RESEARCH PROJECT DEPARTMENT OF CHEMISTRY J.D.M.V.P.Co-Op SAMAJ'S SHRI S.S.PATIL ARTS, SHRI.BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHRI.G.R.PANDIT SCIENCE COLLEGE, JALGAON NAAC ACREDITED "B+" GRADE



## Entitled

"Synthesis and Characterization of Conjugated Porous Polymers and Their Composites Having Potential Applicability SUBMITTED TO

K.B.C.NORTH MAHARASHTRA UNIVERSITY,

JALGAON SUBMITTED BY Ms. Swati Rajendra Wagh (Mathing) Ms. Sujata Jivan Patil (Mathing) Ms. Uma Sunil Patil (Mathing) Ms. Deepawali Bhimrao Gokhle (Mathing) Ms. Chetna Pralhad Patil (Copabil) UNDER THE GUIDENCE OF

Dr.Mrs.M.S.Patil

NUTAN MARATHA COLLEGE JALGAON (2022-23)

DEPARTMENT OF CHEMISTRY J.D.M.V.P.Co-Op SAMAJ'S SHRI S.S.PATIL ARTS, SHRI.BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHRI.G.R.PANDIT SCIENCE COLLEGE, JALGAON NAAC ACREDITED "B+" GRADE



## -: CERTIFICATE:-

This is certifying that project on Entitled Synthesis and Characterization of Conjugated Porous Polymers and Their Composites Having Potential Applicability

Has been submitted by In the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic Chemistry) under the K.B.C. North Maharashtra University, Jalgaon is carried out under our supervisor and guidance.

Springte

Dr.Mr.M.SfMote Project In Charge

Dr.Mrs.M.S.Patil Head of Department of Chemistry

> READ OF THE Chemistry Dant. Rel S. S. Pattl Arts Stor Bhumakets E -Setuniths Cont. and Shir G. B. Pauet Coloury College (Alagorit

## P.G. DEPARTMENT OF CHEMISTRY NAAC Accredited 'B+' Grade J.D.M.V.P.Co-Op SAMAJ's SHRI S.S.PATIL ARTS, SHRI.BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHRI.G.R.PANDIT SCIENCE COLLEGE, JALGAON

## -: DECLARATION:-

We hereby declare that the MSC Research Project entitled, Synthesis and Characterization of Conjugated Porous Polymers and Their Composites Having Potential

Applicability has been complete and written by us under the supervisor of

Dr.M.S. Patil Present work done not copied from any other project report submitted to university or examining body.

DATE: PLACE:

NAME:

Miss. Sujata Jivan Patil Miss. Uma Sunil Patil Miss. Swati Rajendra Wagh Miss. Dipawali Bhimrav Gokhale Miss.Chetna Pralahad Patil A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co-op SAMAJ'S SHRI.S.S. PATIL ARTS, SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

### JALGAON-425001

NAAC ACREDITED "B+" GRADE



ENTITLED

"PHYTOCHEMICAL SCREENING OF TRACHYSPERMUM AMMI PLANT AND SYNTHESIS OF SIVER NANOPARTICLES"

SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY,

JALGAON

SUBMITTED BY

Ms. SAMRUDDHI ANIL DESHPANDE

Ms. KARANKAL ROHINI DHYANESHWAR

Ms. PATIL MRUNAL SUNIL

Ms. PATIL POONAM LOTAN

Ms. JAIN PALLAVI PRAKASH

UNDER THE GUIDENCE

Dr.Mrs.M.S.PATIL NUTAN MARATHA COLLEGE , JALGAON (2022-2023)

NUTAN MARATHA COLLEGE 2022- 2023 1 39

# NUTAN MARATHA COLLEGE, JALGAON (2021-2022)

DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co-op SAMAJ'S SHRI.S.S. PATIL ARTS, SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

## JALGAON-425001

## NAAC ACREDITED "B+" GRADE



CERTIFICATE

## This is certifying that the project on entitled "PHYTOCHEMICAL SCREENING OF TRACHYSPERMUM AMMI PLANT AND SYNTHESIS OF SIVER NANOPARTICLES"

HAS BEEN SUBMITTED BY

Ms. SAMRUDDHI ANIL DESHPANDE

Ms. KARANKAL ROHINI DHYANESHWAR

Ms. PATIL MRUNAL SUNIL

Ms. PATIL POONAM LOTAN

Ms. JAIN PALLAVI PRAKASH

In the partial fulfilment and requirement for the award of the degree of MASTER OF SCIENCE (Organic chemistry)under the K.B.C NORTH MAHARASHTRA UNIVERSITY, JALGAON carried out under the supervision and guidance.

Meal

Dr.Mrs. M.S.Patil Project in charge

Dr. Mrs. M.S.PATH Head of de and Shir G. R. Pas

NUTAN MARATHA COLLEGE 2022-

P.G.DEPARTMENT OF CHEMISTRY NAAC ACREDITED "B+" GRADE J.D.M.V.P'S Co-op SAMAJ'S SHRI.S.S. PATIL ARTS, SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE, JALGAON-425001

## DECLARATION

We hereby declare that the M.SC. research project entitled "PHYTOCHEMICAL SCREENING OF TRACHYSPERMUM AMMI PLANT AND SYNTHESIS OF SIVER NANOPARTICLES" has completed and written by us under the supervision of Dr. M.S.patil the present work is not been copied from any other project report submitted to university or examining body

DATE:-

PLACE:-JALGAON NAME:-Ms. SAMRUDDHI ANIL DESHPANDE Ms. KARANKAL ROHINI DHYANESHWAR Ms. PATIL MRUNAL SUNIL Ms. PATIL POONAM LOTAN Ms. JAIN PALLAVI PRAKASH

NUTAN MARATHA COLLEGE 2022 - 2023 3 39

## A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS, SHRL BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### JALGAON-425001

NAAC ACREDITED"B+" GRADE



ENTITLED

"Synthesis of Azo compounds by coupling of Substituted diazonium salt with 2-Chloro phenol"

SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY.

JALGAON

SUBMITTED BY

Mr. PATIL SATISH ANANDA

Mr. PATIL SAURABH SANJAY

UNDER THE GUIDENCE

Dr.Mrs.M.S.PATIL

NUTAN MARATHA COLLEGE, JALGAON (2022-2023)



DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS , SHRL BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

## JALGAON-425001

NAAC ACREDITED "B+" GRADE



CERTIFICATE

This is certifying that the project on entitled "Synthesis of Azo compounds by coupling of Substituted diazonium salt with 2-Chloro

phenol"

HAS BEEN SUBMITTED BY

#### Mr. PATIL SATISH ANANDA

#### Mr. PATIL SAURABH SANJAY

In the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic chemistry) under the K.B.C NORTH MAHARASHTRA UNVIERSITY . JALGAON carried out under the supervision and guidance.

Dr.S.P.Mote SHF Project in charge

Dr.Mrs. M.S.Patil

Head of Department

PHAD OF THD Chemistry Dont. Said 5. S. Patil Arts Shill Bhautaber 7. 1 Salutking Com. and Shir G. R. Pands Science College Jaleson PG DEPARTMENT OF CHEMISTRY

NAAC ACREDITED "B+" GRADE J.D.M.V.P'S Co.op SAMAJ'S SHRI.S.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

## JALGAON-425001

## DECLARATION

We here by declare that the M.SC. research project entitled "Green synthesis of silver nanoparticles and their phytochemical analysis from natural products. "has completed and written by us under the supervision of Dr. M.S.patil the present work is not been copied from any other project report submitted to university or examining body

DATE :-PLACE :- JALGAON

NAME :-Mr. PATIL SATISH ANANDA Mr. PATIL SAURABH SANJAY

## A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS, SHRI, BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### JALGAON-425001

NAAC ACREDITED"B+" GRADE



ENTITLED

"Synthesis and Characterisation of Organic Fertilizer using Natural organic material". SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY,

JALGAON

SUBMITTED BY

Mr. HATKAR KISHOR WALMIK

Mr. BHOI GOPAL JAGANNATH

Mr. GIRASE ANAND RAJENDRASING

Mr. CHAUDHARI RAHUL KISHOR

Mr. CHAUDHARI ROHIT ANIL

UNDER THE GUIDENCE

Dr.Mrs.M.S.PATIL

NUTAN MARATHA COLLEGE, JALGAON (2022-2023)

Page 11

## DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS, SHRI, BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHRLG.R.PANDIT SCIENCE COLLEGE,

JALGAON-425001

NAAC ACREDITED "B+" GRADE



#### CERTIFICATE

This is certifying that the project on entitled

"Synthesis and Characterisation of Organic Fertilizer using Natural organic material". HAS BEEN SUBMITTED BY

> Mr. HATKAR KISHOR WALMIK Mr. BHOI GOPAL JAGANNATH Mr. GIRASE ANAND RAJENDRASING Mr. CHAUDHARI RAHUL KISHOR Mr. CHAUDHARI ROHIT ANIL

in the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic chemistry) under the K.B.C NORTH MAHARASHTRA UNVIERSITY , JALGAON carried out under the supervision and guidance.

Dr.Mrs. M.S.Patil

Project in charge

Dr.Mrs. M.S.Patil

Head of Department Chemistry Dept. Bel 5. 5. Patll Acts Shri Bhausebeb 1. Entunichy Com. and Shir G. R. Paede Science College. Jateace PG DEPARTMENT OF CHEMISTRY

## NAAC ACREDITED "B+" GRADE

# J.D.M.V.P'S Co.op SAMAJ'S SHRI.S.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

#### DECLARATION

We here by declare that the M.SC. research project entitled "<u>Synthesis and Characterisation of Organic Fertilizer using Natural</u> <u>organic material</u>". "has completed and written by us under the supervision of Dr. M.S.patil the present work is not been copied from any other project report submitted to university or examining body

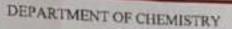
NAME :-

DATE :-30/05/2023

PLACE :- JALGAON

Mr. HATKAR KISHOR WALMIK Mr. BHOI GOPAL JAGANNATH Mr. GIRASE ANAND RAJENDRASIG Mr. CHAUDHARI RAHUL KISHOR Mr. CHAUDHARI ROHIT ANIL

Page | 3



J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHRLG.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

NAAC ACREDITED "B+" GRADE



CERTIFICATE

This is certifying that the project on entitled

"Green synthesis of silver nanoparticles and their phytochemical analysis from natural products" HAS BEEN SUBMITTED BY

#### Mr. MAHAJAN OJAS RAJKUMAR

Mr. PATIL KUNAL ANIL

Mr. PATIL DIPAK BALU

Mr. MOHASIN AHAMAD ABDUL QADIM MANYAR

## Mr. KHAIRKAR GIRISH GOVINDA

In the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic chemistry) under the K.B.C NORTH MAHARASHTRA UNIVERSITY . JALGAON carried out under the supervision and guidance.

MBal Dr. Mrs

Project in charge

Head of Department MEAD OF THE Chemistry Dept. Peri S. S. Patil Arts Skri Bhautokeb T. F Islankke Con. and Shir G. R. Pandit Science College, Jalgage NUTAN MARATHA COLLEGE JALGAON 2022-23

#### A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS, SHRI, BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

NAAC ACREDITED"B+" GRADE



ENTITLED

"Green synthesis of silver nanoparticles and their phytochemical analysis from natural products." SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY,

JALGAON

SUBMITTED BY

Mr. MAHAJAN OJAS RAJKUMAR

Mr. PATIL KUNAL ANIL

Mr. PATIL DIPAK BALU

Mr. MOHASIN AHAMAD ABDUL QADIM MANYAR

Mr. KHAIRKAR GIRISH GOVINDA

UNDER THE GUIDENCE

Dr.Mrs.M.S.PATIL

NUTAN MARATHA COLLEGE, JALGAON (2022-2023)

NUTAN MARATHA COLLEGE JALGAON 2022-23

PG DEPARTMENT OF CHEMISTRY

## NAAC ACREDITED "B+" GRADE

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

#### DECLARATION

We here by declare that the M.SC. research project entitled "Green synthesis of silver nanoparticles and their phytochemical analysis from natural products. "has completed and written by us under the supervision of Dr. M.S.patil the present work is not been copied from any other project report submitted to university or examining body

## DATE :-PLACE :- JALGAON

#### NAME :-

Mr. MAHAJAN OJAS RAJKUMAR Mr. PATIL KUNAL ANIL Mr. PATIL DIPAK BALU Mr. KHAIRKAR GIRISH GOVINDA Mr. MOHASIN AHAMAD ABDUL QADIM MANYAR .

## A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY

## J.D.M.V.P'SCo.op SAMAJ'S SHRLS.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

NAAC ACREDITED"B+" GRADE



ENTITLED

"Phytochemical analysis of some medicinal plant by using different

solvent." SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY,

JALGAON

SUBMITTED BY

Mr. WAGH KIRAN SHANTILAL

Mr. BAVISKAR VIKAS RAJENDRA

Mrs. PAWAR PRAPTI PRASHANT

Mrs. THORAT ASHWINI HIRALAL

Mr. GIRASE AKASH INDRASING

Mr. PATIL SACHIN KAILAS

UNDER THE GUIDENCE

Dr.Mrs.M.S.PATIL

NUTAN MARATHA COLLEGE, JALGAON (2022-2023)

11

NUTAN MARATHA COLLEGE JALGAON 2022-2023

### DEPARTMENT OF CHEMISTRY

## J.D.M.V.P'SCo.op SAMAJ'S SHRI.S.S. PATIL ARTS, SHRI, BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHRI.G.R.PANDIT SCIENCE COLLEGE,

#### **JALGAON-425001**

NAAC ACREDITED "B+" GRADE



## CERTIFICATE

This is certifying that the project on entitled

"Phytochemical analysis of some medicinal plant by using different solvent"

## HAS BEEN SUBMITTED BY

Mr. WAGH KIRAN SHANTILAL Mr. BAVISKAR VIKAS RAJENDRA Mrs. PAWAR PRAPTI PRASHANT Mrs. THORAT ASHWINI HIRALAL Mr. GIRASE AKASH INDRASING Mr. PATIL SACHIN KAILAS

In the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic chemistry)under the K.B.C NORTH MAHARASHTRA UNIVERSITY , JALGAON carried out under the supervision and guidance.

MSOL Dr.Mrs. M.S.Patil

Project in charge

Dr.Mrs M.S.Patil

Head of Department Chemistry Doot. Balanta S. S. Patil Arts Shri Bhaunaheb 1. \* Salunkis Com. and Shir G. R. Pandt Science College. Jalguor

## PG DEPARTMENT OF CHEMISTRY

# NAAC ACREDITED "B+" GRADE J.D.M.V.P'S Co.op SAMAJ'S SHRI.S.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE,

## JALGAON-425001

## DECLARATION

We here by declare that the M.SC. Research project entitled "Phytochemical analysis of some medicinal plant by using different solvent."has completed and written by us under the supervision of Dr.M.S.patil the present work is not been copied from any other project report submitted to university or examining body

DATE :- OG / OG / 2023 PLACE :- JALGAON	NAME :- Mr.WAGH KIRAN SHANTILAL Mr.BAVISKAR VIKAS RAJENDRA Mrs.PAWAR PRAPTI PRASHANT P. P. P. Quar Mrs.THORAT ASHWINI HIRALAL Mr.GIRASE AKASH INDRASING Mr. PATIL SACHIN KAILAS

NUTAN MARATHA COLLEGE JALGAON 2022-2023Page

A SHORT RESEARCH PROJECT DEPARTMENT OF CHEMISTRY J.D.M.V.P'S Co.op SAMAJ'S SHRI.S.S. PATIL ARTS , SHRI. BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE, JALGAON-425001 NAAC ACREDITED"B+" GRADE



ENTITLED

"Green Synthesis of Aspirin and its Comparative Study with <u>Traditional Methods.</u>" SUBMITTED TO

K.B.C. NORTH MAHARASTRA UNIVERSITY,

JALGAON SUBMITTED BY, Mr. SURYAWANSHI LALIT SANJAY Mr. PATIL RAHUL DILIP Mr. PAWAR VIKAS SUKDEO Mr. PATIL VIVEK RAMRAO Mr. PATIL SANJOG RAJENDRA Mr. PAWAR MAYUR MUKUNDA Mr. SHINDE RUSHIKESH DIWAKAR UNDER THE GUIDENCE Dr.Mrs.M.S.PATIL

NUTAN MARATHA COLLEGE, JALGAON (2022-2023)

NUTAN MARATHA COLLAGE JALGOAN

## DEPARTMENT OF CHEMISTRY

J.D.M.V.P'S Co.op SAMAJ'S SHRLS.S. PATIL ARTS , SHRL BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE, JALGAON-425001 NAAC ACREDITED "B+" GRADE



CERTIFICATE

This is certifying that the project on entitled

"Green Synthesis of Aspirin and its Comparative Study with Traditional Methods"

HAS BEEN SUBMITTED BY

Mr. SURYAWANSHI LALIT SANJAY Mr. PATIL RAHUL DILIP Mr. PAWAR VIKAS SUKDEO Mr. PATIL VIVEK RAMRAO Mr. PATIL SANJOG RAJENDRA Mr. PAWAR MAYUR MUKUNDA Mr. SHINDE RUSHIKESH DIWAKAR

In the partial fulfilment and requirement for the award of the degree of

MASTER OF SCIENCE (Organic chemistry) under the K.B.C NORTH MAHARASHTRA UNVIERSITY, JALGAON carried out under the supervision and guidance.

Dr.Mrs

Project in charge

NUTAN MARATHA COLLAGE JALGOAN

P.G.DEPARTMENT OF CHEMISTRY NAAC ACREDITED "B+" GRADE J.D.M.V.P'S Co.op SAMAJ'S SHRI.S.S. PATIL ARTS , SHRI. BHAUSAHEB T.T. SALUNKHE COMMERCE AND SHIR.G.R.PANDIT SCIENCE COLLEGE, JALGAON-425001

## DECLARATION

We here by declare that the M.SC. research project entitled "Green Synthesis of Aspirin and its Comparative Study with Traditional Methods " has completed and written by us under the supervision of Dr. M.S.patil the present work is not been copied from any other project report sumitted to unviersity or examining body

DATE PLACE :- JALGAON

NAME :-

Mr. SURYAWANSHI LALIT SANJAY Mr. PATIL RAHUL DILIP Mr. PAWAR VIKAS SUKDEO Mr. PATIL VIVEK RAMRAO Mr. PATIL SANJOG RAJENDRA Mr. PAWAR MAYUR MUKUNDA Mr. SHINDE RUSHIKESH DIWAKAR A Dissertation on

## HYDROPONICS : AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING



## J.D.M.V.P. SAMAJ'S , SHRI. S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SAALUNKHE COMMERCE AND SHRI I. G. R. PANDIT SCIENCE COLLEGE. NUTAN MARTHA COLLEGE, JALGAON In Partial Fulfillment of M. SC. in Botany

Submitted by

**Aachal Vishwanath Kadam** 

M. Sc. (Botany) II nd Year

Supervised By Prof. Dr. L. P. Deshmukh Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S , SHRI, S. S. PATIL ART'S , SHRI . BHAUSAHEB T. T. SAALUNKHE COMMERCE AND SHRI . G. R. PANDIT SCIENCES COLLEGE , (NUTAN MARATHA COLLEGE ), JALGAON.

2023

# CERTIFICATE

This is certify that the dissertation work entitled HYDROPONIC :AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING is the original work carried out by Aachal Vishwanath Kadam under the supervision of prof. Dr. L. P. Deshmukh for partial fulfillment of M. Sc. (Botany) during the academic year 2022-24 at Nutan Maratha collage, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

Miss - Kiran f. Patil Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha Collage, Jalgaon.



Ms. Aachal Vishwanath Kadam M.Sc II Department Of Botany

# DECLARATION

I confirm that the project work titled HYDROPONICS :AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING being submitted in partial fulfillment for the M. SC. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree ;either in this or other university.

Aachal Vishwanath Kadam

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh Principal and Head, Department of Botany NUTAN MARATHA COLLEGE, JALGAON.

Ms. Aachal Vishwanath Kadam M.Sc II Department Of Botany

Page 2

# ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to **Prof. Dr. L. P. Deshmukh**, Principal and Head, Department of Botany, Nutan Maratha Collage, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful **to Mrs. Nafisa tadvi madam**, Ms.Kiran patil madam For their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in ever ways possible. last but not the least ;we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

## Aachal Vishwanath Kadam

Ms. Aachal Vishwanath Kadam M.Sc II Department Of Botany

#### A Dissertation on

Floral diversity of family Asteraceae from Manudevi forest, Jalgaon district, Maharashtra.

Submitted to



J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

#### COLLEGE

#### NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

### M.Sc. in Botany

Submitted by

Aditi Kailas Patil

M.Sc. (Botany) IInd Year

Supervised By

## Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

2023

### CERTIFICATE

This is to certify that the dissertation work entitled "Floral diversity of family Asteraceae from Manudevi forest, Jalgaon district, Mahrashtra" is the original work carried out by Aditi Kailas Patil, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

Miss - Kiran P. Patil Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon

External Examiner

## DECLARATION

I confirm that the project work titled "Study of floral diversity of Asteraceae family from Manudevi forest, Jalgaon district, Maharashtra " being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

Aditi Kailas Patil

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

## ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to **Prof. Dr. L. P. Deshmukh**, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to **Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil madam** for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in every ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

Aretid Aditi Kailas Patil A Dissertation on

Study of floral diversity of family Asteraceae from Manudevi forest, Jalgaon district

Submitted to



J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

COLLEGE

NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

Submitted by

Chandralekha Chandrakant Pawar

M.Sc. (Botany) IInd Year

Supervised By

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

## 2023

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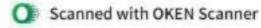
#### CERTIFICATE

This is to certify that the dissertation work entitled "Study of floral diversity of family Asteraceae from Manudevi forest, Jalgaon district" is the original work carried out by Chandralekha Chandrakant Pawar, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon **External Examiner** 



#### DECLARATION

I confirm that the project work titled "Study of floral diversity of family Asteraceae from Manudevi forest, Jalgaon district" being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

Chandralekha Chandrakant Pawar

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

#### ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to **Prof. Dr. L. P. Deshmukh**, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to **Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil madam** for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our colleagues for their cooperation in every ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

Chandralekha Chandrakant Pawar

A Dissertation on

## HYDROPONICS : AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING



## J.D.M.V.P. SAMAJ'S , SHRI. S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SAALUNKHE COMMERCE AND SHRI I. G. R. PANDIT SCIENCE COLLEGE. NUTAN MARTHA COLLEGE, JALGAON

In Partial Fulfillment of M. SC. in Botany

Submitted by Kalyani Nandakishor Patil

M. Sc. (Botany) II nd Year

Supervised By

Prof. Dr. L. P. Deshmukh Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S , SHRI. S. S. PATIL ART'S , SHRI . BHAUSAHEB T. T. SAALUNKHE COMMERCE AND SHRI . G. R. PANDIT SCIENCES COLLEGE , (NUTAN MARATHA COLLEGE ), JALGAON.

2023

# CERTIFICATE

This is certify that the dissertation work entitled HYDROPONIC :AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING is the original work carried out by Kalyani Nandakishor Patil, under the supervision of prof. Dr. L. P. Deshmukh for partial fulfillment of M. Sc. (Botany) during the academic year 2022-24 at Nutan Maratha collage, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

**Project Supervisor** 

**Prof. Dr. L. P. Deshmukh** Principal, Reader and Head, Department of Botany, Nutan Maratha Collage, Jalgaon. **External Examiner** 

Ms. Kalyani Nandakishor Patil M.Sc II Department Of Botany

# DECLARATION

I confirm that the project work titled **HYDROPONICS** :**AN UPCOMING AND INNOVATIVE WAY OF FUTURE FARMING** being submitted in partial fulfillment for the **M**. **SC. (Botany)** is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree ;either in this or other university.

Kalyani Nandakishor Patil

I certify that the declaration made above by the candidate above.

## Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany NUTAN MARATHA COLLEGE, JALGAON.

Ms. Kalyani Nandakishor Patil M.Sc II Department Of Botany

Hydroponics : An Upcoming And Innovative Way Of Future Farming

# ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to **Prof. Dr. L. P. Deshmukh**, Principal and Head, Department of Botany, Nutan Maratha Collage, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful **to Mrs. Nafisa tadvi madam ,Ms.Kiran patil madam** For their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in ever ways possible. last but not the least ;we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

### Kalyani Nandakishor Patil

Ms. Kalyani Nandakishor Patil M.Sc II Department Of Botany

# A Dissertation on

# Floristic study of Family Euphorbiaceae from Manudevi Forest, Jalgaon district.

Submitted to



J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

# COLLEGE

NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

-Submitted by

Sana Kausar Qurban Khan Tadvi

M.Sc. (Botany) IInd Year

Supervised By

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

2023

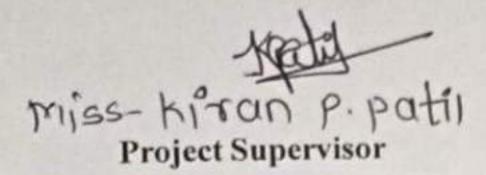


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This is certify that the dissertation work entitled "Floristic study of family Euphorbiaceae from Manudevi Forest, Jalgaon district" is the original work carried out by Sana Kausar Qurban Khan Tadvi, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....



External Examiner

Prof. Dr. L. P. Deshmukh

Principal,

Reader and Head,

Department of Botany,

Nutan Maratha College, Jalgaon



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# ACKNOWLEDGEMENT

It is an honor and heartfelt\_pleasure to express sincere gratitude

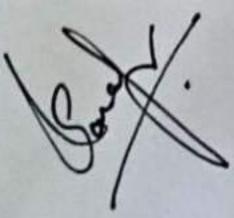
to our project supervisor to Prof. Dr. L. P. Deshmukh, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to Prof. Mrs. Nafisa

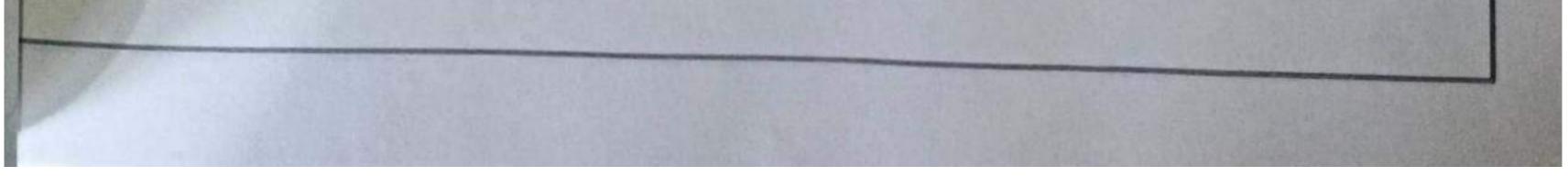
Tadavi Madam, Prof. Kiran Patil madam for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in every ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

Sana Kausar Qurban Khan Tadvi





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#### A Dissertation on

### Floral Diversity of Family Convolvulaceae from Manudevi Forest, Jalgaon.

Submitted to



#### J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI, BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

COLLEGE

### NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

Submitted by

Shaikh Uzma Tahesin Mohammed Azim

M.Sc. (Botany) IIod Year

Supervised By

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRL G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

2023

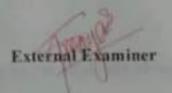
This is certify that the dissertation work entitled "Floral diversity of Family Convolvulaceae from Manudevi Forest, Jalgaon" is the original work earried out by Shaikh Uzma Tahesin Mohammed Azim, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

Miss-Kisa patil **Project Supervisor** 

Prof. Dr. L. P. Deshmukh

Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon



### DECLARATION

I confirm that the project work titled "Floral diversity of Family Convolvulaceae from Manudevi Forest, Jalgaon" being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

Shaikh Uzma Tahesin Mohammed Azim

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

#### ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to Prof. Dr. L. P. Deshmukh, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil Madam for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in ever ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

Shaikh Uzma Tahesin Mohammed Azim

### A Dissertation on

Floral diversity of family Acanthaceae from Manudevi forest, Jalgaon district.

Submitted to



J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

#### COLLEGE

#### NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

Submitted by

Shifa Khan Zakir Khan

M.Sc. (Botany) IInd Year

Supervised By

#### Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

This is to certify that the dissertation work entitled "Floral diversity of Acanthaceae family from Manudevi forest, Jalgaon district" is the original work carried out by Shifa Khan Zakir Khan, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on......

Miss-kiran Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon

External Examiner

#### DECLARATION

I confirm that the project work titled "Floral diversity of Acanthaceae family from Manudevi forest, Jalgaon district " being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

Shifa Khan Zakir Khan

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

### ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to Prof. Dr. L. P. Deshmukh, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil madam for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our colleagues for their cooperation in every ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

#### Shifa Khan Zakir Khan

A Dissertation on

Study of floral diversity of Fabaceae family from Manudevi forest. Jalgaon district.

Submitted to



J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

COLLEGE

### NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

Submitted by

Snehal Ganesh Ranit

M.Sc. (Botany) IInd Year

Supervised By

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

2023

This is certify that the dissertation work entitled "Study of floral diversity of Fabaceae family from Manudevi forest, Jalgaon distric" is the original work carried out by Snehal Ganesh Ranit, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on ......

**External Examiner** 

Miss Kiran P. Patil Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon

#### DECLARATION

I confirm that the project work titled "Study of floral diversity of Fabaceae family from Manudevi forest, Jalgaon district " being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

**Snehal Ganesh Ranit** 

I certify that the declaration made above by the candidate above.

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

#### ACKNOWLEDGEMENT

It. Is. an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to Prof. Dr. L. P. Deshmukh, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil madam for their help during work.

Besides we are also greatly indebted to non-teaching staff members, research scholars and our collogues for their cooperation in every ways possible. Last but not the least; we are heartily thankful to our parents and friends for their inspiration through the course.

Thanking all.

**Snehal Ganesh Ranit** 

#### A Dissertation on

### Orchids of Manudevi forest, Jalgaon district, Maharashtra.

Submitted to



### J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE COMMERCE AND SHRI. G. R. PANDIT SCIENCE

COLLEGE

NUTAN MARATHA COLLEGE, JALGAON

In Partial Fulfillment of

M.Sc. in Botany

Submitted by

Prasad Kailas Sonawane

M.Sc. (Botany) IInd Year

Supervised By

Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany

J.D.M.V.P. SAMAJ'S, SHRI S. S. PATIL ART'S, SHRI. BHAUSAHEB T. T. SALUNKHE

COMMERCE AND SHRI. G. R. PANDIT SCIENCE COLLEGE (NUTAN MARATHA COLLEGE), JALGAON

2023

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This is to certify that the dissertation work entitled "Orchids of Manudevi forest, Jalgaon district, Mahrashtra" is the original work carried out by Prasad Kailas Sonawane, under the supervision of Prof. Dr. L. P. Deshmukh for partial fulfillment of M.Sc. (Botany) during the academic year 2022-23 at Nutan Maratha College, North Maharashtra University, Jalgaon, MS, India.

Submitted for the project viva-voce examination held on.....

Miss - Kiran Project Supervisor

Prof. Dr. L. P. Deshmukh Principal, Reader and Head, Department of Botany, Nutan Maratha College, Jalgaon



#### DECLARATION

I confirm that the project work titled " Orchids of Manudevi forest, Jalgaon district, Maharashtra " being submitted in partial fulfillment for the M.Sc. (Botany) is the original work carried out by us. It was not the formed the part of any other project work submitted for the degree; either in this or other university.

Prasad Kailas Sonawane

I certify that the declaration made above by the candidate above.

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Prof. Dr. L. P. Deshmukh

Principal and Head, Department of Botany, NUTAN MARATHA COLLEGE, JALGAON

Presed Kallat Sourwane

#### ACKNOWLEDGEMENT

It is an honor and heartfelt pleasure to express sincere gratitude to our project supervisor to Prof. Dr. L. P. Deshmukh, Principal and Head, Department of Botany, Nutan Maratha College, Jalgaon. We are indeed indebted to him for his expert guidance constructive criticism, through discussion and continuous inspiration through out of the course and especially during dissertation. Besides we are thankful to Prof. Mrs. Nafisa Tadavi Madam, Prof. Kiran Patil madam for their help during work.

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Thanking all.

Prasad Kailas Sonawane

Project Report On

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### "SYNTHESIS OF UNDOPED AND MAGNESIUM DOPED ZnO BASED THIN FILM BY SOL GEL METHOD"

#### SUBMITTED TO

Department of Physics, J.D.M.V.P. Samaj's, Shri. S. S. Patil Art's, Shri. Bhausaheb T. T. Salunkhe Commerce and Shri. G. R. Pandit Science College, (Nutan Maratha College), Jalgaon



By

Mr. Vishal Rajendra Patil

For the degree of

### **Master of Science**

### DEPARTMENT OF PHYSICS

2022-2023

#### Dr. K. B. Patil

Project Guide Assistant Professor

J.D.M.V.P. Samaj's, Shri. S. S. Patil Art's, Shri. Bhausaheb T. T. Salunkhe Commerce and Shri. G. R. Pandit Science



This is to certify that the project report entitled

### "SYNTHESIS OF UNDOPED AND MAGNESIUM DOPED ZnO BASED THIN FILM BY SOL GEL METHOD"

Submitted By

### Mr. Vishal Rajendra Patil

Is the original independent work of the student herself, under my supervision during her stay in this University in the 2022-2023 for the partial fulfilment of project report. To the best of my knowledge all the references studied for the preparation in this work have been properly acknowledged.

DATE: 31/57 2023

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DEPT: OF PHY3JC9 JDMVPS's Shri S.S.Patil Arts, Shri Bhausaheb T.T.Salunkha Comm.& Shri. G.R. Pandit Science College, Jalgaon

Kolathe Dr. K. B. Patil

Assistant Professor, Department of Physics,

Examinals

Interation Alaki Decative Aleke Decative (Ext Examiner

#### A Thesis On

Study of Pbs Nanoparticles Synthesized by Chemical Route With Different Concentrations.

#### A THESIS SUBMITTED TO

#### "DEPARTMENT OF PHYSICS"

#### J.D.M.V.P. S Co-Op SAMAJ's SHRLS. S. PATIL ARTS, SHRLBHAUSAHEB T.T. SALUNKHE COMMERCE AND SHRI.G. R. PANDIT SCIENCE COLLAGEJALGAON-425001

(NUTAN MARATHA COLLAGE, JALGAON)



FOR THE DEGREE OF

MASTER OF SCIENCE

IN

#### PHYSICS

Miss Janhvi Mahendra Sonawane (MSc 2nd YEAR)

Seat No. -

377837

Under The Guidance Of

Prof. Dr. K. B. Patil

#### Department Of Physics

J. D. M. V. P. Co-Op. Samaj'sShri, S. S. Patil Arts, Bhausaheb Shri, T. T. Salunkhe Commerceand Shri G. R. Pandit Science College Jalgaon

Academic Year 2022-2023

J. D. M. V. P. Co-Op. Samaj's

Shri. S. S. Patil Arts, Bhausaheb Shri. T. T. Salunkhe Commerce and Shri.G. R. Pandit Science College Jalgaon.



This is certified that " JANHVI MAHENDRA SONAWANE" has completed their project work entitled 'Study of Pbs Nanoparticles Synthesized by Chemical Route With Different Concentrations' the fulfilment of M Sc (Physics) at J. D. M. V. P. Co-Op. Samaj's, Shri S. S. Patil Arts, Bhausaheb Shri T. T. Salunkhe Commerce and Shri G. R. Pandit Science College Jalgaon. During the academic year 2019- 2020, carried out project work under my supervision.

Date:- 31 5 2023

Place:- Jalgaon

DR.K.B.PATIL

Guide

Gut Blocks Examine &

PROF.R.B.DESHMUKH

Head

Department of Physics

A Project Report On

SYNTHESIS AND CHARACTERISATION OF MANGANESE DOPED CdS NANOPARTICLE

### A PROJECT REPORT SUBMITTED TO

### Department of Physics

J.D.M.V.P. S Co-Op SAMAFS SHRLS. S. PATIL ARTS, SHRLBHAUSAHEB T.T. SALUNKHE COMMERCE, SHRLG. R. PANDIT SCIENCE COLLAGEJALGAON-425001

(NUTAN MARATHA COLLAGE, JALGAON)



FOR THE DEGREE OF MASTER OF SCIENCE IN PHYSICS

By Miss, Madhumati Anil Ahirrao (MSc 2nd YEAR)

Seat no - 377833

Under The Guidence Of

Prof. Dr. K. B. PATIL

Department Of Physics J. D. M. V. P. Co-Op, Sanaj's Shri, S. S. Patil Arts, Bhausaheb Shri, T. T. Salunkhe Commerce and Shri,G. R. Pandit Science College Jalgaon.

Academic Year 2022-2023

### J. D. M. V. P. Co-Op. Samaj's

Shri, S. S. Patil Arts, Bhausaheb Shri, T. T. Salunkhe Commerce and Shri,G. R. Pandit Science College Jalgaon.



This is certified that, "Madhumati Anil Ahirrao" has completed their project work entitled Synthesis and characterisation of manganese doped CdS nanoparticle the fulfillment of M.Sc.(Physics) at J. D. M. V. P. Co-Op, Samaj's, Shri, S. S. Patil Arts, Bhausaheb Shri, T. T. Salunkhe Commerce and Shri,G. R. Pandit Science College Jalgaon. During the academic year 2022-2023, carried out project work under my supervision.

Date: - 31/5/2023

Place:- Jalgaon

Dr. K.B.Patil

Guide

Examined 4

Prof. R.B.Deshmukh Head of Department Physics Project Report On

A

Fabrication and characterization of rare-earth (Ce) doped ZnO nanomaterials for use in electronic devices

### SUBMITTED TO

Department of Physics, J.D.M.V.P. Samaj's, Shri. S. S. Patil Art's, Shri. Bhausaheb T. T. Salunkhe Commerce and Shri. G. R. Pandit Science College, (Nutan Maratha College), Jalgaon



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Mr. Nilesh Ramprasad Masule Seas 14: 1-377 834 For the degree of

### Master of Science

DEPARTMENT OF PHYSICS

2022-2023

Dr. K. B. Patil

Project Guide Assistant Professor

J.D.M.V.P. Samaj's, Shri. S. S. Patil Art's, Shri. Bhausaheb T. T. Salunkhe Commerce and Shri. G. R. Pandit Science College, (Nutan Maratha College), Jalgaon



This is to certify that the project report entitled

### Fabrication and characterization of rare-earth (Ce) doped ZnO nanomaterials for use in electronic devices

Submitted By

### Mr. Nilesh Ramprasad Masule

Is the original independent work of the student herself, under my supervision during her stay in this University in the 2022-2023 for the partial fulfilment of project report. To the best of my knowledge all the references studied for the preparation in this work have been properly acknowledged.

DATE: 3 / 57 2023

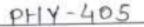
HEAD OF PHYSICC MPS's Shri Bheus .8 Shri.G. ya,Jalgaan

Aler

Dr. K. B. Patil Assistant Professor, Department of Physics,

Received by

End Examiner



### A

### Project Report On

"Design & Fabrication of Low Cost SpinCoater using Arduino"



SUBMITTED BY

Ms. Harshada Vijay Panman

ROLL NO: 04 SEAT No. : 377835

UNDER THE GUIDENCE OF

Dr. K. B. PATIL DEPARTMENT OF PHYSICS, NUTAN MARATHA COLLEGE, JALGAON

### 2022-2023

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Edit with WPS Office



'A' Grade (NAAC Re-accredited) 3<sup>rd</sup> Cycle Department of Physics, Nutan Maratha College, Jalgaon.

### CERTIFICATE

This is to certify that the project report entitled "Design & Fabrication of Low Cost Spin Coater using Arduino" is submitted by Ms. Harshada Vijay Panman, student of Department of Physics, Nutan Maratha College, Jalgaon for the partial fulfilment of M.Sc. degree under the supervision and guidance of faculty of and staff during the year 2022-23.

Date: / /2023

Project guide Dr. K. B. Patil (Assistant Professor) Jul Exam Balu

Foramine 5

(Head of Department) PROF. R. B. Deshmukh Department of Physics, Nutan Maratha Jalgaon

College,

ii Page

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J.D.M.V.P.S.CO.-OP. SAMAJS Shri.S.S.Pandit Art's, Shri.Bhausaheb T.T. Salunkhe Commerce & Shri.G.R.Pandit Science College, Jalgaon- 425001

# CERTIFICATE

This is Certify that project report entitled,

CLAP SWITCH CIRCUIT USING IC555"

Submitted by,

Ms. MAYURI KIRANKUMAR BAGUL

As part of fulfilment of third year

DEGREE IS BACHELOR OF SCIENCE IN ELECTRONICS

Under my guidance during the academic year

2022-2023

H.O.D

PROF. K.B.PATIL SIR

INTERNAL EXAMINER

PROJECT GUIDE

PROF.K.B. PATIL SIR PROF.R.SALUNKHE SIR

EXTERNAL EXAMINER

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Chapter -1 project overview Introduction Basic principle Chapter -2 circuit diagram Working and description Chapter -3 systems component ICSSS Resistors Capacitor Microphone CD4017IC IN4007Dide LED

9V battery

Chapter -4 PCB designed Chapter -5 advantage & Disadvantage Chapter -6 application Chapter -7 Result & Conclusion Chapter -8 future scope & reference



LD.M.V.P.S.CO.-OP. SAMAJ'S

Shri.S.S.Pandit Art's, Shri.Bhausaheb T.T.

Salunkhe Commerce &

Shri.G.R.Pandit Science College, Jalgaon- 425001

### CERTIFICATE

This is Certify that project report entitled,

"RAIN WATER SENSOR USING IC555"

Submitted by.

Ms. PRERANA SUNIL PATH.

As part of fulfilment of third year

DEGREE IS BACHELOR OF SCIENCE IN ELECTRONICS

Under my guidance during the academic year

2022-2023

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Kolatie

PROFECT GUIDE PROF.K.B.PATIL SIR PROF.R.SALUNKHE SIR

· A-2-) EXTERNAL EXAMINER

PROJECT REPORT

A

ON

# **RAIN WATER SENSOR**



Shri S. S Patil arts shri Bhusaheb T. T. Salunkhe Commerce And Shri G. R Pandit Science College Jalgaon.

A Project report on

### Automatic night lamp using ldr

Submitted in partical fulfilment of the requirement for the award of the degree.

### **Bachelor** in science

In electronics By

Name : Anant vikas Badgujar Roll No : 68 Sub : Electronics

### J. D.M. V. P. 'Arts', Commerce And Science College, Jalgaon.

#### CERTIFICATE

Certifief that the project work intittled automatic night lamp using ldr. carried out by Mr. Anant Vikas Badgujar in partial fulfilled for the award of Bachelor of science (Electronics) prescribed by. J . D . M . V . P. Collage Jalgaon during the academic year of 2022-2023. It sugested that all correction or suggestion indicated for assessment have been approved as it satisfied the acadmic requirement in respect of project work prescribe the said degree.

Internal Examinar

**External Examinar** 



J.D.M.V.P.S.CO.-OP. SAMAJ'S Shri.S.S.Pandit Art's, Shri.Bhausaheb T.T. Salunkhe Commerce & Shri.G.R.Pandit Science College, Jaigaon- 425001

### CERTIFICATE

This is Certify that project report entitled, "PULSE MONITORING SYSTEM USING ARDUINO UNO"

Submitted by,

Mr. MAHESH ROHIDAS BIRPAN

As part of fulfilment of third year

DEGREE IS BACHELOR OF SCIENCE IN ELECTRONICS

Under my guidance during the academic year

2022-2023

Bleak H.O.D

Dr. K. B. PATIL

INTERNAL EXAMINER

Statue

PROJECT GUIDE

Dr. K. B. PATIL Dr. R. S. SALUNKE

EXTERNAL EXAMINER

# PULSEMONITORING SYSTEM USING ARDUINO UNO

2022 - 2023

sensor then interfaced to an Arduino UNO control hat permits checking of the eat value

> MAHESH ROHIDAS BIRPAN T. Y. BSc (ELECTRONICS) 2022 - 2023

Sedt No- 340278 NO - 340280 Seat

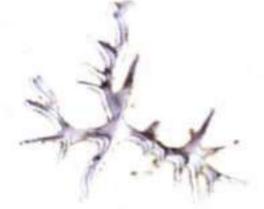
# **College Name - Nutan Maratha College**

Jalgaon

# A PROJECT REPORT ON

## WATER LEVEL INDICATOR USING IC555

2022-2023



Submitted by : Mayur Sanjay Patil

Class :- T.Y.B.Sc. Physics

PRN No. 2019015400338461

### CERTIFICATE

This is certify that the dissertation titled WATER LEVEL INDICATOR USING IC555 MAYUR SANJAY PATIL

Completed successfully the work assigned to her as a part of B.Sc. with Physics in our college

Nutan Maratha College, Jalgaon. This is the bonafite work carryout the candidate under our supervision and guidance and is of sufficiently high standard for the award of the

B.Sc. in the year

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is submitted for Fulfillment of requirement Degree of

#### **BACHELOR OF SCIENCE (PHY)**

By

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This project is authentic work done by her during the academic year 2022-2023 under my Supervision and guidance

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## IS IS TO CERTIFY THAT THE PROJECT ENTITLED • LECKAGE INDICATOR LARAM\* IS SUBMITTED FOR FULFILLMENT OF REQUIREMENT DEGREE OF.

BATCHELOR OF SCIENCE (PHYSICS) BY

## SEJAL SURYAKANT PATIL

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H. O. D

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# Project on ULTRASONIC INTERFEROMETER

# For academic year 2022-2023

# CERTIFICATE

This is to certify that the project entitled

## "ULTRASONIC INTERFEROMETER"

is submitted for fulfillment of requirement degree Bachelor of Science (Physics)

By

## KRUSHNAL BABULAL PATIL & PRAFUL PRADIP BAROLE

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Head of Department R. B. Deshmukh

Project Guide Nitin Baviskar



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This is Certify that project report entitled,

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1

H.O.D

Dr. K. B. PATIL



## ACKNOWLEDEMENT

It gives me immense pleasure in presenting the dissertation of project entitled "RAIN ALARM DETECTOR ".

I express my deep gratitude toward Dr. K. B. Patil sir and Prof. R. B. Deshmukh sir for his effort in giving a splendid guidance, constant encouragement and support without which my project could not be succeeded. With great privilege and pleasure first I would like to express my thanks to Head of department for availing laboratory infrastructure and technical support. I also appreciate the support of all other teachers in the department.

Last but not the least, I would like to express my hanks to my classmates and Lab. Assistants and all lon-Teaching Staff member for their help and poperation in laboratory.

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# Dry soil detector

Design Team = 02

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Year - 2022/23

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- Mr. Jitendra gokul patil

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Submitted by,

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As part of fulfilment of third year

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Submitted by NIKITA DAULAT PATIL

In partial Fulfilment of the Requirement For the Award of Degree of

> BATCHELOR OF SCIENCE IN PHYSICS

For academic year 2022-23

Department of physics J.D.M.V.P. CO-OP Samaj's Arts, science & commerce college, jalgoan

Affiliated to North Maharashtra university, jalgoan

 $z \in 1$ 

What is solar power? Converting the sunlight into electricity by using either Concentrated Solar Power that is indirect or by using photovoltaic (also called solar panels) indirectly is called solar power. In photovoltaid the light is converted into electricity by the use of photoelectric effect

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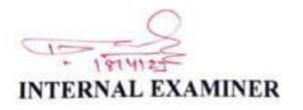
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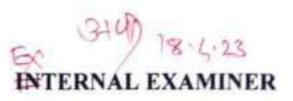
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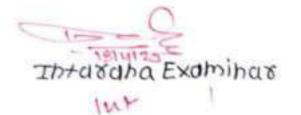
SHRI.S.S.PATIL ARTS, SHRI. BHAUSAHEB T.T.SALUNKHE COMMERCE AND SHRI. G.R.PANDIT SCIENCE, COLLEGE JALGAON

PHYSICS DEPARTMENT SUBJECT - Automatic Street Light

GUIDED BY, KAILASH B PATIL SIR

CREATED BY: MADHURI SITARAM PATIL ROLL NO: 26





K.B. Patin SiR Kelahr Guide

Extagohal

673

<u>Shir S.Spatil Art, Shri.Bhaushaheb T.T</u> <u>Salunkha Commerce and Shri G.R.Pandit</u> <u>ScienceCollege, Jalgaon-425001 (M.S.)</u> (NutanMarathaCollege,Jalgaon)



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**'METAL DETECTOR CIRCUIT USING IC555'** 

Submitted by,

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As part of fulfilment of third year

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Under my guidance during the academic year

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R.B. BESHMUKH

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कवियत्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ नुतन मराठा महाविद्यालय जळगांव मानसशास्त्र विभाग लघुशोध निबंध

माध्यमिक शाळेतील विद्यार्थ्याचा अभ्यास सवयीचा अभ्यास करणे

:- सादरकर्ता -: कु. कारा तेरसिंग बारेला एम.ए.2Y (मानसशास्त्रविभाग) नुतन मराठा महाविद्यालय, जळगांव विभाग प्रमुख प्रा. डॉ. जे.पी. सोनटक्के वर्ष 2022-2023

### प्रमाणपत्र

उत्तर महाराष्ट्र विद्यापीठ अंतर्गत असलेले नूतन मराठा महाविद्यालय जळगाव येथील कारा तेरसिंग बारेला यांनी माध्यमिक शाळेतील विद्यार्थ्यांच्या अभ्यास सवयीचा अभ्यास करणे या विषयावरील लघुशोध निबंध शैक्षणिक वर्ष 2022-2023 वर्षा करिता सादर केला आहे. या शोध निबंधाचे काम माझ्या मार्गदर्शना खाली परिश्रम पूर्वक तयार केले आहे.

मानसशौरत्र विभागप्रमुख प्रा. डॉ. जे.पी. सोनटक्के

न्तन मराठा महाविद्यालय, जळगाव

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### प्रतिज्ञापत्र

माध्यमिक शाळेतील विद्यार्थ्यांच्या अभ्यास सवयीचा अभ्यास करणे. या प्रस्तुत लघुशोध निबंधात यांनी विविध संदर्भीय पुस्तकांचा अभ्यास करून यातील माहितीचे एकत्रीकरण करून व माहिती आपल्या परीने उत्कृष्टपणे मांडण्याचा प्रामाणिकपणे प्रयत्न केला आहे

Khorela

कु. कारा तेरसिंग बारेला एम.ए.2Y (मानसशास्त्रविभाग) नुतन मराठा महाविद्यालय, जळगाव

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अ.क.	विभाग, शीर्षक, उपशीर्षक	पृष्ठ क्रमांक
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Roll No- 167087

# उत्तर महाराष्ट्र विद्यापीठ अंतर्गत नूतन मराठा महाविद्यालय, जळगांव

# पदव्युत्तर मानसशास्त्र विभाग

वर्ष २०२२ - २०२३

# संशोधन अहवाल

विषय - शहरी आणि ग्रामीण भागातील स्त्री-पुरुष यांच्या म्लनसिक आरोग्याचा आध्यास करणे.

सादरकर्ती

कु. सीमा दशरथ चव्हाण एम.ए.2Y (मानसशास्त्रविभाग) नूतन मराठा महाविद्यालय जळगांव

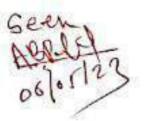
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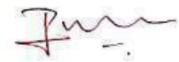
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# प्रमाणपत्र

उत्तर मराठा विद्यापीठअंतर्गत असलेल्या नूतन मराठा महाविध्यालय जळगांव येथील कु. सीमा दशरथ चव्हाण यांनी शहरी भागातील स्त्री-पुरुष आणि ग्रामीण भागातील स्त्री-पुरुष यांच्या मानसिक आरोग्याचा अभ्यास करणे या विषयावरील संशोधन प्रकल्प शैक्षणिक वर्ष २०२२-२०२३ या वर्षाकरीता सादर केला आहे. हा संशोधन प्रकल्प त्यांनी माझ्या मार्गदर्शनाखाली परीश्रमपूर्वक तयार केला आहे.





विभाग प्रमुख प्रा. डॉ. जे.पी.सोनटक्के (मानसशास्त्रविभाग) नूतन मराठा महाविद्यालय जळगांव

# ऋणनिर्देश

विषयाचे नाव : शहरी आणि ग्रामीण भागातील स्त्री-पुरुष यांचा मानसीक आरोग्याचा अभ्यास करणे.

या विषयाच्या प्राध्यपकांनी बहुमोल मागदर्शन मिळाले या साठी मी विभाग प्रमुख प्राध्यापक प्रा. डॉ. जे.पी.सोनटक्के यांचे आभार व्यक्त करते.

Thuhar सादरकर्ती

कु. सीमा दशरथ चव्हाण

एम.ए.2Y (मानसशास्त्रविभाग)

नूतन मराठा महाविद्यालय जळगांव

प्रतिज्ञापत्र

विषयाचे नाव - शहरी आणि ग्रामीण भागातील रुत्री आणि पुरुष यांचा मानसिक आरोग्याचा अभ्यास करणे.

या संशोधन प्रकल्पात मी विविध संदर्भ पुस्तकांचा अभ्यास करून ती माहिती आपल्या परिने उत्कृष्टपणे मांडण्याचा प्रामाणिक प्रयत्न केला आहे.

कु. सौमा दशरथ चय्हाण एम.ए.2Y (मानसशास्त्रविभाग) नूतन मराठा महाविद्यालय जळगांव

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- 1.2 संशोधन पार्श्वभूमी
- 1.3 संशोधनातील प्रमुख संकल्पनाचे विवेचेन
- 1.4 संशोधन अभ्यासाचे महत्व
- 1.5 संशोधन व्याप्ती
- 1.6 संशोधनाची उदिष्टे
- 1.7 संशोधनाची गृहीतेके
- 1.8 संशोधनाची मर्यादा
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- 3.6 संशोधन साहित्य
- 3.7 संशोधनाचे संख्याशास्त्रीय उपयोक्ते

### संख्याशास्त्रीय फलिते निष्कर्ष

### कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ

अंतर्गत जे. डी. एम. व्ही. पी. कला, वाणिज्य व विज्ञान महाविद्यालय जळगाव.

(नूतन मराठा महाविद्यालय जळगाव)



पदव्युत्तर मानसशास्त्र विभाग

वर्ष २०२२-२३

### संशोधन अहवाल

विषय : खाजगी नोकरी आणि सरकारी नोकरी करणाऱ्या स्त्री पुरुषांचे वैवाहिक समायोजनाचा तुलनात्मक आभास करणे.

ः सादरकर्ताः -

विश्वेश राजेश दिवेकर एम.ए. भाग 2 (मानसशास्त्र) नूतन मराठा महाविद्यालय जळगाव

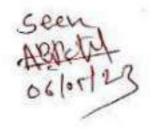
-: मार्गदर्शक :-

प्रा. डॉ. जे. पी. सोनटक्के (मानसश्चात्र विभागप्रमुख) नूतन मराठा महाविद्यालय, जळगाव

#### प्रमाणपत्र

प्रमाणित करण्यात येते कि <u>विश्वेश राजेश दिवेकर</u> यांनी माझ्या मार्गदर्शनाखाली "खाजगी नोकरी आणि सरकारी नोकरी करणान्या स्त्री पुरुषांचे वैवाहिक समायोजनाचा तुलनात्मक आभास करणे." या विषयावर हा शोध प्रबंध <u>कवयित्री बहिणाबाई चौधरी उत्तर</u> महाराष्ट्र विद्यापीठाशी संलग्नित नूतन मराठा महाविद्यालय जळगा<u>व</u>

<u>मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोत्तर मानसशात्र विभाग</u> या पदवी साठी सादर करण्यात येत आहे. त्यांनी हे संशोधन कार्य माझ्या मार्गदर्शनाखाली पूर्ण केले आहे.या करीत हे प्रमामपात्र देण्यात येत आहे.



स्थळ : जळगाव दिनांक : 01/04/2023

मार्गदर्शक

प्रा.डॉ.जे.पी.सोनटक्के मानसशात्र विभागप्रमुख नूतन मराठा महाविद्यालय जळगाव

#### ऋणनिर्देश

"कोणतेही कार्य यशस्वी करण्याकरिता आवश्यकता असते मार्गदर्शनाची कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठाशी संलग्नित नूतन मराठा महाविद्यालय जळगाव

मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोत्तर मानसंशात्र विभाग पदवीशाठी "खाजगी नोकरी आणि सरकारी नोकरी करणाऱ्या स्त्री पुरुषांचे वैवाहिक समायोजनाचा तुलनात्मक आभास " या विषयावर संशोधन कार्य पूर्ण करून शोध प्रबंध सादर करण्यासाठी अनेक थोर व्यक्तीचे मार्गदर्शन व सहकार्य मला लाभले म्हणून या सर्वाचे मनपूर्वक आभार मानून नैव्यक्त करणे हे माझे कर्तव्य समजतो.

या संशोधनाची संधी उपलब्ध करून देणारे व सातत्याने मार्गदर्शन करणारे प्रा. डॉ.जे.पी.सोनटक्के, मानसशाव विभागप्रमुख नूतन मराठा महाविद्यालय जळगाव यांनी वेळोवेळी अमूल्य असे मार्गदर्शन केले व सातत्याने प्रेरणा दिली म्हणून मी हे संशोधन पूर्ण करु शकलो. म्हणून मी सदैव त्यांचा ऋणात राहीन.

सादर संशोधन कार्यासाठी प्रा. समाधान पाटील सर यांचे सहकार्य लाभले त्या बहल त्यांचेही आभार मानतो.

1RDNekur

विश्वेश राजेश दिवेकर (विद्यार्थी) नूतन मराठा महाविद्यालय जळगाव

स्यळ ः जळगाव दिनांक :

# अनुक्रमणिका

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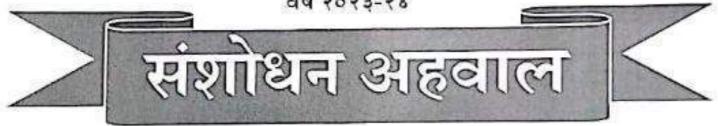
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# कवयित्री बहीणबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगांव अंतर्गंत श्री.एस.एस.पाटील कला, श्री.भाऊसाहेब टी.टी.साळुंखे वाणिज्य आणि श्री.जी.आर.पंडीत विज्ञान महाविद्यालय, जळगांव (तूतन मराठा महाविद्यालय, जळगांव) पदव्युत्तर मानसशास्त्र विभाग वर्ष २०२३-२४



## *विषय* शहरी भागातील मुले-मुली आणि ग्रामीण भागातील मुले-मुली यांच्या मानसीक स्वास्थाचा अभ्यास करणे

सादरकर्ती वैशाली नामदेवराव जाधव एम. ए. भाग-1 (मानसशास्त्र विभाग) नुतन मराठा महाविद्यालय, जळगांव.

-: मार्गदर्शक:-प्रा.जे.पी.सोनटक्कें

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### प्रमाणपत्र

उत्तर महाराष्ट्र विदयापिठअंतर्गत असलेल्या नुतन मराठा महाविदयालय जळगाव येथील कु.वैशाली नामदेवराव जाधव

यांनी शहरी भागातील मुले-मुली आणि ग्रामीण भगातील मुले-मुली यांच्या मानसीक स्वास्थाचा अभ्यास करणे या विषयावरील संशोधन प्रकल्प शैक्षणिक वर्षे 2022-2023 या वर्षाकरोता सादर केला आहे. हा संशोधन प्रकल्प त्यांनी माझ्या मार्गदर्शगखाली परिश्रमपुर्वक तयार केला आहे.

Im-विभाग प्रमुख प्रा. डॉ. जे, पी. सोनटक्के (मानसशाख विभाग) नुतन मराठा महाविदयालय, जळगांव

# ऋणनिर्देश

### "शहरी भागातील मुले-मुली आणि ग्रामीण भागातील मुले-मुली यांच्या मानसीक स्वास्थाचा अभ्यास करणे"

या विषयांच्या सर्वभात मला वेळोवेळी मानसशास विभागाच्या प्राध्यपकांनी बहुमोल मार्गदर्शन मिळाले या साठी मी विभाग प्रमुख प्राध्यापक डॉ. जे. पी. सोनटक्के यांचे आभार व्यक्त करते.

तसेच श्री पाटील सर यांचे महत्त्वाचे मार्गदर्शन लाभले.त्यांनीही मी ऋणी आहे.

सादएकती

वैशाली नामदेवराव जाधव

एम, ए, भाग-। (मानसशास्त विभाग) नुतन मराठा महाविद्यालय, जळगांव.

प्रतिज्ञापत्र

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"शहरी भागातील मुले-मुली आणि प्रामीण भागातील मुले-मुली यांच्या मानसीक स्वास्थाचा अभ्यास करणे"

या संशोधन प्रकल्पात मो विविध संदर्भ पुस्तकाचा अभ्यास करुन ती माहिती आपल्या परीने उत्कृष्टपणे मांडण्याचा प्रामाणिक प्रयत्न केला आहे.

वैशाली नामदेवराव जाधव एम. ए. भाग-। (मानसशास विभाग) नुतन मराठा महाविद्यालय, जळगांव.

# अनुक्रमणिका

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3.5: आराखडा

3.6: संशोधन साहित्य

3.7: संशोधनाचे संख्याशासीय उपयोजन

3.8: सारांश

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## २०११ २० - 5 Sol - ٦٤७०९० कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ अंतर्गत जे .डी .एम. व्ही कला वाणिज्य व विज्ञान महाविद्यालय,

जळगाव

पदव्युत्तर मानसशास्त्र विभाग

वर्ष 2022 - 2023

संशोधन अहवाल

विषय ग्रामीण भागात राहणारी पुरुष व शहरी भागात राहणे पुरुष यांच्यातील वैवाहिक समायोजन अभ्यासणे

:-मार्गदर्शक :-

:- सादरकर्ता :-

प्रा. डॉ . जे.पी. सोनटक्के

लिलाधर दिनकर पाटील

एम ए भ्रग २ (मानसशास्त्र विभाग)

जळगाव

(मानसश्तस्त्र विभाग)

जळगाव

### प्रतिज्ञापत्र

विषयाचे नाव. : ग्रामीण भागात राहणाऱ्या पुरुष व शहरी भागात राहणाऱ्या पुरुष यांच्यातील वैवाहिक समायोजन अभ्यासणे.

या ,संशोधन प्रकल्पात मी विविध संदर्भ पुस्तकांचा अभ्यास करून ती माहिती आपल्या पारिने उत्कृष्टपणे मांडण्याचा प्रामाणिक प्रयत्न केला आहे.

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ढिकाण -: जळगाव

दिनांक -

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मार्गदर्शक

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पा.डा.जे.पी.सोनटकके ( मानसशास्त्र विभाग) नुतन मराठा महाविद्यालय

जळगाव

#### प्रमाणपत्र

उत्तर महाराष्ट्र विद्यापीठांतर्गत असलेल्या नुतन मराठा महायिद्यालय जळणाव, येथील मानसशास्त्र विभाग एम ए भाग २ मधील लिलाधर दिनकर पाटील यांनी ग्रामीण भागात राहणाऱ्या पुरुष व शहरी भागात राहणाऱ्या पुरुष यांच्यातील वैवाहिक समायोजन अभ्यासाणे या विषय वरील संशोधन प्रकल्प शैक्षणिक वर्ष २०२२ -२०२३ करीता सादर केला आहे. हा संशोधन प्रकल्प त्यांनी माझ्या मागदशकाखाली पारित्रम पुर्वक तयार केला आहे.

ढिकाण- जळगाव

दिनांक -

OC/02

-: मार्गदर्शक -:

पा.डा.जे.पी.सोनटके

(मानसशास्त्र विभाग)

नुतन मराठा महाविद्यालय

जळगाव

893).

### ऋणनिदश

विषयाचे नाव -: ग्रामीण भागात सहणाऱ्या पुरुष व शहरी भागात सहणाऱ्या. पुरुष यांच्यातील वैवाहिक समायोजन अभ्यासाणे.

या विषयांचा संदर्भात मला वेळोयेळी मानसशास्त्र विभागाच्या पाधधपंकाचे बहुमोल मार्गदर्शन मिळाले यासाठी मी- यानसशास्त्र विभाग- प्रा.डा.जे.पी.सोनटके मडम याचे आभार व्यक्त करते.

৮ ত শ্বিট :-सादरकर्ता:-लिलाधर दिनकर पाटील एम ए भाग २ (मानसशास्त्र विभाग) नूतन मराठा महाविद्यालय जळगाव

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मामीण भागातील स्त्री व पुरुषांच्या चिंतेचा अभ्यास

कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठाशी संलग्नित

नुतन मराठा महाविद्यालय जळगांव

मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोतर मानसशास्त्र

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किरण महारु पवार

व्दितीय वर्ष एम.ए

मार्गदर्शक

पा. डॉ. जे.पी. सोनटके

मानसशास्त्र विभागप्रमुख

नुतन मराठा महाविद्यालय. जळगाव.

सादर वर्षे

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#### मार्गदर्शकाचे प्रमाणपत्र

प्रमाणित करण्यात येते की, किरण महारु पवार यांनी माइन्या मार्गदर्शनाखाली " यामीण आगातील स्त्री व पुरुषांच्या चिंतेचा अञ्च्यास " या विषयावर हा शोध प्रबंध कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोतर मानसशास्त्र पदवी. या पदवीसाठी सादर करीत आहे. त्यांनी हे संशोधन कार्य माइन्या मार्गदर्शनाखाली पूर्ण केलेले आहे. करिता हे प्रमाणपत्र देण्यात येत आहे.

प्रा.हॉ. जे.पी. सोनटके

मार्गदर्शक

मानसंशास्त्र विमागप्रमुख

नुतन मराठा महाविद्यालय जळगाव

टिकाण: जळगाव

दिनांक:

# प्रतिज्ञापत्र

में प्रतिज्ञापूर्वक निवेदन करतो की कवयिश्र बहिणाबाई चाँघरी उत्तर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोतर मानसशास्त्र पदवी या पदवीसाठी " यामीण भागातील स्नी व पुरुषांच्या चिंतेचा अभ्यास "हा शोध प्रबंध प्रा. डॉ.जे.पी. सोनटके, नुतन मराठा महाविद्यालय जळगाव यांच्या मार्गदर्शनाखाली स्वतःच्या क्षमतेनुसार समाधानकारकरित्या पूर्ण केलेले आहे. तसेच हे संशोधन कार्य यापूर्वी कोणत्याही पदवी अथवा पदच्युतर अभ्यासक्रमाच्या पूर्वतेसाठी किंवा स्पर्धसाठी सादर केलेले नाही.

भी हे कार्य स्वतःच्या क्षमतेनुसार पूर्ण केलेले असून फक्त कलेतील स्नातकोतर मानसशास्त्र पदवीच्या पूर्वतेसाठीच सादर करीत आहे.

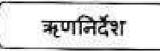
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व्दितीय वर्ष एम.ए

नुतन मराठा महाविद्यालय जळनाव



कोणतेही कार्य यशस्वी करण्याकरिता आवश्यकता असते मार्गदर्शनाची. कवयिश्वे बहिणाबाई चौधरी उतर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोत्तर मानसशास्त्र पदवी या पदवीसाठी " खामीण मार्गातील सी व पुरुषांच्या धिंतेचा अभ्यास " या विषयावर संशोधन कार्य पूर्ण करून शोध प्रबंध सादर करण्यासाठी अनेक थोर व्यक्तींचे मार्गदर्शन व सहकार्य मला लामले म्हणून या सवीचे मन पूर्वक आमार मानून ऋणाव्यक्त करणे हे माझे मौ बसौच्य समजलो.

या संसोधन कार्यासाठी सर्वप्रयम संशोधनाची संधी उपलब्ध करून देणारे व सातत्याने मार्गदर्शन करणारे माड़ो मार्गदर्शक प्रा.डॉ.जं.पी.सॉनटके मानसशास्त्र विभागप्रमुख, नुतन मराठा महाविद्धालय जळगाव यांनी वैळोवेळी अमुल्य असे मार्गदर्शन केले व सातत्याने प्रेरणा दिली म्हणून मी हे संशोधन कार्य पूर्ण करू शकलो. म्हणून मी सदेव त्यांच्या क्र्णाल राहीत.

लग महारु पतार

स्यळ: जळगाव

दिलांक:

विद्रतीय वर्ष एम.ए

नुतन मराठा महाविद्यालय जळगाव

<u>अनुक्रमणिका</u>

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कवयित्री बहिणाबाई यौधरी उत्तर महाराष्ट्र विद्यापीठाशी संलग्नित

नुतन मराठा महाविद्वालय जळगांव

मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोत्तर मानसशास्त्र

विभाग पदवीसाठी सादर करावयाचा

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शोधकर्ता

निलेश राजू राणे

व्दितीय वर्ष एम.ए

मार्गदर्शक

प्रा. डॉ. जे.पी. सोनटके

मानसशास्त्र विभागप्रमुख

नुतन मराठा महाविद्यालय, जळगाव,

सादर वर्षे

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#### मार्गदर्शकाचे प्रमाणपत्र

प्रमाणित करण्यात येते की, निलेश राजू राणे यांनी माङ्या मार्गदर्शनाखाली " शहरी आगातील स्त्री व पुरुषाच्या चिंतेचा अञ्चयस " या विषयावर हा शोध प्रबंध कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाजे अंतर्गत कलेतील स्नातकोतर मानसशास्त्र पदवी. या पदवीसाठी सादर करीत आहे. त्यांनी हे संशोधन कार्य माझ्या मार्गदर्शनाखाती पूर्ण केलेले आहे. करिता हे प्रमाणपत्र देण्यात येत आहे.

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प्रा.डॉ. जे.पी. सोनटके

मार्गदर्शक

मानसशास्त्र विभागप्रमुख

गुतन मराठा महाविदयालय जळगाव

ठिकाणः जळगाव

दिनाक:

प्रतिज्ञापत्र

मी प्रतिजापूर्वक निवेदन करतो की काविजी बहिणाबाई चौंपरी उत्तर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाखे अतर्गत कलेतील रजातकोतर मानसशास्त्र पदवी या पदवीसाठी " शहरी भागातील सी व पुरुषांच्या चितेचा अभ्यास "हा शोध प्रबंध पा. डॉ.जे.पी. सोलटके, नुतन मराठा महाविद्यालय जळगाव यांच्या मार्गदर्शनाखाली स्वतःच्या क्षमतेनुसार समाधानकारकरित्या पूर्ण केलेले आहे. तसेच हे संशोधन कार्य यापूर्वी कोणत्याही पदवी अयवा पदव्युतर अभ्यासक्रमाच्या पूर्वतेसाठी किंवा स्पर्धेसाठी सादर केलेले नाही.

मी हे कार्य स्वतःच्या क्षमतेनुसार पूर्ण केलेले असून फक्त कलेतील स्नातकोतर मानसशास्त्र पदवीच्या पूर्वतेसाठीच सादर करीत आहे.

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स्थळ :- जळगांव

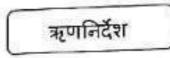
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दितीय वर्ष एम.ए

नुतन मराठा महाविद्यालय जळगाव



कोणतेही कार्य यशस्वी करण्याकरिता आवश्यकला असते मार्गदर्शनाची, कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ जळगाव या विद्यापीठातील मानवता विद्याशाखे अंतर्गत कलेतील स्नातकोतर मानसशास्त्र पदवी या पदवीसाठी " शहरी भागातील सी व पुरुषांच्या चिंतेचा अभ्यास " या विषयावर सशोधन कार्य पूर्ण करून शोध प्रबंध सादर करण्यासाठी अनेक थोर व्यक्तीचे मार्गदर्शन व सहकार्य मला लाभले म्हणून या सर्वाचे मनःपूर्वक आभार मानून ऋणव्यक्त करणे हे माझे मी कर्तव्य समजलो.

या संशोधन कार्यासाठी सर्वप्रयम संशोधनाची संधी उपलब्ध करन देणारे व सातत्याने मार्गदर्शन करणारे माझे मार्गदर्शक प्रा.डॉ.जे.पी.सोनटके, मानसशास्त्र विभागप्रमुख, नुतन मराठा महाविद्यालय जळगाव यांनी वेळोवेळी अमुल्य असे मार्गदर्शन केले व सातत्याने प्रेरणा दिली म्हणून मी हे संशोधन कार्य पूर्ण करु शकलो. म्हणून मी सदैव त्यांच्या ऋणात राहीन.

सदर संशोधन कार्यासाठी प्रा. समाधान पाटील, गुतन मराठा महाविद्यालय जळगाव यांचे सहकार्य लाभले त्याबद्दल संशोधक त्यांचे आधार मानलो.

स्थळ: जळगाव

दिनांक:

N.R. Paul

श्री, जिलेश राज् राणे

व्दितीय वर्ष एम.ए

नृतन मराठा महाविद्यालय जळगाव

# <u>अनुक्रमणिका</u>

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जळगाव

पदव्युत्तर मानसशास्त्र विभाग वर्ष 2022 -2023

संशोधन अहवाल

विषय ग्रामीण भागात राहणारी पुरुष व शहरी भागात राहणे पुरुष यांच्यातील वैवाहिक समायोजन अभ्यासणे

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प्रा. डॉ . जे.पी. सोनटक्के

लिलाधर दिनकर पाटील

(मानसशास्त्र विभाग)

एम ए भाग २ (मानसशास्त्र विभाग)

जळगाव

जळगाव

Name: - Bhagyashree Amil Sapkale class - FYBSC Roll no! - 125 Sub! - Evs ToPic : - Ecosystem.



Name : Bhogusbre Anil Sopkale . Class & Div : \_\_\_\_ Page No : 01 Roll No : 125 Subject : Topic : Date : COSystem. What is an Ecosystem? In ecosystem include all of the living things (plant, animal and organism), in given area interacting with each other, and also with their nonliving environments. (wheather, earth, sun, soil, climate, atmosphere), Ecosystem are the Foundation of the Biosphere determine the health of the entire earth. System . Ecosystem simply means ecological system Ecology is the study of ecosystem. In an ecosystem, each organism has it own role to play: - consider a small puddle at the back of your home, in it may find all sorts of living things, from microorganism to insect and plant. These may depend on non-living things like water, sunlight, turbulence in the puddle. Temperature, atmospheric Pressure and even nutrient in the water for life. This very complex, wonderful interaction of living things and their environment has been the toundation of energy Flows and recycle of carbon and nitrogen. Anytime a stranger'or external factor such

Page No Date Name: Motilal Damadya Pawata class: f.y. B.sc BOLL NO 83 sub: Envisoment peolect seat 318305 Bio semediation nou BRILLIAN

### Interduction

Date / 720

Biosemediation is the use of living organisms primaeily microorganisms, for the degradation of lazardous chemicals in soil sediments water or Other contaminated materials into loss trais forms.

A miceoneganisms metabolize the chemicals to peoduce carebon dioxide as methanerwates and biomass

are less force or innocuous

in some instances the metabolites found more toxic tran the parent commund for example peschbe arthulane and trichloes ethylene may degrade to vinyl chloride.

Page No. Date Name :- Sanket Gajanan Patil Std :- F.Y. Bsc. Roll No: 725. Seat No: - 318887 Subi-Environmental Studies. Topic :- Climate change. limate hange \* colors

Introduction: - Climate change is a paradoxical Subject. While the best scientific information Points to a clea threat to the future of humanity the political and public responses to this challenge have been relatively weak.

Page No. 1

Date

Many businesses accept that climate change is real but are waiting for signals from government before making long-term investments in measures to address the threat. Meanwhile powerful forces, notably the pelluting industries and fossil fuel sector have deep vested interests in maintaining business-as-usual.

In industrialized countries emany people would rather believe that climate change was not real than accept that their lives must change to meet the threat. In nonindustrialized countries many people think that the climate is under divine control and that humans can faced with these divergent views journalists who report on climate change have complex work to do. They must anderstand the Scientific political economic and socied dimensions of a fast moving story, and make it relevant to diverse audiences who may see climate change as unimportant or nonexistent.



Name :- Gopal Vijay Bazi Subject :- Environent Roll no :- 225 Dote :- 11 /4/2023 10 Class :- F.Y.B. Com, Second ye Sem Boughate -.

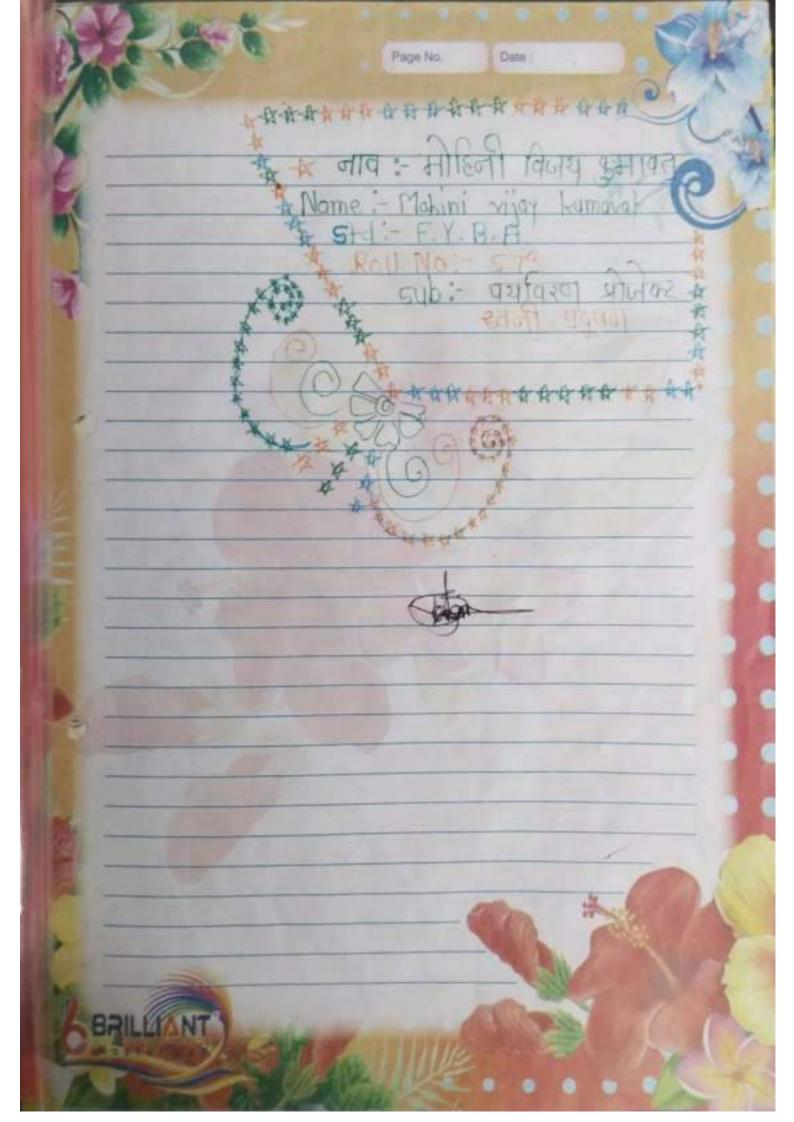
परिसंस्था पृथ्वीवरील विद्याल जीवसंहतीचे लहान राफक परिसंरथा पार (भोवनात्वचे) हा उपसर्घ संस्था या स्मजा शब्दाला जोडून तथार झालेली आहे. परिसंस्थेत सजीव (वनस्पती पाणी आणी सुरुभजीव) आणी त्यांच्या पर्यावरणातील आजेविक घटफ (हवा, पाणी , ख्राजीने , माती) रण्फन राहतात आणि ते रण्फनेफांवर अवलंबून अमातात परिसंक्षेत्रीत जे घटऊ अस्मतात त्यांना एफान्नेत राहण्या -साठी स्पक्षम अर्था प्रस्थिती अस्मेत आणि तत्त्रच्यात स्वयांविफासाची क्षामता अस्मेत. कोणत्याही पार्स्संस्चीत सातीव - सातीव आणि सातीव - पर्यावरण अञा आंतर्शकरा व्यापक क्रम्यात् घडून येत अस्तात न्याभुके परिसंस्योग विस्तार केतद्भुही असू खाकतो . फाही पदिसंस्था नैसार्डि प्रदेशारण्वद्या विशाल तर फाही पदिसंस्था नदी. तके तने असा लडान विस्ताराच्या अस्तात. परिसंस्थीतील अखा। घटकांचे टतक पोन ठाट पडतात: (१) अमीविक (2) Gidos (1) अध्येषेक घटकांन हता. पाणी . भूदा . खडक इ. ओानेक रामाधनिक घटकांचा व्यमावेश होतो. या घटकांच्या प्रजाणात खप्तर्य झाल्यास त्यांचा स्पतीवांच्या गणभंश्येवर ार्वपत्रीत परिणाम होतो. स्पर्धाताच्या प्रत्येक प्रजातीमध्ये अमेकित घटकांचा परिणाम सहन करण्याची राज जयापा असने FOR EDUCATIONAL USE

## NUTAN MARATHA NAME DTVYA SANTOSH PARDESHI ROLL NO :- 284 Poupkak STD:- FY BCOM SUBJECT :- ENVIRONMENT

परिसंश्वर्थान्ये प्रकार परिशंस्था ्रमानवी परिश्रेरग ) नेयकिंक परिसंस्था भूपृत्रीय परिसंखा जल परिसंस्था नवताळ वाळवंचे नदी तजी खोडी याजी 901 परियंखा परियंखा परिसंखा परिसंखा परियंखा परियंखा परिसंख्या

Page No. 7.4 37 £. नाव: कपाली ज्यानेखवर ह्यकर विषय : परिसंक्या र्भ लग F.Y. Beom. 2 रोत्न न: 263 ठावेन : क्रमन मराहा ठॉलेन BRILLIANT

- \* परिशंस्था + पुत्रतिशिव विद्यात्व जीवसंहतीचे , यहान एळळ परिसंस्या ही संज्ञा पार (कीवताक्वे) हा अपसर्व संस्था या द्राखाबा जीवून तथार झाबेबी जारे परिसंस्थेन सजीव आफी त्याच्या पर्यावरुवातीत्व अजेविक ढार्थ्क एक्केन्न राहतान जालि ते एकमेकावर अवत्यंबुन् आसतात. परिसरयोग जो राख्य फामात त्यांना एकत्रित राहत्याराठी राक्षार फार्यी स्थिती जमत आगती लिच्यान अयभाविकासम्वी दामना छासन की तात्याही एरिस्टीन सजीव न्यजीव लगाजी सजीवन पत्रावरुठा आजा आत्राव संजाव संजाव जाता संजाव रात्र आसताम त्यामुळ प्राहिसंस्थीचा विस्तार छेवदारी जन्म डाळता जाही परिस्था जैसाळीक प्रदेशाण्यद्या विद्यात्य लग्न काही परिसंख्या जरी तके, वर्ज अहा विस्तार न्या असतात. परिसंक्योनील अला धारको किछक दोन जार णडतातः () अजेविक () जेविक • अर्जीबिठ : अर्जेविठ धष्कान हता, पार्ला मूदा, खडक उ कीतिठ लाहि रासायांनिड धरकांचा अस्पर्वेश होती. या धरकांच्या प्रमाठास खवल् आत्यांस त्याम्ता अजीवाच्या लग्वासंख्योवर विषयीम परिवास होती. क्षेत्रीयात्वा प्रत्योक BRILLIANT



S.R. Title ख्यती प्रदूषठा विकारी राष्ट्रती साहिली U 2) प्रदुखन म्हान्द्र (2 3) छत्रतो प्रदुषाठा न्हठाले कार्य 4) छत्रती प्रदुषाठाच्चा कारत 5) हतनी प्रदूषनाचर राश्निम ठ हतनी प्रदूषनाचर राश्निम ४ हतनी प्रदूषनाचर राश्निम हा हतना प्रदूषलांचे परिवाम महित हालगड़र किन्छ ए इन्होंगर सास - ८हारमुनी स्ताल) 105 125 ह्वाहवर्सा प्रदेलवामुंड हावाद 13 ह्वाहार हिंदाये हिंदाये SIPPLIE हतनी प्रदूषत प्रतिवंहा आवि TORESEI ाडायक गगठाएंकी गणडूर हिड्ड ASMOLES HOME colors

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Page No प्रस्तावला. माणसाच्या वेगवेगठ्या कृत्यांमुके पृश्वीचं तालमान avia आनि या Climate Change म्हणलेख हवामन बरलामुके मानवी आयव्याला धोके निर्माण होत आहेत. जर या विषयी पावलं उचलजी नाहीत तर मायूस आणि निम्नी या रोन्होंना धोका निर्माण होईल. ग्रेणनक हुच्कार होतील, समुद्राची पातकी वोरेल आणि पक्षी -प्राण्यांच्या उन्नेक प्रसाती नष्ट होतील. वाडत्या मानवी घडामोडीं मुक्रं कार्बन हारा -भोकसाईड (002) उत्सर्तनावं प्रमाण वारल असूत, वरिणामी तायमालातही ताठ झाली आहे. जेका हवामानातील बहल घडतात तेका पृथ्वीच्या रवामान प्रणालीतील बदलांमुके नवीत हवामान प्रधतींचा परिवाम होत असतो. हा काम्रान्सार वाढत शहतो. ही काकाचा कालावधी काही दशकॉपासुत ते कोट्यावधी-वर्षे इसकी लहाम असु शाकतो. शास्त्र हांनी पृथ्वीच्या भौगोलिक इतिहासाइरम्यान हवाम्प्रनातील बढलांचे अतेक भाग ओक्स्रले आहेत BRILLIANT