANDED

Date: 02/04/2019




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A
LIBRARY ASSIGNMENT
ON
**PHOTOCHEMICAL & BIOLOGICAL EVALUTION OF SPATHODEA
CAMPANULATA**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted By

MISS. DUKARE BHAGYASHRI DADARAO.

(B.PHARM Final year)

Guided by

MISS.TELANG.P.U

[Dept. of Pharmaceutical chemistry]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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Submitted To

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SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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CERTIFICATE


This is to certify that MISS-DUKARE BHAGYASHRI DADARAO has satisfactorily carried out the assignment work entitled **"PHYTOCHEMICAL AND BIOLOGICAL EVALUTION OF SPATHODEA CAMPANULATA"** prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject Research Methodology during the academic year 2018-2019

Place: NANDED
Date: 02/04/19



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49
A LIBRARY ASSIGNMENT ON

FLOATING DRUG DELIVERY SYSTEM –A REVIEW

Submitted for the Partial fulfillment of fourth year B.Pharm Degree
Submitted By

Mr. SK SOHAIL SK RAFIQ

(B.PHARM Final year)

Guided by

Mrs. KABRA A. K

[Dept. of Pharmaceutics]



SAHA YOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



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SATYAGURU SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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CERTIFICATE

This is to certify that **Mr.SK SOHEL SK RAFIQ** has satisfactorily carried out the assignment work entitled "**FLOATING DRUG DELIVERY SYSTEM**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject **Research Methodology** during the academic year **2017-2018**.

Place: NANDED

Date: 07/04/18



Guide *Acable*
07/04/18

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A
LIBRARY ASSIGNMENT ON

"ORALLY DISSOLVING STRIPS"

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

MISS. WANJE VAIJANTI VIJAYANAND
(B.Pharm Fourth year)

Guided by

Mr. SHINDE S.R
[Department of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S
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This is to certify that **MISS.WANJE VAJANTI VIJAYANAND** has satisfactorily carried out the assignment work entitled "**ORALLY DISSOLVING STRIPS**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Fourth Year B. Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2017-2018**.

Place: NANDED
Date: 07/04/18



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Assistant Professor
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24

A
LIBRARY ASSIGNMENT ON

**VALIDATED SPECTROPHOTOMETRIC DETERMINATION OF ACYCLOVIR
BY DERIVATIVE METHOD**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Miss. KARHALE MADHURI CHAMPATRAO
(B.PHARM Final year)

Guided by

Ms. KHAN H. N.
[Dept. of pharmaceutical chemistry]




SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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SAHAYOG SE VARNHARI SANGHAT'S
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VISHNUPURI, NANDED 431606 (M.S.)

CERTIFICATE

This is to certify that **Miss. KARHALE MADHURI CHAMPATRAO** her satisfactorily carried out the assignment work entitled " **Validated Spectrophotometric determination of Acyclovir by derivative method** " prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the subject **Research Methodology** (Library Assignment) during the academic year **2017-2018**.

Guided By

Ms. Khan H. N.
Ms. KHAN H. N.

[Dept. of pharmaceutical chemistry]

Assistant Professor
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Place: NANDED

Date: 7-4-18



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[Signature]

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Vishnupuri, Nanded-06.

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A
LIBRARY ASSIGNMENT ON

**NUCLEAR MAGNETIC RESONANCE AND MASS
SPECTROSCOPICAL APPROACHES**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted By

Miss.Shinde Kanhopatra Sahebrao

(B.PHARM Final year)

Guided by

Miss. GAJALE M.S.

[Dept. of Pharmacognosy]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

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SAHAYOG SEVADHARMI SANSTHA'S
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VISHNUPURI, NANDED 431606 (M.S.)

CERTIFICATE

This is to certify that *Miss.Shinde Kanhopatra Sahebrao* has satisfactorily carried out the assignment work entitled "**NUCLEAR MAGNETIC RESONANCE AND MASS SPECTROSCOPICAL APPROACHES**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject Research Methodology during the academic year **2017-2018**.


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Miss.GAJALE M.S.

[Dept. of Pharmacognosy]
Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

Place: NANDED

Date: 07/01/2018



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Indira College of Pharmacy
Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT
ON

MICRO EMULSION

Submitted for the Partial fulfilment of fourth year B.Pharm Degree

Submitted by

Mr. AKYAMWAR NIKHIL NAGNATH
(B.PHARM Fourth year)

Guided by

Mr. JADHAV S. B.
[Head, Department of Pharmaceutics]



SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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CERTIFICATE

This is to certify that **MR. AKYAMWAR NIKHIL NAGNATH** has satisfactorily carried out the assignment work entitled "**MICRO EMULSION**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **final Year B.Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2017-2018**.


Guide

Mr. JADHAV S. B.

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Assistant Professor
Indira College of Pharmacy
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Place: NANDED

Date: 2-4-18



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45

LIBRARY ASSIGNMENT ON
GENE THERAPY FOR CANCER

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mr. ONKAR GOVINDRAO SANGANWAR
B.PHARMCY FINAL YEAR

Guided by

Mr. ARALE S. S.

[Department of pharmaceutical chemistry.]



SAHAYOG SEVABHAVI SANSTHA'S
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VISHNUPURI, NANDED 431606 (M.S.)




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SAHAYOG SEVA ABHISHEK SANGH

INDIRA COLLEGE OF PHARMACY

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CERTIFICATE

This is to certify that **Mr. ONKAR GOVINDRAO SANGANWAR** his satisfactorily carried out the project work entitled "**GENE THERAPY FOR CANCER**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the during the academic year **2017-2018**.

Place: **NANDED**

Date: **02/04/18**




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[Dept. of Pharmaceutical chemistry]

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

LIABRARY ASSIGNMENT OF**PROBIOTIC AND PREBIOTIC**

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mr. WADIKAR UDAY ANANDRAO
B.PHARMACY FINAL YEAR

Guided by

Mr. ARALE S. S.

[Department of pharmaceutical chemistry.]



SAHAYOG SEVABHAVI SANSTHA'S

INDIRA COLLEGE OF PHARMACY

VISHNUPURI, NANDED 431606 (M.S.)



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SATYAYOG SEVABHAVI SANSTHA'S

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CERTIFICATE

This is to certify that **Mr. WADIKAR UDAY ANANDRAO** his satisfactorily carried out the project work entitled "**PROBIOTICS AND PREBIOTICS**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Final Year B.Pharmacy** in the during the academic year **2017-2018**.

Place: NANDED

Date: 02/04/18



Guide

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Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT ON

**EXTRACTION OF ESSENTIAL OIL
AND ITS APPLICATIONS**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted By

Mr. AARSODE NAGNATH SHIVAJI
(B.Pharmacy Fourth year (Semester VIII))

Guided by

Mr. JAMEEL AHMED

[Head, Dept. of Pharmacognosy]



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CERTIFICATE

This is to certify that **Mr. Aarsode Nagnath Shivaji** has satisfactorily carried out the assignment work entitled "**extraction of essential oil and it's application**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **B. Pharmacy Fourth Year (Semester VIII)** in the subject Research Methodology (Library Assignment) during the academic year **2017-2018**.



Guide
Mr. Jameel Ahmed
[Head, Dept. of Pharmacognosy.]

Place: NANDED

Date: 02/04/2018



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Indira College of Pharmacy
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60

A
LIBRARY ASSIGNMENT ON

**"DISSOLUTION MEDIA DEVELOPMENT FOR PARACETAMOL AND
CHLOROXAZONE"**

Submitted for the Partial fulfillment of fourth year B.Pharm Degree

Submitted by

Miss.TANGAWAR ASHWINI RAJU
(B.Pharm Fourth year)

Guided by

Miss. KHAN H .N.
[Department of Pharmaceutical chemistry]



SAHAYOG SEVABHAVI SANSTHA'S
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CERTIFICATE

This is to certify that **MISS.TANGAWAR ASHWINI RAJU** has satisfactorily carried out the assignment work entitled "**DISSOLUTION MEDIA DEVELOPMENT FOR PARACETAMOL AND CHLOROXAZONE**" prescribed by Swami Ramanand Teerth Marathwada University Nanded for the **Fourth Year B. Pharmacy** in the subject Research Methodology (Library Assignment) during the academic year **2017-2018**.



Place: NANDED

Date: 01/04/18

W. Khan

Guide

Miss.KHAN H. N

[Department of Pharmaceutical chemistry]

Assistant Professor
Indira College of Pharmacy
Vishnupuri, Nanded-06.

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[Signature]

Principal
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Vishnupuri, Nanded-06.

A
LIBRARY ASSIGNMENT
ON

"MITOCHONDRIAL TARGETED DRUG DELIVERY SYSTEM"

Submitted for the Partial fulfillment of Fourth year B.Pharm Degree

Submitted by

Mr. KALYANKAR SHIVAJI P.
[B.PHARM FINAL YEAR]

Guided by

Mr. MOHAMMAD ZAMEERUDDIN
M. Pharm (Ph D)
[Head of Dept. of Pharmaceutical Chemistry]




SAHAYOG SEVABHAVI SANSTHA'S
INDIRA COLLEGE OF PHARMACY
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Sahayog Sevabhavi Sanstha's

INDIRA COLLEGE OF PHARMACY

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Certificate

This is to certify that **Mr. Kalyankar Shivaji Prakashrao** has satisfactorily carried out the project work entitled **"MITOCHONDRIAL TARGETED DRUG DELIVERY SYSTEM"** prescribed by **Swami Ramanand Teerth Marathwada University Nanded** for the **Final Year B.Pharmacy** in the during the academic year **2017-2018**.

Place : Nanded

Date ⁰⁷ / 04 / 2018



Guide

Mr. Mohammad Zameeruddin

[Head, Dept. of Pharmaceutical Chemistry]

Assistant Professor
Indira College of Pharmacy
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Indira College of Pharmacy
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2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

B) Participative learning

- i. Seminar
- ii. Quiz
- iii. Group discussion
- iv. Industrial visits




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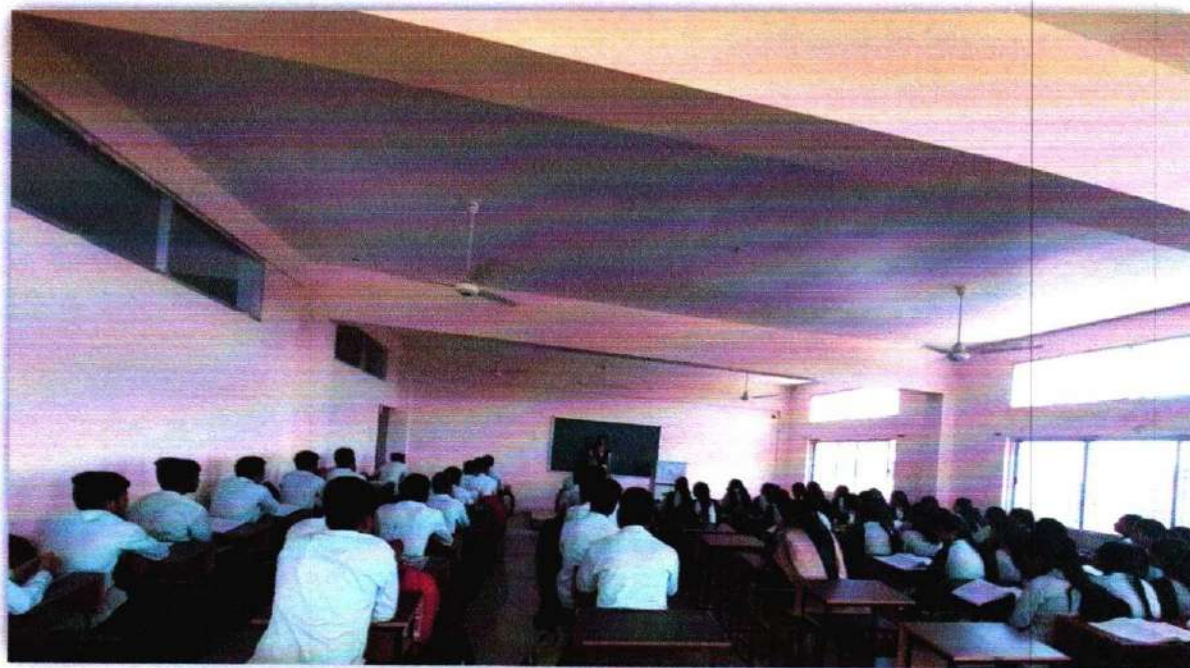
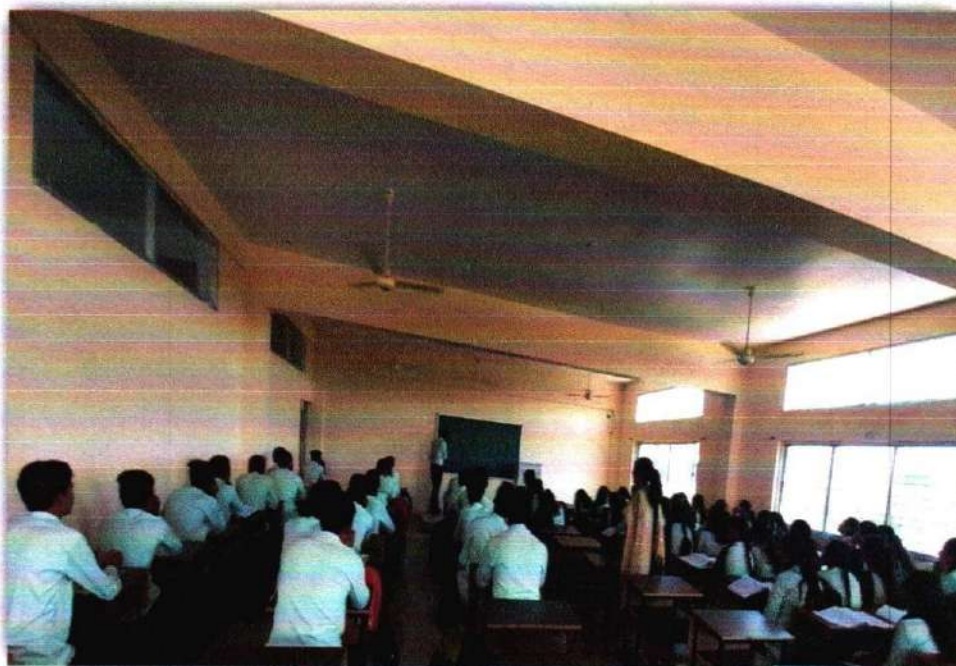


Figure: Students Presenting Seminars


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2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

B) Participative learning

- i. Seminar
- ii. **Quiz**
- iii. Group discussion
- iv. Industrial visits

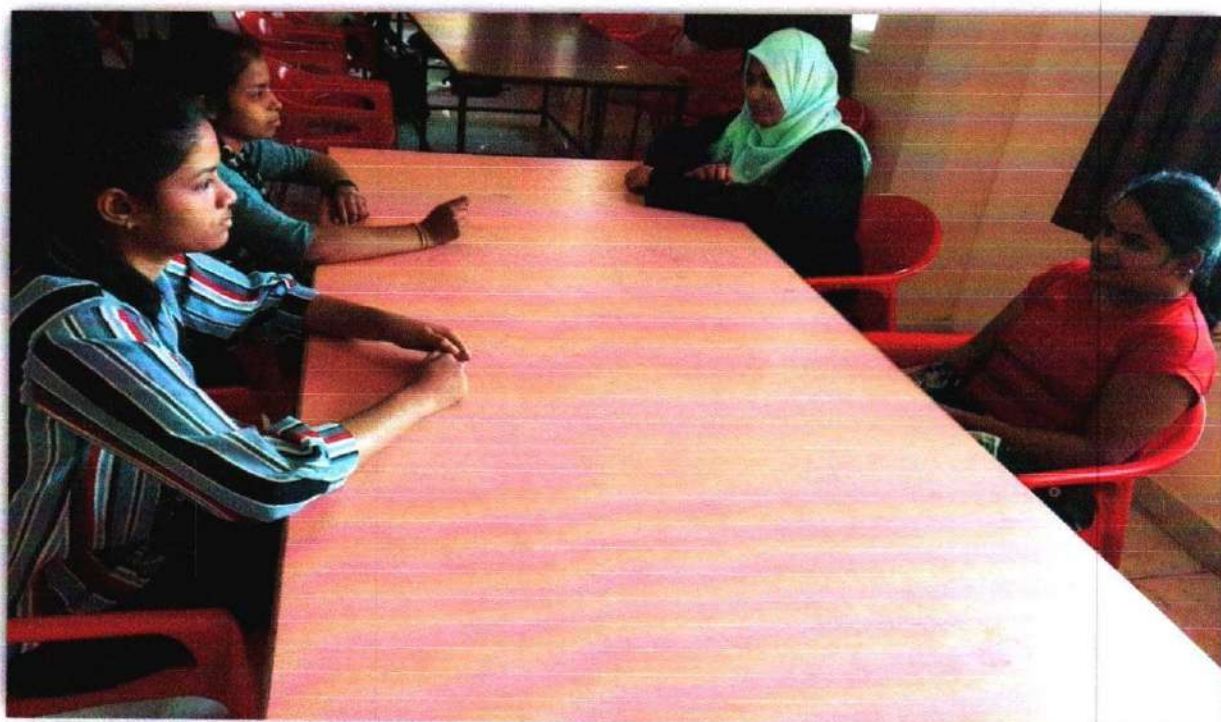




Figure: Students participating in Quiz

2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

B) Participative learning

- i. Seminar
- ii. Quiz
- iii. **Group discussion**
- iv. Industrial visits


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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

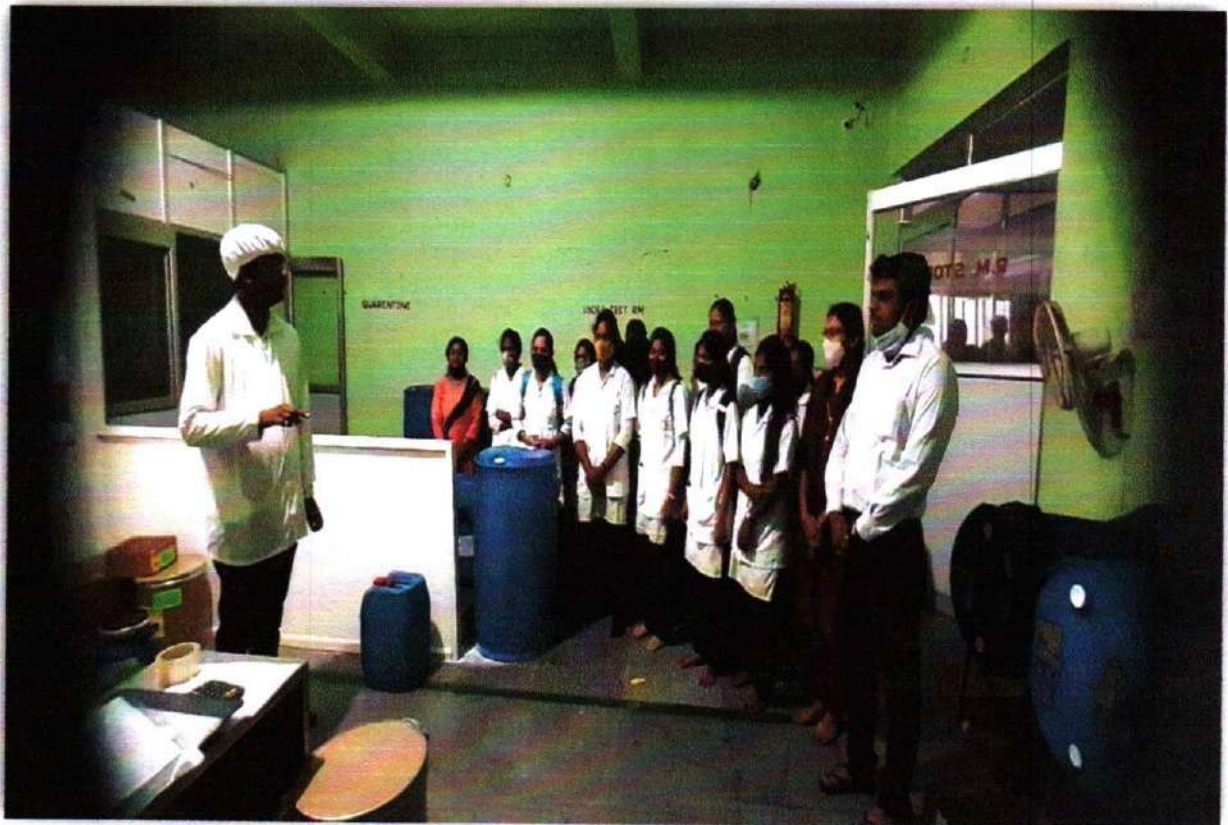
2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools


B) Participative learning

- i. Seminar
- ii. Quiz
- iii. Group discussion
- iv. **Industrial visits**




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Principal
Indira College of Pharmacy
Vishnupuri, Nanded-06.

2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

C) Problem-solving methodologies

- The use of problem-based learning is commonplace.
- A group of students are encouraged to diagnose and cure a problem that has been presented to them.
- To arrive at a likely solution, the students are forced to reason using both their theoretical and clinical knowledge.
- Students get the ability to think critically and analyses a variety of instances through this exercise.
- Providing instructional lessons for hesitant students
- Providing a case study to help slow learners understand the issues
- Giving tests and assignments at the conclusion of each unit's instruction.
- Analysis and discussion of a case study.
- Design and development of products.

2.3.1. Case studies:

The case study approach is used in the teaching and learning process to help students increase their capacity for problem solving by fostering logical thought and practical knowledge. This is frequently used while teaching business law, cyber laws, etc. in management programme.

2.3.1. Analysis and Reasoning:

Every exam question is focused on analysis and reasoning. Free internet access in the library and on-campus Wi-Fi facilities encourage the practise of independent learning and conversation.

2.3.1 Discussion

The university uses discussion-based learning in many of its courses because it encourages students to think critically and take part in formulating opinions and


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recommendations that may be used to gauge their level of knowledge. Soft skills, managerial communications, corporate adoptions, etc. are the main topics of discussion.


2.3.1 Quizzes

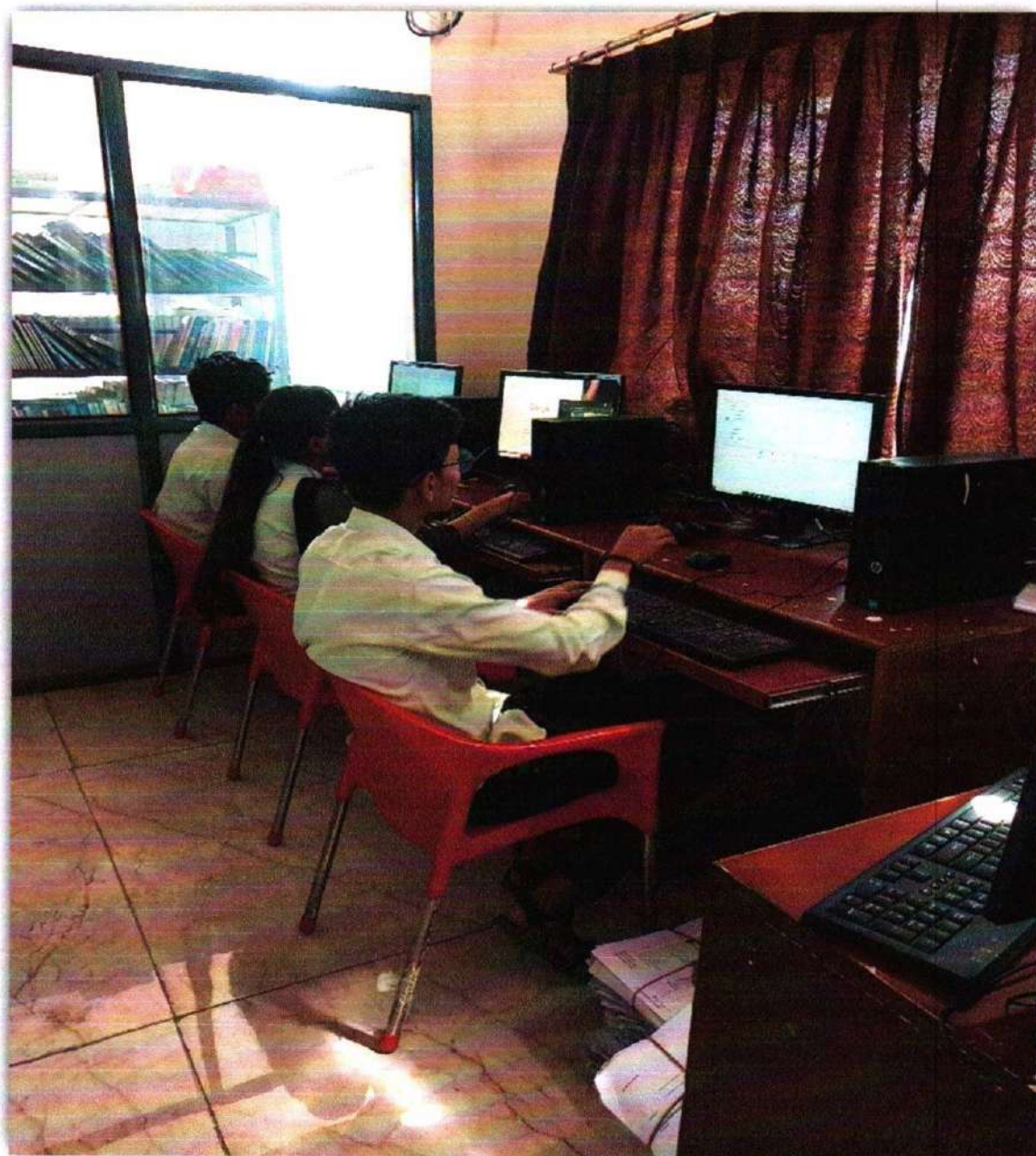
Quizzes are conducted by subject teachers in all UG and PG programme.


2.3.1 Research Activities:

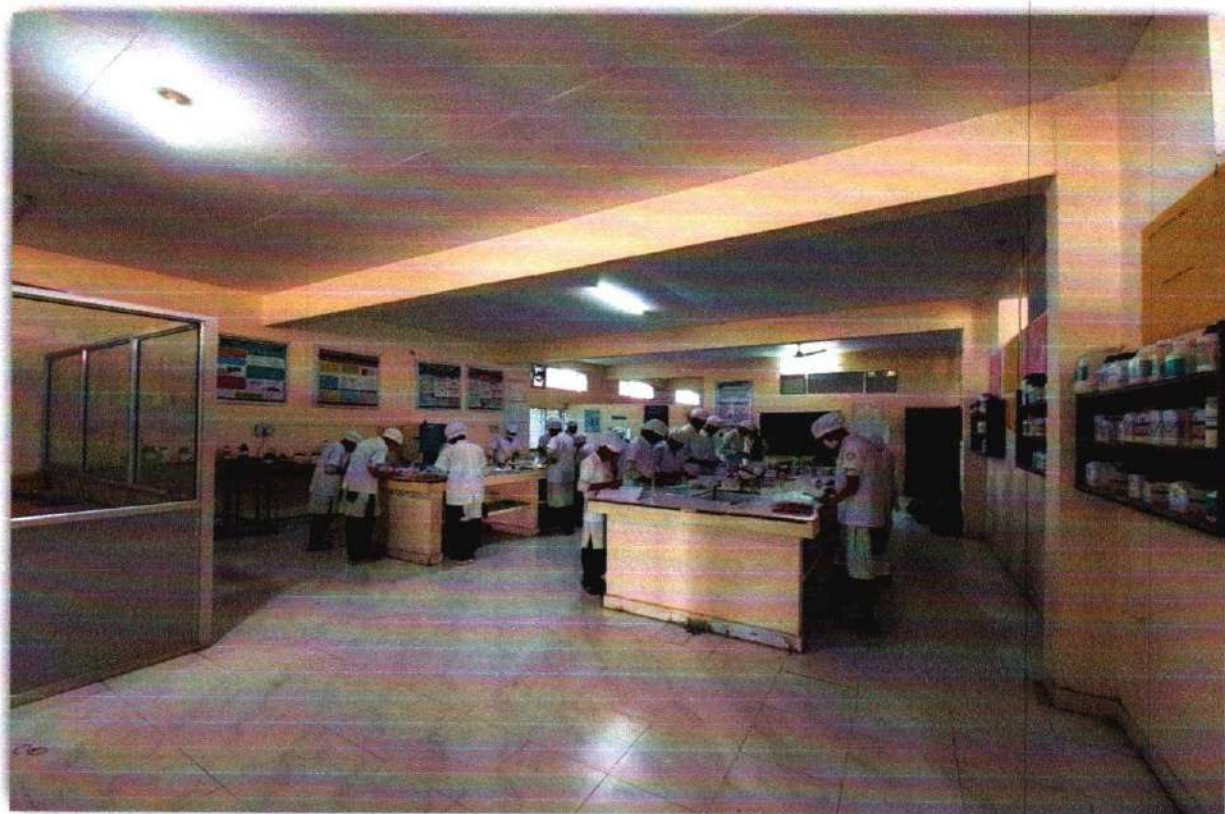
Under the direction of senior teachers, research activities are carried out in each Department, educating students from various semesters about new fields and increasing their research ability.




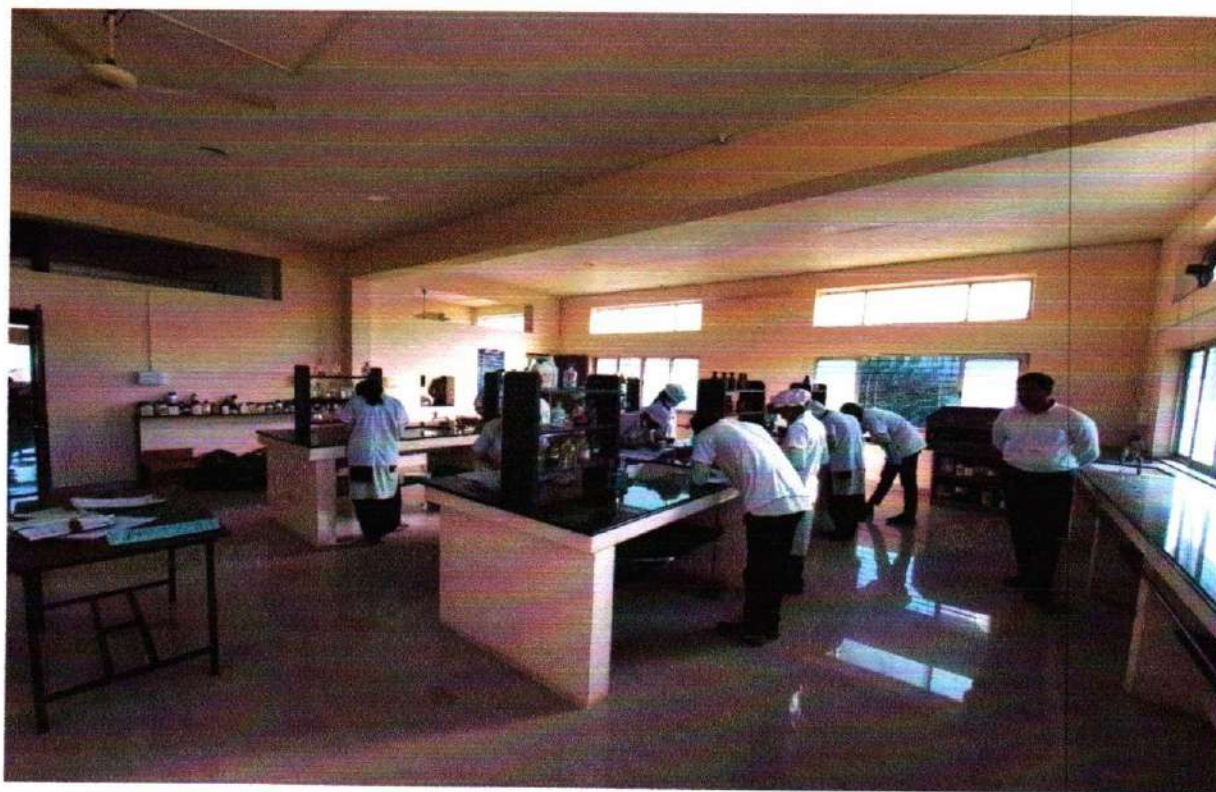

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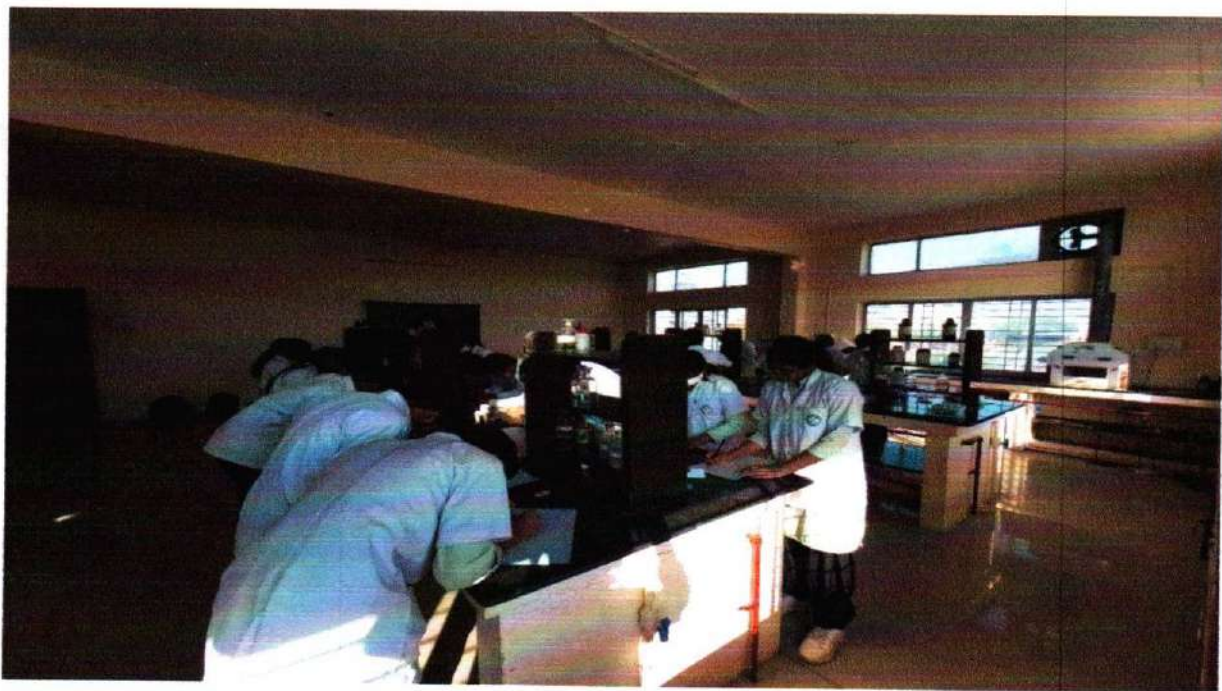

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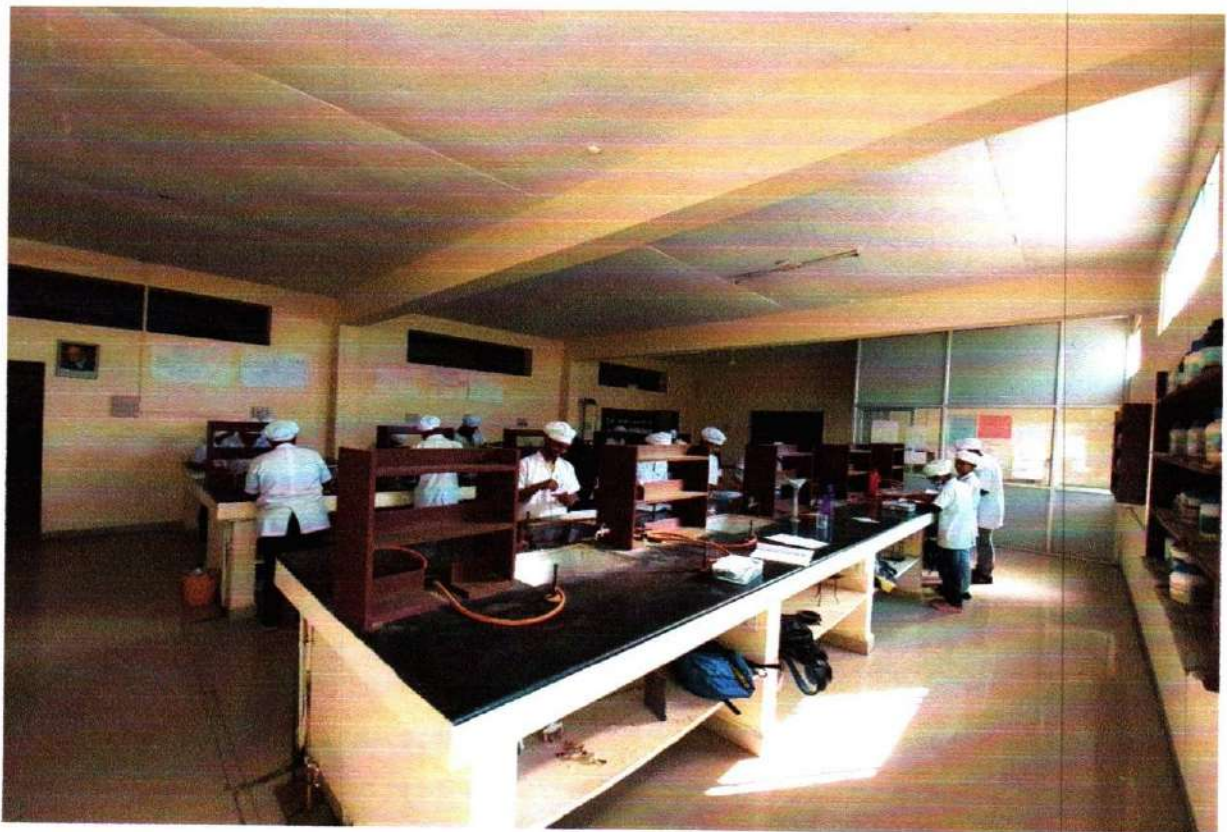
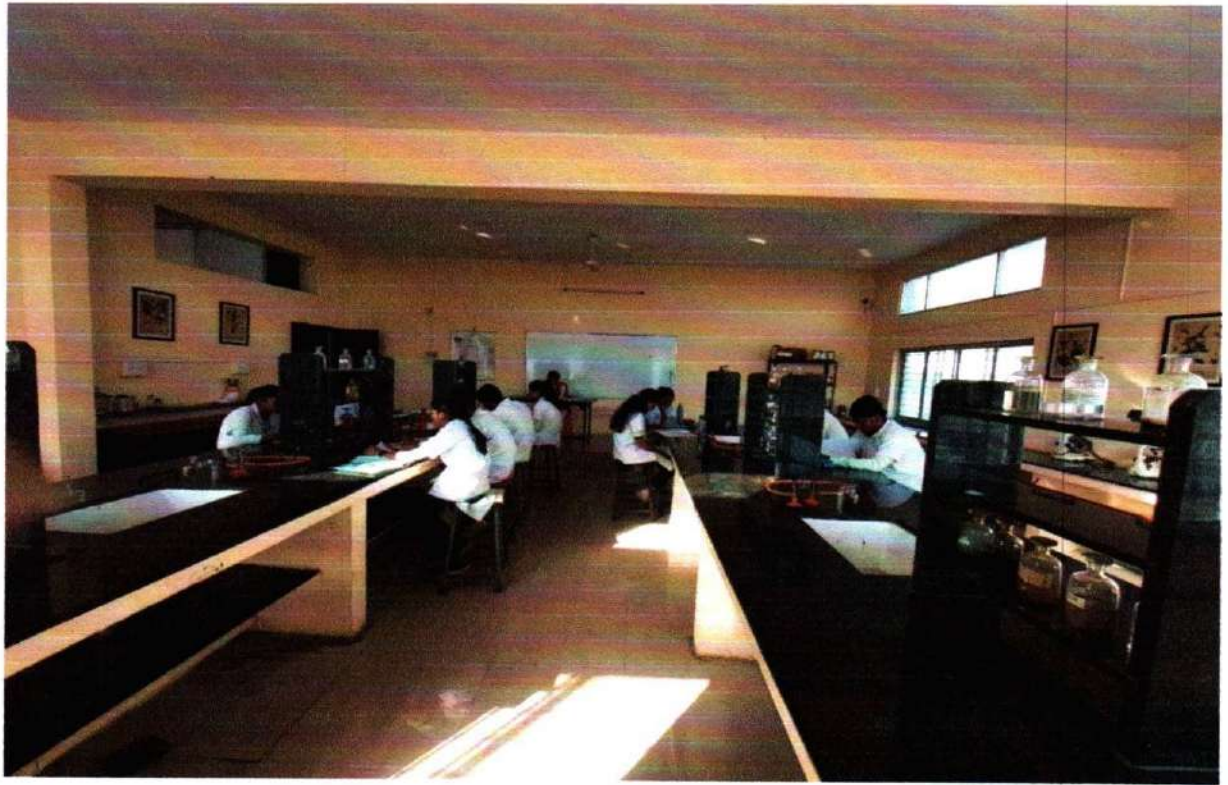

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LCD

Presentations:



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UNIT-I SOLUBILITY OF DRUGS

PREPARED BY

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ASST. PROFESSOR

DEPARTMENT OF PHARMACEUTICS

SSS'S INDIRA COLLEGE OF PHARMACY, NANDED -431605
(MAHARASHTRA)

CONTENT

- ❖ Solubility expressions
- ❖ Mechanisms of solute solvent interactions
- ❖ Ideal solubility parameters
- ❖ Solvation & association
- ❖ Quantitative approach to the factors
- ❖ Influencing solubility of drugs
- ❖ Diffusion principles in biological systems
- ❖ Solubility of gas in liquids, solubility of liquids in liquids, (Binary solutions, ideal solutions)
- ❖ Raoult's law, real solutions
- ❖ Partially miscible liquids
- ❖ Critical solution temperature and applications
- ❖ Distribution law, its limitations and applications


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❖ DEFINATIONS

Solution : Solution is a mixture of two or more components that forms a homogenous mixture. The components are referred to as the solute and solvent.

- A solution is made by dissolving a solute in a solvent & are also known as True solutions or molecular dispersions.


Solute : The substance usually present in lesser amount and getting dissolved in the solution

Solvent : Solvent is a subcomponent in which solute is dissolved usually which is a greater amount.

▶ **Saturated Solution** : A solution in which dissolved solute is in equilibrium with the undissolved solute or solid phase.

▶ **Unsaturated solution** A solution containing the dissolved solute in a concentration less than saturated solution.

▶ **Supersaturated Solution** A solution which contains more concentration of solute than the saturated solution


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Aromatic Acids



By:

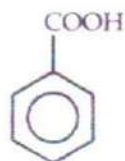
Mr. Mohammad Zameeruddin

Asst. Professor

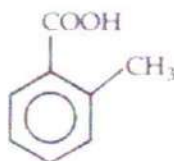
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INTRODUCTION

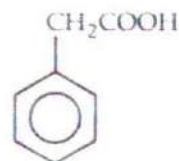
The aromatic acids are the derivatives of aromatic hydrocarbons in which one or more hydrogen atoms have been replaced by the carboxylic groups. The carboxylic group may be directly attached to the aromatic nucleus and is known as benzoic acid or its derivatives. Sometimes carboxylic group is present in the side chain of the aromatic nucleus for e.g.



Benzoic acid



o-Toluic acid



Phenyl acetic acid


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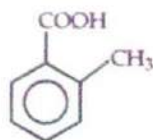
NOMENCLATURE

1. **Common system** : According to this system the aromatic acids are generally known as derivatives of benzoic acid. For e.g.



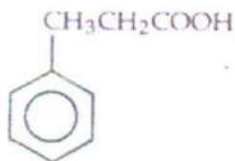
4-chlorobenzoic acid

And some aromatic acids have special names. For e.g. Methyl benzoic acid is also known as Toluic acid

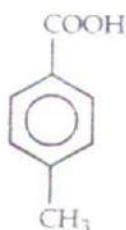


Methyl benzoic acid
(Toluic acid)

2. **IUPAC system** : The simplest aromatic acid is Benzoic acid. The other aromatic acids are named as derivatives of benzoic acid. The salts of aromatic acids are named by writing the name of cation followed by the name of the acid in which the ending "ic acid" has been replaced by "ate". For e.g.



3-phenyl propanoic acid



p-methyl benzoic acid



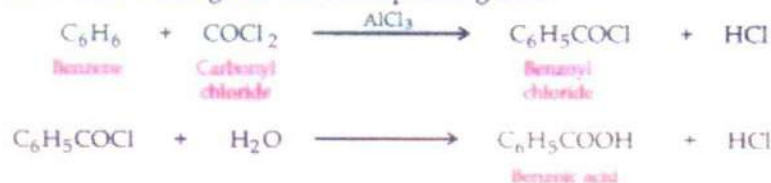
Sodium Benzoate


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METHODS OF PREPARATION

Aromatic acids can be prepared by following general methods :

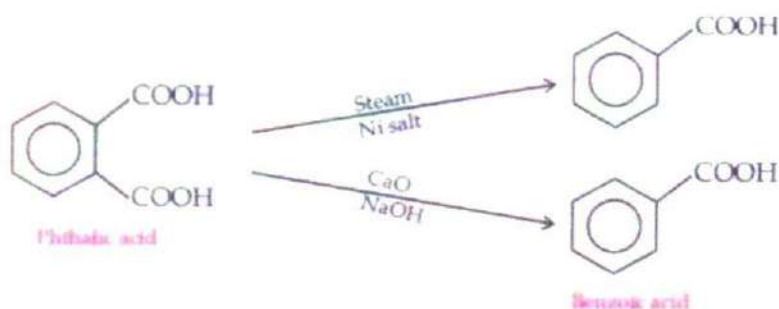
- 1) **Friedel-Craft's reaction** : When benzene is reacted with carbonyl chloride in the presence of anhydrous aluminium chloride, an acid chloride is obtained which on further treatment with water gives the corresponding acid.



- 2) **Sandmeyer's reaction** : Aniline on diazotization (HNO_2/HCl) give benzene diazonium chloride which on reaction with CuCN product Benzonitrile further benzonitrile gives benzoic acid on treatment with water.



- 3) **From Phthalic acid** : An aromatic acid is obtained by passing vapours of phthalic acid either by partial decarboxylation with soda lime or mixed with steam over heated catalyst.



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- 6) **From sulphonic acid** : When the potassium salt of an aromatic sulphonic acid is fused with potassium cyanide, we get a nitrile, which on hydrolysis, gives an aromatic acid.



- 7) **From Primary alcohol** : Aromatic acid can be prepared by oxidation of primary alcohol with acidified potassium dichromate, alkaline KMnO_4 or HNO_3 .



- 8) **By hydrolysis of nitriles** : Nitriles on hydroxy by dilute acids or alkalis gives aromatic acid.



NOMENCLATURE OF ORGANIC COMPOUNDS

Presented by:
Dr. Pallavi A. Kamble
 Associate Professor
 Indira College of Pharmacy, Nanded

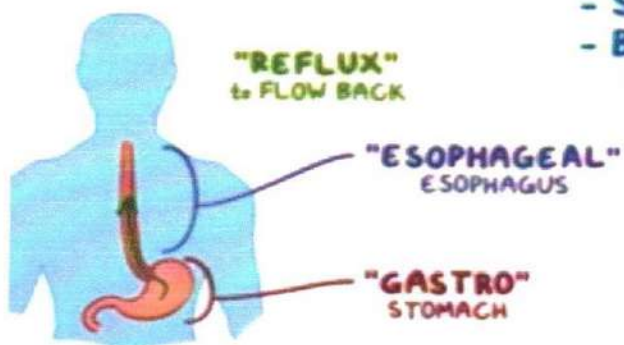
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GERD

(Gastroesophageal acid Reflux Disease)

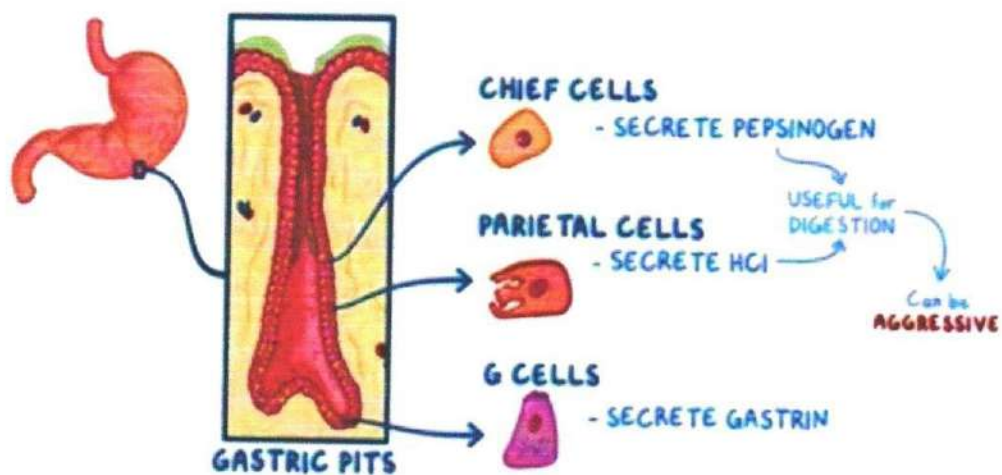
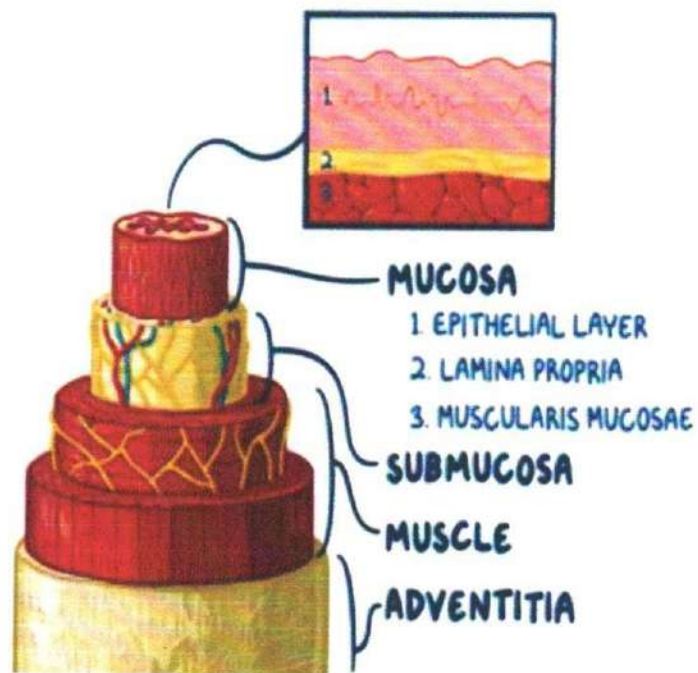
Presented By:-Miss Nita Nimbekar

GASTROESOPHAGEAL REFLUX DISEASE GERD

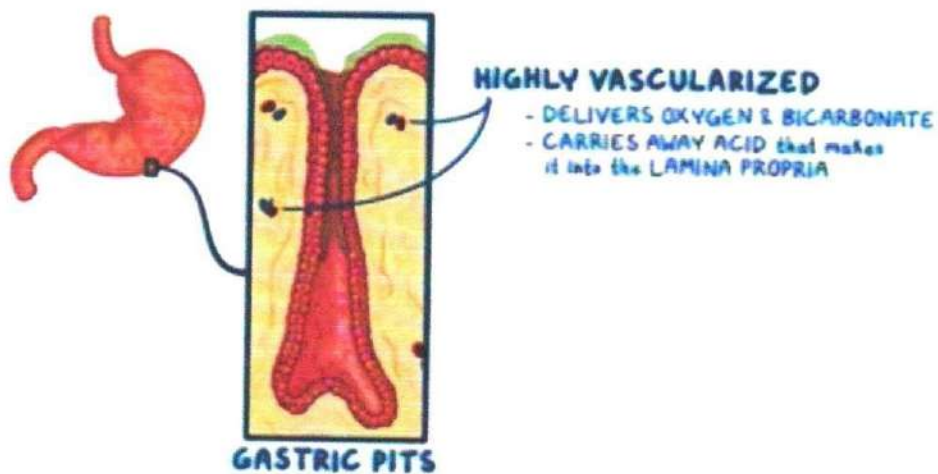
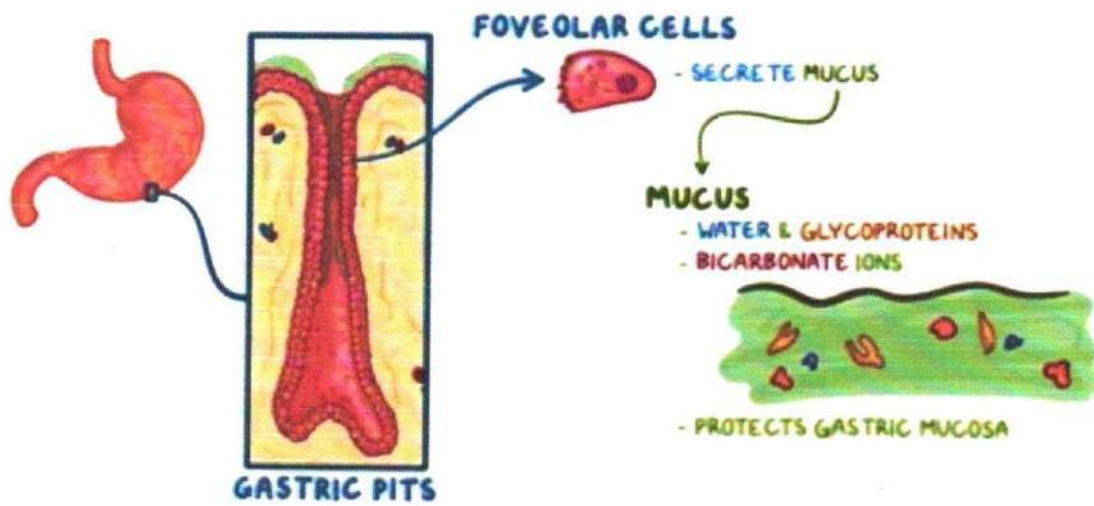


- STOMACH ACID → ESOPHAGUS
- BARRETT'S ESOPHAGUS
 - ↳ ↑ RISK of ESOPHAGEAL ADENOCARCINOMA

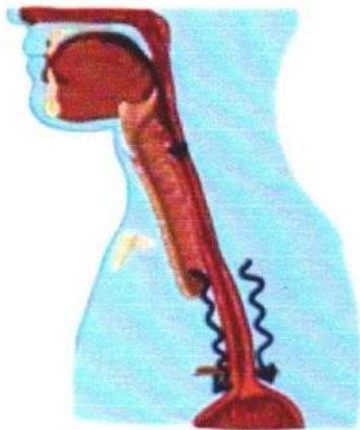

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ESOPHAGUS

PRESSURE ↓

- ↳ GASTRIC ACID reaches the ESOPHAGUS

DEFENSE MECHANISMS

- ↳ PRIMARY & SECONDARY PERISTALTIC WAVES
 - ↳ Contractions after SWALLOWING

* SOME REFLUX is NORMAL

- ↳ SALIVA helps NEUTRALIZE the ACIDIC GASTRIC CONTENT

COURSE: COSMETIC TECHNOLOGY

COURSE CODE: BPH/1

CHAPTER: QUALITY CONTROL TEST FOR COSMETICS

NAME OF FACULTY: MS. SONALI BHAGAT

ACADEMIC YEAR: 2018-19

A handwritten signature in green ink, likely of the Principal, is written above the name.

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SKIN CARE PRODUCTS

- They are used as cleansing, moisturizing and beautifying agents. They help in enhancing attractiveness of the body, altering the appearance of the body without affecting its functions.
- Sunscreen products are also skin care products which are helpful in protecting the body from U.V rays and treating sunburns.



CLASSIFICATION OF SKIN CARE PRODUCTS

Powders & compacts

Face powder
Lipstick
Body powder
Rouges
Prickly heat powder
Face pack

Creams

Vanishing cream
Cold cream
All purpose cream

Lotions

Skin lotion
Astringent
Lotions

Colorants

EVALUATION OF POWDERS

1.Shade test: The variation of colour is determined and controlled.

2.Colour-dispersion test: In this with help of magnifying glass segregation or bleeding of colour is observed.

3.Play off test: In this test adhesion property of powder with the puff is checked.

4.Flow property test: It is measured by the angle of repose mainly for the body powder.

5.Particle size determination: It is done with the help of microscope and sieve analyser.

6.Moisture content test: In this % moisture content is estimated by using the formula



EVALUATION OF CREAMS

The evaluation of creams is carried out by two methods:

- a. In vitro method
- b. In vivo method

In vitro method

Tensile strength tester: For determining the tensile property of the excised stratum corneum of the skin.

Haegans gas bearing electro dynamometer: It is helpful in determining the viscoelastic behaviour of skin.

Gravimetry analytical method: Helps in establishing relationship between water content present in stratum corneum and relative humidity.



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Thermal analytical method: Various methods like DSC, TMA, TGA are used in order to provide information about the effect of temperature which causes changes in stratum corneum.

In Vivo Method

Transpirometry: Helps in measuring trans epidermal water loss of the skin which helps in providing information on moisturizing potential.

Scanning electron microscope: Skin replicas are used in this method to know that effect of topical preparations on the skin condition i.e dry and rough skin.

Sensitivity test: These tests are performed in order to measure the irritancy sensitization potential & photo toxicity of skin.



EVALUATION OF LOTIONS

1.Spectrophotometric evaluation: To evaluate the U.V absorption ability of sunscreen lotion compounds.

2.Erythematous dosage: To determine the erythemally effective radiation, transmitted by suntan preparations.

3.In vivo skin testing: This is a direct test on animal skin particularly rabbit, the site used is either abdomen or backside as these sites have minimum sensitivity.



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Gas Chromatography



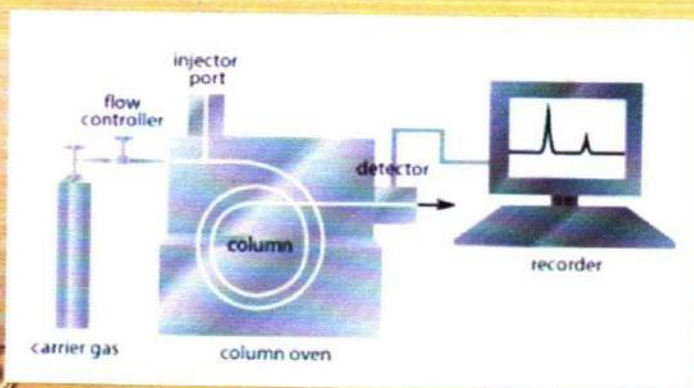
By

Mr. Mohammad Zameeruddin

Asst. Professor,

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Gas Chromatography




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GAS CHROMATOGRAPHY

- ❖ Separation of gaseous & volatile substances
 - ❖ Simple & efficient in regard to separation
- GC consists of **GSC** (gas solid chromatography)
GLC (gas liquid chromatography)

Gas → M.P

Solid / Liquid → S.P

GSC not used because of limited no. of S.P

GSC principle is **ADSORPTION**

GLC principle is **PARTITION**



Sample to be separated is converted into vapour

And mixed with gaseous M.P

Component more soluble in the S.P → travels slower

Component less soluble in the S.P → travels faster

Components are separated according to their

Partition Co-efficient

Criteria for compounds to be analyzed by G.C

1.VOLATILITY:

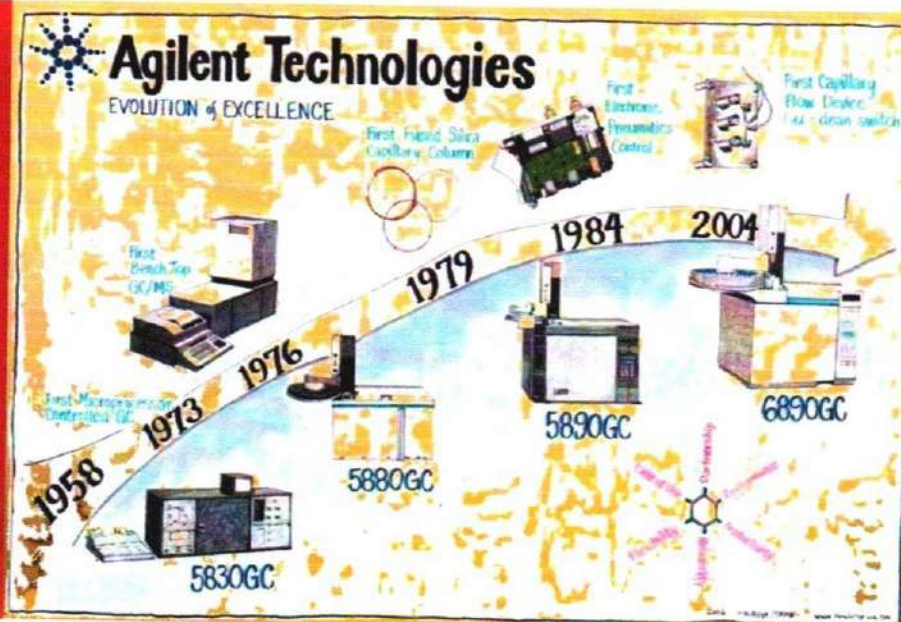
2.THERMOSTABILITY:




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What is Gas Chromatography?

- The father of modern gas chromatography is Nobel Prize winner **John Porter Martin**, who also developed the first liquid-gas chromatograph. (1950)




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The Next Generation in Gas Chromatography



How a Gas Chromatography Machine Works

- **First**, a vaporized sample is injected onto the *chromatographic column*.
- **Second**, the sample moves through the column through the flow of inert gas.
- **Third**, the components are recorded as a sequence of peaks as they leave the column.



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Gravimetric Analysis

Khan Hajera Naushi
Assistant Professor
Indira College of Pharmacy, Nanded



1

Gravimetric Analysis - What is It?




- Definition:

Gravimetric analysis or quantitative analysis by weight is process of isolating and weighing an element in pure form

OR

- A group of analytical methods in which the amount of analyte is determined by the measurement of the mass of a pure substance containing the analyte

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Types of gravimetric methods



- There are two main types of gravimetric analysis methods:
 - Precipitation and
 - Volatilization .
- In precipitation methods, a chemical reaction causes the formation of a sparingly soluble substance that precipitates from solution, is filtered, washed, purified (if necessary), and weighed.
- In the volatilization method, the analyte or its decomposition products are volatilized (converted to gaseous form) and then collected and weighed, or alternatively, the mass of the volatilized product is determined indirectly by the loss of mass of the sample.

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Gravimetric Analysis



Precipitation Analysis

Principals:

Reagent + Analyte \longrightarrow Solid Product (collect and measure mass)

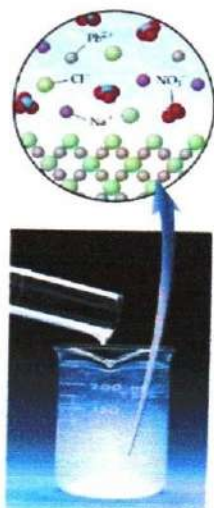
Example: Determination of lead (Pb^{+2}) in water



Analyte	Reagent	Solid Product
---------	---------	---------------

By adding excess Cl^{-} to the sample, essentially all of the Pb^{+2} will precipitate as $PbCl_2$.

Mass of $PbCl_2$ is then determined.



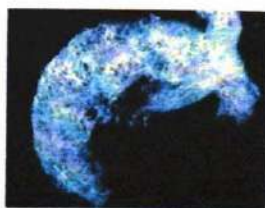
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Types of precipitates



- **Crystalline:** Crystalline ppts are having very define crystals
- **Curdy:** Curdy ppts are aggregate of small porous particles
- **Gelatinous:** Gelatinous ppts are very difficult to work



6


Desired Properties of Solid Product



- Should be precipitate completely and quantitatively (Stichometric equation)
- Should be very insoluble
- Easily filterable (i.e., large crystals)
- Very Pure
- Known and constant composition

Few precipitates have all of these properties, but in most cases appropriate techniques can help optimize these qualities

5


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INTRODUCTION OF PHYSICAL PHARMACEUTICS-I (BP-302T)

PREPARED BY

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1

DEFINITION

- ❖ Physical pharmaceuticals is the branch of pharmacy that concentrate on the application of physics and chemistry to study of pharmaceuticals.
- ❖ In other words, study of effect of dosage forms at molecular level.

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SCOPE

- ❖ The course deals with the various physical and physicochemical properties, and principles involved in dosage forms/formulations.
- ❖ Theory and practical components of the subject help the student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.

3

OBJECTIVE

Upon the completion of the course student shall be able to.....

- ❖ Understand various physicochemical properties of drug molecules in the designing the dosage forms.
- ❖ Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations.
- ❖ Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.

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UNIT-I SOLUBILITY OF DRUGS

- ❖ Solubility expressions
- ❖ Mechanisms of solute solvent interactions
- ❖ Ideal solubility parameters
- ❖ Solvation & association
- ❖ Quantitative approach to the factors
- ❖ Influencing solubility of drugs
- ❖ Diffusion principles in biological systems
- ❖ Solubility of gas in liquids, solubility of liquids in liquids, (Binary solutions, ideal solutions)
- ❖ Raoult's law, real solutions
- ❖ Partially miscible liquids
- ❖ Critical solution temperature and applications
- ❖ Distribution law, its limitations and applications

5

UNIT-II STATES OF MATTER & PROPERTIES OF MATTER

- | | |
|----------------------------------|--|
| ❖ State of matter | ❖ Glassy states |
| ❖ Changes in the state of matter | ❖ Solid crystalline |
| ❖ Latent heats | ❖ Amorphous & polymorphism |
| ❖ Vapor pressure | ❖ Physicochemical properties of drug molecules.... |
| ❖ Sublimation critical point | ❖ Refractive index |
| ❖ Eutectic mixtures | ❖ Optical rotation |
| ❖ Gases aerosols inhalers | ❖ Dielectric constant |
| ❖ Relative humidity | ❖ Dipole moment |
| ❖ Liquid complexes | ❖ Dissociation constant |
| ❖ Liquid crystals | ❖ Determinations and applications |

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UNIT-III

SURFACE AND INTERFACIAL PHENOMENON

- ❖ Liquid interface
- ❖ Surface & interfacial tensions
- ❖ Surface free energy
- ❖ Measurement of surface & interfacial tensions
- ❖ Spreading coefficient
- ❖ Adsorption at liquid interfaces
- ❖ Surface active agents
- ❖ HLB Scale
- ❖ Solubilization
- ❖ Detergency
- ❖ Adsorption at solid interface

UNIT-IV

COMPLEXATION AND PROTEIN BINDING

- ❖ Introduction
- ❖ Classification of Complexation
- ❖ Applications
- ❖ Methods of analysis
- ❖ Protein binding
- ❖ Complexation and drug action
- ❖ Crystalline structures of complexes &
- ❖ Thermodynamic treatment of stability constants.

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UNIT-V

pH, BUFFERS AND ISOTONIC SOLUTIONS

- ❖ Sorensen's pH scale
- ❖ pH determination
- ❖ Electrometric and calorimetric applications of buffers
- ❖ Buffer equation
- ❖ Buffer capacity
- ❖ Buffers in pharmaceutical and biological systems
- ❖ Buffered isotonic solutions.

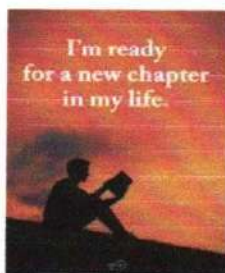
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REFERENCE

- PCI syllabus 2017-18 Given By Swami Ramanand Teerth Marathwada University, Vishnupuri, Nanded

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THANK YOU....!!!!!!

11

POTENTIOMETRY

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pH is a Potentiometric Measurement

- ❖ The Measuring System consists of a pH Measuring Electrode (indicating electrode) and Reference Electrode
- ❖ The **Potential Difference** Between the Two Electrodes is a Function of the pH Value of the Measured Solution.
- ❖ The **Analyte Solution** Must Be Conductive and is Part of the Electrical Circuit.

POTENTIOMETRIC ANALYSIS

- Based on potential measurement of electrochemical cells without any appreciable current
- The use of electrodes to measure voltages from chemical reactions



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DEFINITION

Potentiometry:

“Measuring the potential or Emf of a solution by using the set of Indicator electrode and reference electrode”.

Nernst equation

The potential(E) of a metal electrode at 25°C, immersed into a solution of its own ions is given by

$$E = E^0 + \frac{0.0592}{n} \times \log c$$

Where, E^0 = standard potential of the electrode

n = valency of ions

c = concentration of ions


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EVAPORATION

**PREPARED BY
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EVAPORATION

- **Defination :-**

- Theoretically,

“Evaporation means simply vaporization from the surface of a liquid. Vaporization of a liquid below its boiling point is called evaporation.”

- Thus, no boiling occurs and the rate of vaporization depends on the diffusion of vapour through the boundary layers above the Liquid.


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- Thus a practical definition of evaporation is
“The removal of liquid from a solution by boiling the solution in a suitable vessel and withdrawing the vapors, leaving a concentrated liquid residue.”
- This means that heat will be necessary to provide the latent heat of vaporization and, in general the rate of evaporation is controlled by the rate of heat transfer.
- Evaporators are designed, therefore, to give maximum heat transfer to the liquid, with the largest possible area, a suitable temperature gradient.

3

MECHANISM

- When heat applied in solution the motion of molecules increase and molecules present in the surface overcome the surface tension of the liquid and it evaporates because surface molecules have less cohesive force than others.

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FACTORS AFFECTING THE EVAPORATION

- There are seven factors to affect evaporation.
- 1. Temperature
- 2. Surface area
- 3. Agitation
- 4. Atmospheric aqueous vapour pressure
- 5. Atmospheric pressure on the liquid under evaporation
- 6. Type of product required
- 7. Economic factors

5

- 1) Temperature:** The rate of evaporation is directly proportional to the temperature.
- 2) Surface area:** The rate of evaporation is directly proportional to the surface area of the vessel exposed to evaporation.
- 3) Agitation:** is necessary for evaporation.
- 4) Atmospheric aqueous vapour pressure:** The rate of evaporation is inversely proportional to the atmospheric aqueous vapour pressure

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EMULSION

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Table of content

- Introduction
- Classification
- Emulsifying agent
- Emulsion Stability
- Detection
- Preparation
- Application of emulsion
- Pros and Cons
- Future development and research



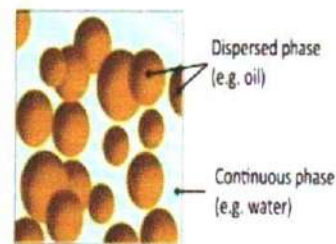
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INTRODUCTION

Emulsion are-

- heterogeneous
- thermolabile
- biphasic liquids

Contains two immiscible liquid which made miscible by Adding emulsifying agent



Emulsions are consist of 2 phases:

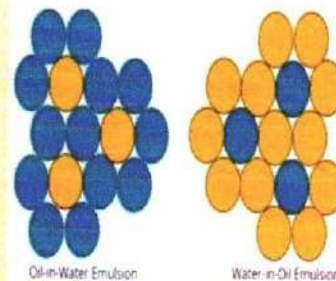
- ✓ Disperse or internal phase
- ✓ Continuous or external phase.



EMULSION TYPES

➤ Simple emulsions (macro emulsions)

- ❖ Oil-in-water (O/W)
- ❖ Water-in-oil (W/O)



➤ Multiple emulsions

- ❖ Oil-in-water-in-oil (O/W/O)
- ❖ Water-in-oil-in-water (W/O/W)

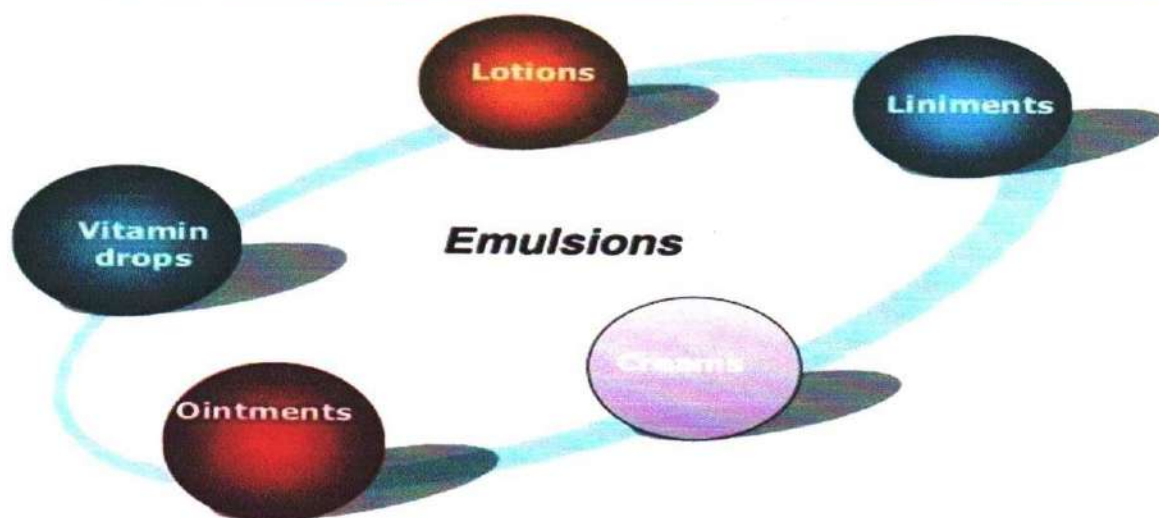


➤ Micro emulsions

- ❖ thermodynamically stable
- ❖ topically transparent



General Types of Pharmaceutical Emulsions:

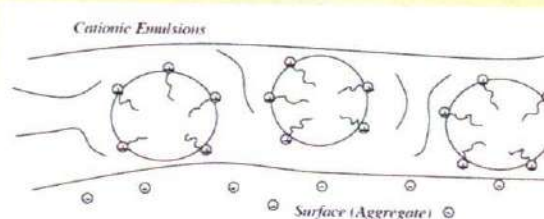



EMULSIFYING AGENT

Any compound that lowers the interfacial tension and forms a film at the interface

Types

- ☐ **Natural Emulsifying agent** –
acacia, tragacanth, agar, pectin
- ☐ **Synthetic emulsifying agents** –
anionic, cationic or nonionic



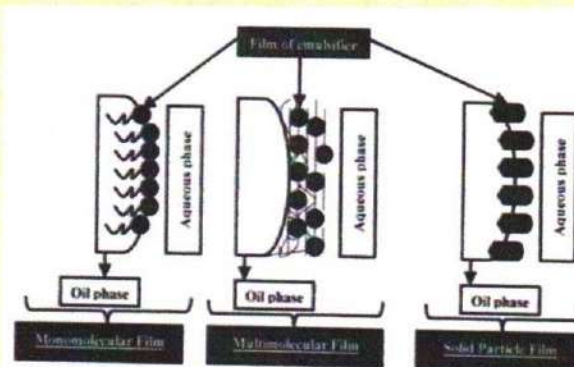

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MECHANISM OF ACTION

- When two immiscible liquids are agitated together so that one of the liquids is dispersed as small droplets in the other. To prevent coalescence between globules, it is necessary to use emulsifying agent.

There are three types of films:

1. Monomolecular Films.
2. Multimolecular Films.
3. Solid Particle Films.



Monomolecular Film

- Coherent monomolecular film.
- Flexible film formed
- Can prepare O/W or W/O emulsion.
- Lower surface tension and increase stability of emulsions.

Examples:

- ❖ Potassium Laurate
- ❖ Polyoxyethylene sorbitan monooleate

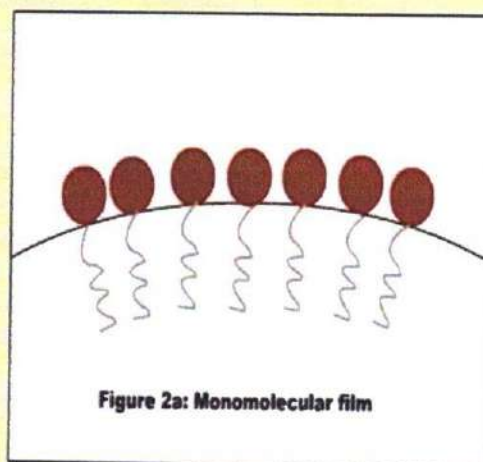


Figure 2a: Monomolecular film

Preparation of emulsion

Wet gum method

- ✓ Also known as "English Method"
- ✓ 4:2:1 of Oil : Water : Gum
- ✓ Formation of primary gum at the nucleus of the emulsion



ADVANTAGES OF EMULSION

- Unpalatable oils can be administered in palatable form.
- Unpalatable oil-soluble drugs can be administered in palatable form.
- The aqueous phase is easily flavoured.
- The oily sensation is easily removed.
- The rate of absorption is increased.
- It is possible to include two incompatible ingredients, one in each phase of the emulsion.



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Disadvantages of emulsion

- Preparation needs to be shaken well before use.
- A measuring device is needed for administration.
- A degree of technical accuracy is needed to measure a dose.
- Storage conditions may affect stability.
- Bulky, difficult to transport and prone to container breakages.
- Liable to microbial contamination which can lead to cracking.

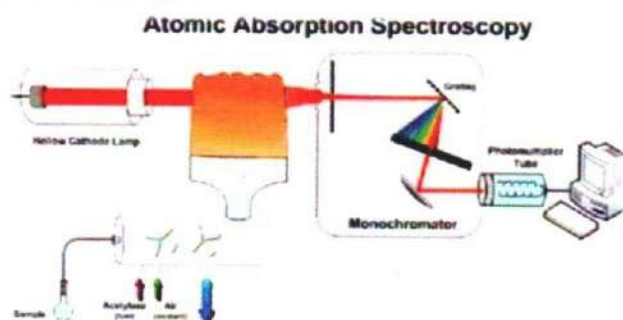
Future development and research

- Emulsions have shown promising and potential application in pharmaceutical research and development over the last two decades.
- Their major application in the field include sustained and controlled drug delivery.
- One of the unique advantage of emulsion is facile and inexpensive preparation.
- Challenge facing pharmaceutical scientists today is the long term instability of emulsion.
- Use of amphiphilic macromolecules instead of low molecular weight surfactants has shown some improvement in their stability.
- The future trend in emulsion formulation may see a replacement of interior emulsion with thermodynamically stable micro emulsion.


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Atomic Absorption Spectroscopy



By

MR. Mohammad Zameeruddin

Asst. Professor,

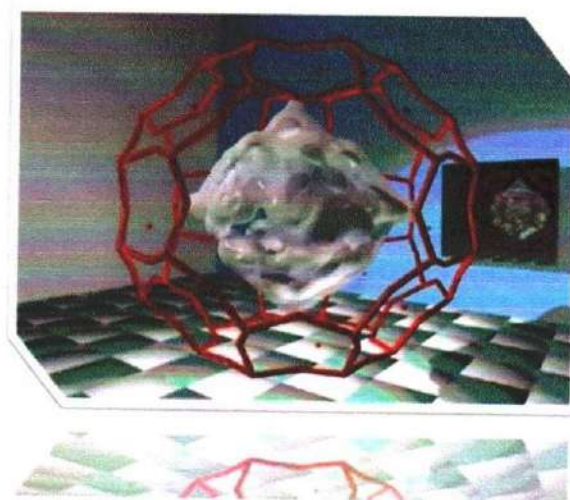
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SPECTROSCOPY

The study of structure of atom or molecules.

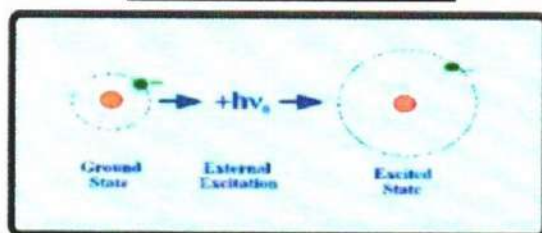
Used in analysis of wide range of sample

Can classify in atomic or molecular spectroscopy.

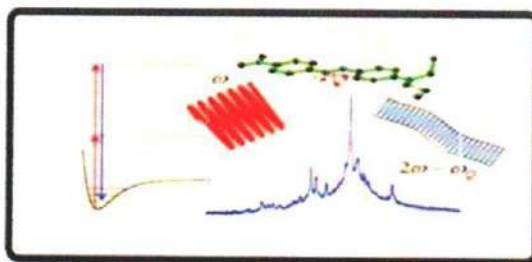


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ATOMIC SPECTROSCOPY

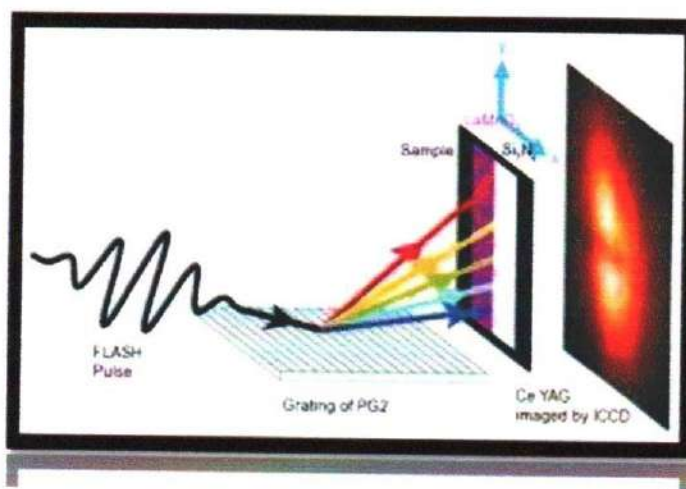


MOLECULAR SPECTROSCOPY



ABSORPTION SPECTROSCOPY

- It gives the measurement of absorbed energy by the atom or molecule after which it excite and gives the absorbed energy in the form of absorption spectrum




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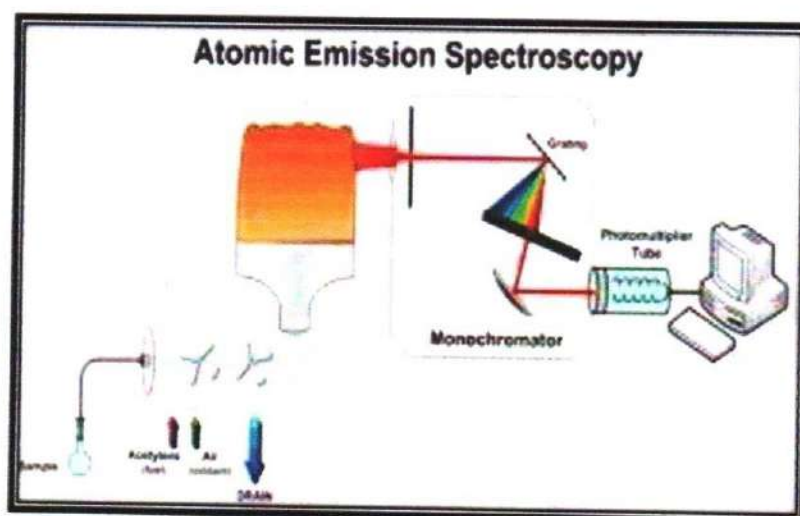
ATOMIC ABSORPTION SPECTROSCOPY

- **Atomic absorption spectroscopy** is a technique for determining the concentration of a particular metal element in a sample. Atomic absorption spectroscopy can be used to analyze the concentration of over 62 different metals in a solution.

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

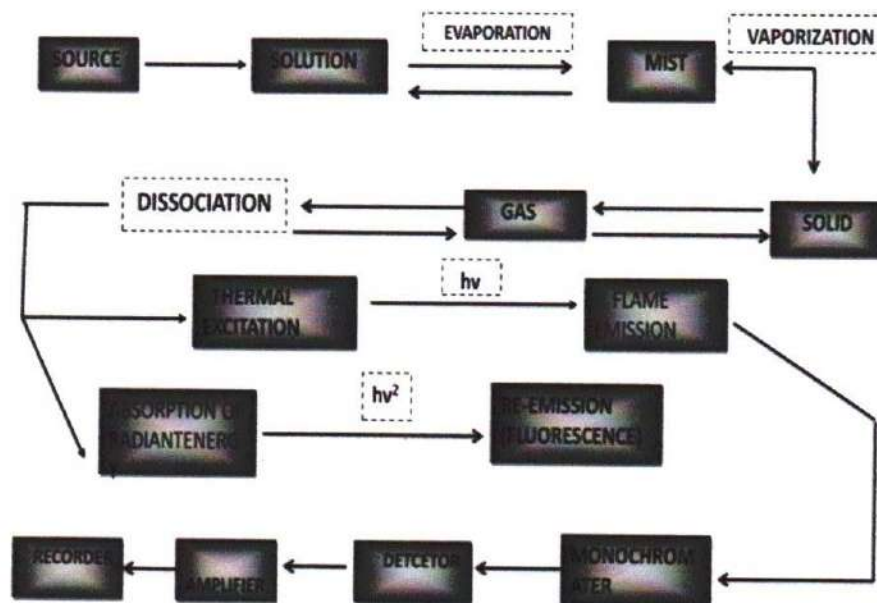
TYPES OF ATOMIC SPECTRA

1) ATOMIC EMISSION SPECTRA:



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PRINCIPLE OF ATOMIC ABSORPTION SPECTROSCOPY



- The total amount of light absorbed may be given mathematically by the following expressions:

$$\text{Total number of light absorbed} = \frac{\pi e^2}{mc} N f$$

Where,

e = is the charge on the electron of mass

m = mass of electron

c = is the speed of light

N = is the total number of atoms that can absorb at frequency in the light path

ν = frequency

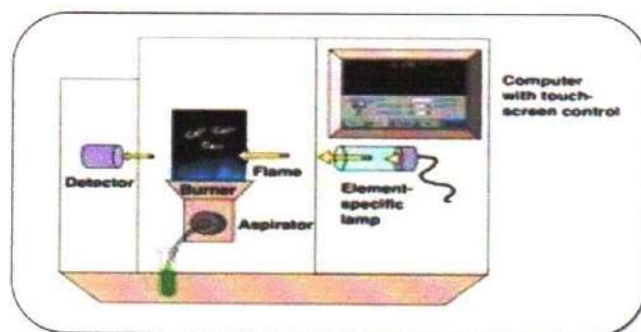
f = is the oscillator strength or ability of each atom to absorb at frequency

π = is constant

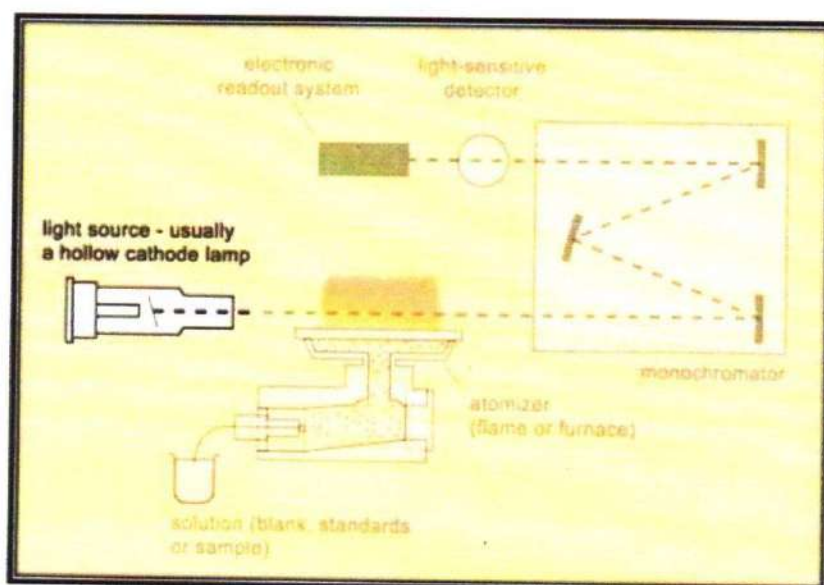
The above equation can be written as:

$$\text{Total amount of light absorbed} = \text{Constant} \times N \times f$$

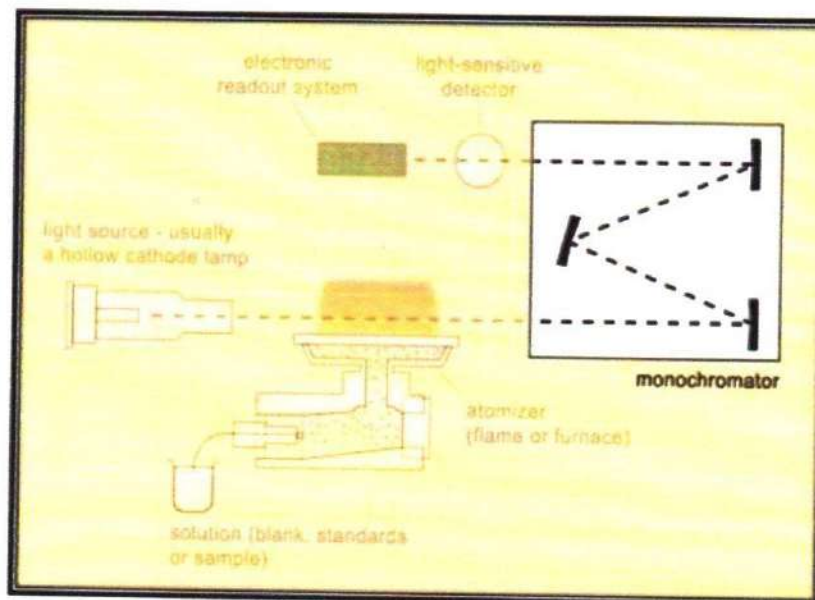
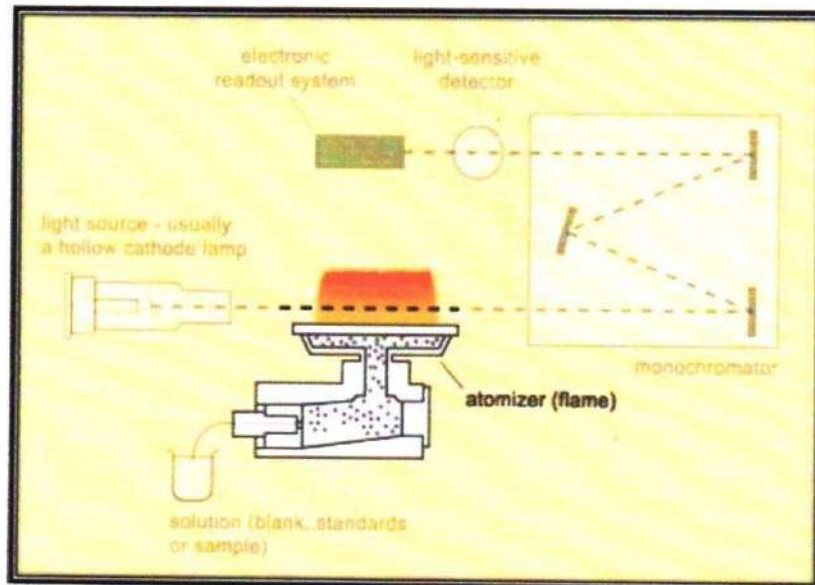
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INSTRUMENTATION OF ATOMIC ABSORPTION SPECTROSCOPY



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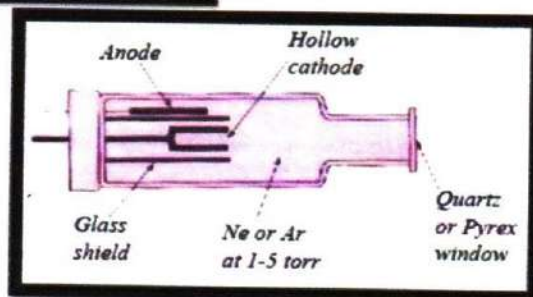
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1. RADIATION SOURCE

The main sources used for atomic absorption are:

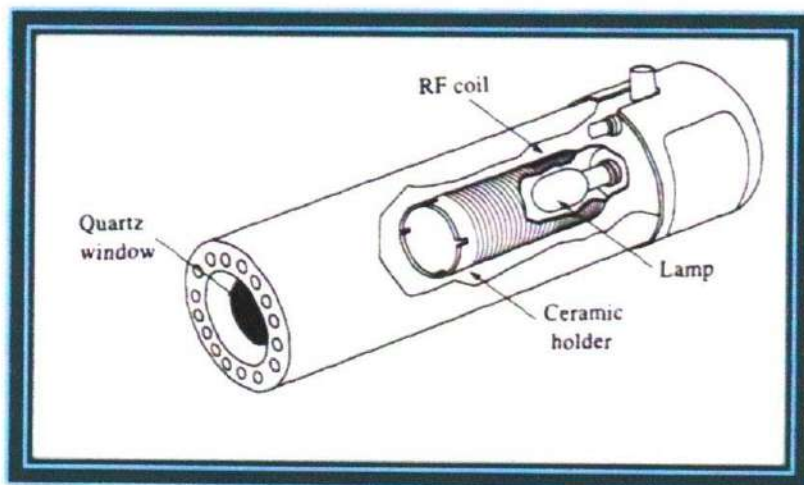
- I. Hollow Cathode Lamp (HCL)
- II. Electrode less Discharge Lamp (EDL)

I. HOLLOW CATHODE LAMP

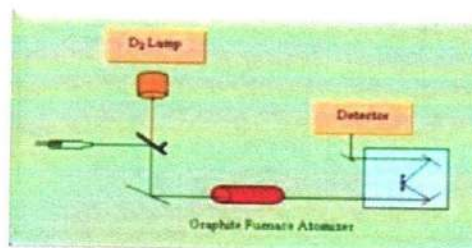
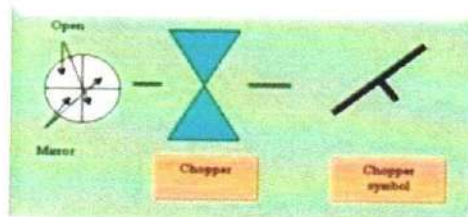


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II. ELECTRODELESS DISCHARGE LAMP

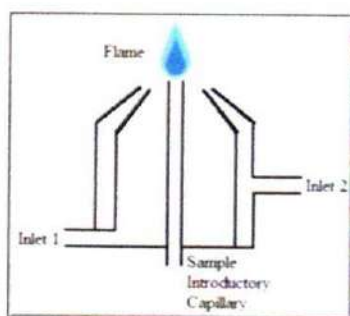
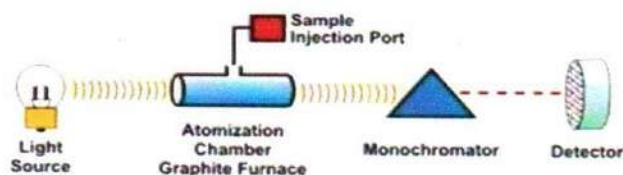


SOURCE MODULATION




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2. ATOMIZERS



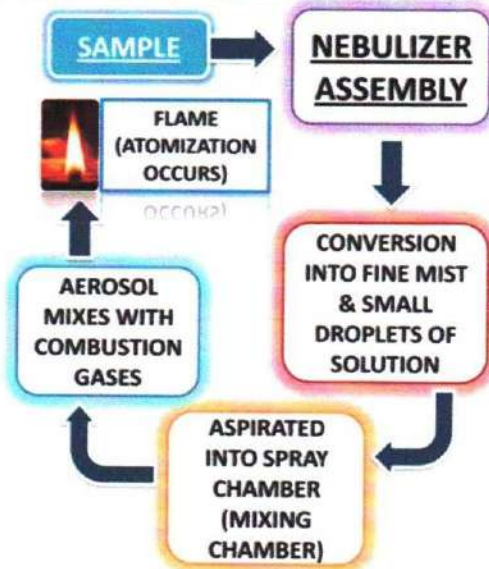
There are two types of atomizers which are used in Atomic Absorption Spectroscopy.

- Flame Atomizers
- Electrothermal Atomizers

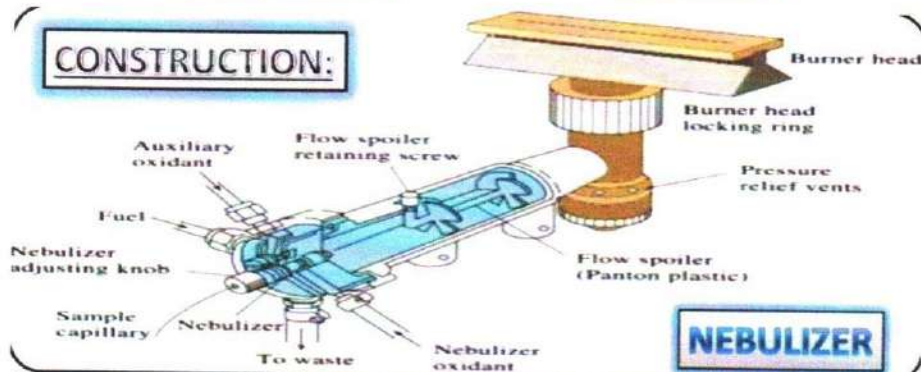


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SEQUENCE OF STEPS IN A FLAME ATOMIZER



CONSTRUCTION:



NEBULIZER



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2.3.1: Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences using ICT tools

- All of the institute's professors advocate using technology to enhance instruction. ICT is available in every lecture class to support interactive learning. Additionally, the institute's virtual classroom facility is completely employed as a learning system and aids students in gaining knowledge and skills from professionals working in corporate hospitals and pharmaceutical institutions.
- The institute has taken a number of initiatives to convert traditional classrooms into online learning environments. This is accomplished by periodically holding webinars and enticing people to use online learning materials by setting up Wi-Fi and ICT-equipped e-classrooms.
- All accessible teaching tools, including MOOCs and contemporary teaching and learning techniques, are employed often by the teaching staff to improve the learning experiences of the students. The e-learning tools listed below are often utilized.
- All departments have access to the internet, and the faculty is urged to use it and obtain the most recent knowledge in their fields in order to use ICT-enabled teaching techniques.

List of ICT –enabled Tools for Teaching & Learning

- 1) Digital Corner in Library
- 2) Webinars
- 3) Experimental pharmacology Ex-Pharm Software
- 4) DELL NET(E-LIBRARY)
- 5) E-contents in College Website
- 6) Computers
- 7) OHP /LCD Presentations
- 8) Audio visual presentations

Experimental pharmacology Ex-Pharm Software subscription:


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(Bringing Innovations in Health & Learning)
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Contact:0141-2783681, 9636348191
Mail: serviceheb@gmail.com, support@heb-nic.in
Website: www.heb-nic.in

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PAN NO: AJAPA7570J		GST Reg. No: 08AJAPA7570J128		INVOICE NO: EP/2530/2022			
				DATE: 30/06/2022			
SSS Indira College of Pharmacy, Vishnupuri, Nanded-431606, MS, India.		FORM: A	PRODUCT CODE: HP-JEN	SUB PRODUCT CODE: ONLINE	BOOKING EXECUTIVE CODE: MHMAK		
CLIENT LOCATION: Nanded							
SRL NO.	DESCRIPTION	SUBSCRIPTION FROM TO		AMOUNT IN RUPEES (INCLUSIVE ALL TAXES)	NET PRICE	REMARKS	CATEGORY
1	Experimental Pharmacology (Ex-Pharm) Series Software	JULY-22	JUNE-23	11,705 ₹	11,705 ₹	-	INSTITUTION
AMOUNT IN WORDS: Eleven Thousand Seven Hundred Five Rupees Only							

PAYMENT RECEIVED					BALANCE TO COLLECT				
MODE	AMOUNT	TRANS. NO.	DATE	BANK	MODE	AMOUNT	TRANS. NO.	DATE	BANK
D.D./CHEQUE					D.D./CHEQUE				
NEFT/RTGS	11,705 ₹	-	-	-	NEFT/RTGS				
ANY OTHER					ANY OTHER				
PAYMENT RECEIVED: Eleven Thousand Seven Hundred Five Rupees Only					BALANCE TO COLLECT:				

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Name of A/C Holder:Health Education Bureau
Name of the Bank:UCO Bank
Account Number:20960210003121
IFSC code:UCBA0002096
MICR Code:302028023
Bank Branch Name & Code:Mansarovar, Jaipur Branch . Code:002096
District & State: Jaipur, Rajasthan

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and is entitled to all benefits and privileges pertaining thereto.

Membership Number **IM – 4568** has been renewed and next
renewal is due on December 31, 2023.

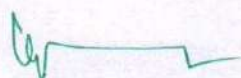


Date of Issue: January 16, 2023

Dr. Sangeeta Kaur
Director
DELNET, New Delhi

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Webinars:



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"Critical Thinking & Innovation Through Mind Mapping" Organized by Indira College of Pharmacy,
Vishnupuri, Nanded, Maharashtra on 08th February 2021.


Convener
Dr. Prakash J. Katakam


Co-ordinator
Ms. Megha Gajale

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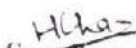
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Demonstration on HPLC Handling

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"Demonstration on HPLC Handling" Organized by Indira College of Pharmacy, Vishnupuri, Nanded,
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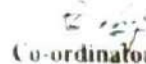
Automation Technology in Pharmaceutical Processing

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"Automation Technology in Pharmaceutical Processing" Organized by Indira College of Pharmacy,
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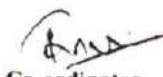
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