



Guru Nanak College (Autonomous)

(Affiliated to University of Madras & Re-Accredited At "A" Grade by NAAC)

No. 161, Guru Nanak Salai, Velachery, Chennai - 600042, Tamil Nadu

Website: www.gurunanakcollege.edu.in



1.3.4.1: Number of students undertaking field projects / internships / student projects

Supporting Documents

School of Sciences

Project Certificates

|| 2020-21 ||

	GURU NANAK COLLEGE (AUTONOMOUS) Affiliated to the University of Madras Accredited by NAAC at "A" Grade, ISO Certified (9001 - 2015) Guru Nanak Salai, Velachery, Chennai - 600 042.
CERTIFIED DOCUMENTS	
METRIC NO. : 1.3.4	
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 PRINCIPAL	

A STUDY ON 'Multi-Disciplinary Nature, Scope and Importance of EVS'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

ABISHA P (Reg. no. 1913131075001)

ABISHEK BALAJI A (Reg. no. 1913131075002)

ADHITHIYAN S (Reg. no. 1913131075003)

AMBEDKAR SETHU J (Reg. no. 1913131075004)

DHARSHINI N (Reg. no. 1913131075008)

Under the Guidance of

'Dr. T. Subhramaniyan'

January 2021

DECLARATION

We, ABISHA P (Reg. no. 1913131075001), ABISHEK BALAJI A (Reg. no. 1913131075002), ADHITHIYAN S (Reg. no. 1913131075003), AMBEDKAR SETHU J (Reg. no. 1913131075004), DHARSHINI N (Reg. no. 1913131075008) II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Multi-Disciplinary Nature, Scope and Importance of EVS'". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

ABISHA P (Reg. no. 1913131075001) *P. Abisha*
ABISHEK BALAJI A (Reg. no. 1913131075002) *A. Abishek Balaji*
ADHITHIYAN S (Reg. no. 1913131075003) *S. Adhithyan*
AMBEDKAR SETHU J (Reg. no. 1913131075004) *J. Ambekar*
DHARSHINI N (Reg. no. 1913131075008) *N. Darshini*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Multi-Disciplinary Nature, Scope and Importance of EVS'" is the bonafide work carried out by the team comprising of:

ABISHA P (Reg. no. 1913131075001)

ABISHEK BALAJI A (Reg. no. 1913131075002)

ADHITHIYAN S (Reg. no. 1913131075003)

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II-year B.Sc. Mathematics, Under my guidance and supervision

T. Subhramaniam
25.01.21

Signature of Project Guide

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD, DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

T. Subhramaniam
25.01.21

Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD, DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Natural Resources – Forest, Water'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

DHINESH N (Reg. no. 1913131075009)

EZHILARASI MUNIRAJAN (Reg. no. 1913131075010)

GURUMOORTHY B (Reg. no. 1913131075011)

HARIHAREN R S (Reg. no. 1913131075012)

HARISHNI A (Reg. no. 1913131075013)

Under the Guidance of

'Dr. P. Sankar'

January 2021

DECLARATION

We, DHINESH N (Reg. no. 1913131075009), EZHILARASI MUNIRAJAN (Reg. no. 1913131075010), GURUMOORTHY B (Reg. no. 1913131075011), HARIHAREN R S (Reg. no. 1913131075012), HARISHNI A (Reg. no. 1913131075013), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Natural Resources - Forest, Water'". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

DHINESH N (Reg. no. 1913131075009)

Dhinesh N

EZHILARASI MUNIRAJAN (Reg. no. 1913131075010)

Ezhilarasi

GURUMOORTHY B (Reg. no. 1913131075011)

Gurumoorthy B

HARIHAREN R S (Reg. no. 1913131075012)

R S Hariharan

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BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Natural Resources – Forests and Water' is the bonafide work carried out by the team comprising of:

DHINESH N (Reg. no. 1913131075009)

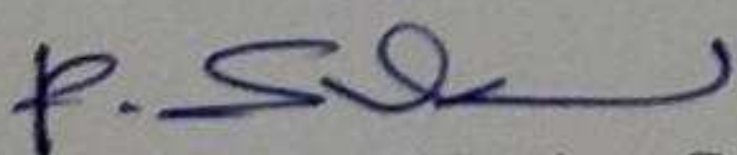
EZHILARASI MUNIRAJAN (Reg. no. 1913131075010)

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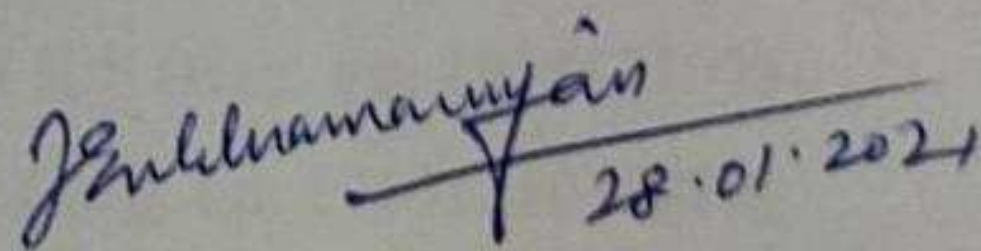
HARIHAREN R S (Reg. no. 1913131075012)

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II-year B.Sc. Mathematics, Under my guidance and supervision



Signature of Project Guide


28.01.2021

Signature of Head of the Department

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CHENNAI - 600 042

A STUDY ON 'Natural Resources – Mineral, Food'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

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JAYASRI T (Reg. no. 1913131075016)

JEEVA V (Reg. no. 1913131075017)

KANAGAPRIYA V (Reg. no. 1913131075018)

Under the Guidance of

'Mr. K. Muthuvel'

January 2021

DECLARATION

We, HEMALATHA S V (Reg. no. 1913131075014), JAYAPAL P (Reg. no. 1913131075015), JAYASRI T (Reg. no. 1913131075016), JEEVA V (Reg. no. 1913131075017), KANAGAPRIYA V (Reg. no. 1913131075018), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Natural Resources – Mineral, Food'. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

S.V. Hemalatha	HEMALATHA S V (Reg. no. 1913131075014)
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V. Kanagapriya...	KANAGAPRIYA V (Reg. no. 1913131075018)

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Natural Resources – Minerals, Food' is the bonafide work carried out by the team comprising of:

HEMALATHA S V (Reg. no. 1913131075014)

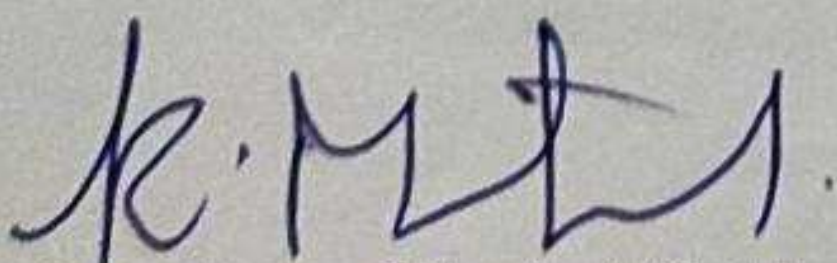
JAYAPAL P (Reg. no. 1913131075015)

JAYASRI T (Reg. no. 1913131075016)

JEEVA V (Reg. no. 1913131075017)

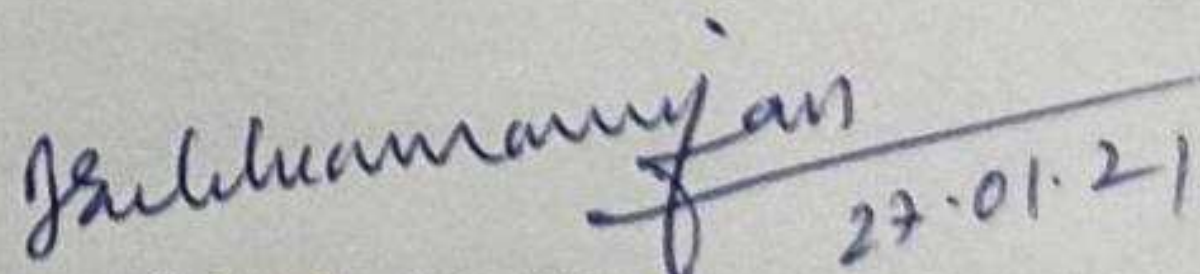
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Signature of Project Guide

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Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Natural Resources – Energy, Land'

PROJECTREPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

KANNAN M (Reg. no. 1913131075019)

LAVANYA M (Reg. no. 1913131075020)

LOGESH V (Reg. no. 1913131075021)

LOKESH D (Reg. no. 1913131075022)

MANIKANDAN K (Reg. no. 1913131075023)

Under the Guidance of

'Dr. P. Nedumaran'

January 2021

DECLARATION

We, KANNAN M (Reg. no. 1913131075019), LAVANYA M (Reg. no. 1913131075020), LOGESH V (Reg. no. 1913131075021), LOKESH D (Reg. no. 1913131075022), MANIKANDAN K (Reg. no. 1913131075023), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Natural Resources – Energy, Land'. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

KANNAN M (Reg. no. 1913131075019) *M.K.*
LAVANYA M (Reg. no. 1913131075020) *Lavanya .M.*
LOGESH V (Reg. no. 1913131075021) *V. Logesh.*
LOKESH D (Reg. no. 1913131075022) *D. Lokesh*
MANIKANDAN K (Reg. no. 1913131075023) *Manikandan K*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Natural Resources – Energy, Land' is the bonafide work carried out by the team comprising of:

KANNAN M (Reg. no. 1913131075019)

LAVANYA M (Reg. no. 1913131075020)

LOGESH V (Reg. no. 1913131075021)

LOKESH D (Reg. no. 1913131075022)

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II-year B.Sc. Mathematics, Under my guidance and supervision

Signature of Project Guide

Dr. P. NEDUMARAN, M.Sc., M.Phil., B.Ed., Ph.D.
ASSISTANT PROFESSOR
DEPARTMENT OF MATHEMATICS
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Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD, DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI-600 042.

A STUDY ON 'Forest and Grassland Ecosystems'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

MOHAN DOSS K (Reg. no. 1913131075024)

MUGILAN A (Reg. no. 1913131075025)

NAGARAJ K (Reg. no. 1913131075026)

NAGARAJAN R (Reg. no. 1913131075027)

NARMATHA R (Reg. no. 1913131075028)

Under the Guidance of

'Ms. J. Vaishnavi'

January 2021

DECLARATION

We, MOHAN DOSS K (Reg. no. 1913131075024), MUGILAN A (Reg. no. 1913131075025), NAGARAJ K (Reg. no. 1913131075026), NAGARAJAN R (Reg. no. 1913131075027), NARMATHA R (Reg. no. 1913131075028), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title **A STUDY ON 'Forest and Grassland Ecosystems'**. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

MOHAN DOSS K (Reg. no. 1913131075024) *K. Mohan Doss*
MUGILAN A (Reg. no. 1913131075025) *A. Mugilan*
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NAGARAJAN R (Reg. no. 1913131075027) *R. Nagarajan*
NARMATHA R (Reg. no. 1913131075028) *R. Narmatha*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled **A STUDY ON 'Forest and Grassland Ecosystems'** is the bonafide work carried out by the team comprising of:

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II-year B.Sc. Mathematics, Under my guidance and supervision

J. Vaibhava

Signature of Project Guide

T. Subhramaniyan
29.01.21

Signature of Head of the Department

T. SUBHRAMANIYAN. M.Sc., M.Phil., M.Ed.,
HEAD DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Ecosystems – Desert, Aquatic'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

NIVETHA K (Reg. no. 1913131075029)

PAVITHRA V (Reg. no. 1913131075030)

PINTU G (Reg. no. 1913131075031)

POOJA V (Reg. no. 1913131075032)

PRABHU B (Reg. no. 1913131075033)

Under the Guidance of

'Dr. P. Sankar'

January 2021

DECLARATION

We, NIVETHA K (Reg. no. 1913131075029), PAVITHRA V (Reg. no. 1913131075030), PINTU G (Reg. no. 1913131075031), POOJA V (Reg. no. 1913131075032), PRABHU B (Reg. no. 1913131075033), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title A STUDY ON "Desert and Aquatic Ecosystems". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

NIVETHA K (Reg. no. 1913131075029) *N. K.*
PAVITHRA V (Reg. no. 1913131075030) *V. Pavithra*
PINTU G (Reg. no. 1913131075031) *Pintu G*
POOJA V (Reg. no. 1913131075032) *Pooja V*
PRABHU B (Reg. no. 1913131075033) *Prabhu B*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled A STUDY ON "Desert and Aquatic Ecosystems" is the bonafide work carried out by the team comprising of:

NIVETHA K (Reg. no. 1913131075029)

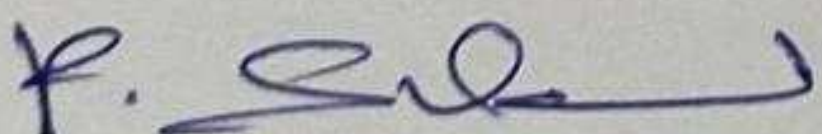
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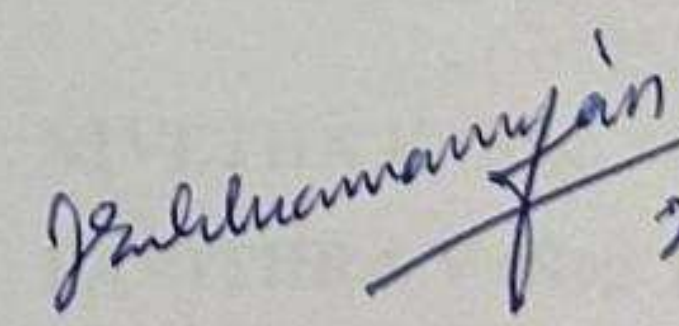
PINTU G (Reg. no. 1913131075031)

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II-year B.Sc. Mathematics, under my guidance and supervision


Signature of Project Guide

 28.01.2021
Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD, DEPT OF MATHEMATICS
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CHENNAI - 600 042

A STUDY ON 'Biodiversity and its conservation'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

PRADEEP KANISHKAR V (Reg. no. 1913131075034)

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PRIYADHARSHINI P L (Reg. no. 1913131075036)

RAHUL YADAV (Reg. no. 1913131075037)

RAJESEKAR E (Reg. no. 1913131075038)

Under the Guidance of

'Mr. K. Muthuvel'

January 2021

DECLARATION

We, PRADEEP KANISHKAR V (Reg. no. 1913131075034), PRAVEEN RAJ P (Reg. no. 1913131075035), PRIYADHARSHINI P L (Reg. no. 1913131075036), RAHUL YADAV (Reg. no. 1913131075037), RAJESEKAR E (Reg. no. 1913131075038), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title A STUDY ON 'Biodiversity and its conservation'. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

PRADEEP KANISHKAR V (Reg. no. 1913131075034) *Pradeep Kanishkar V*
PRAVEEN RAJ P (Reg. no. 1913131075035) *Praveen Raj P*
PRIYADHARSHINI P L (Reg. no. 1913131075036) *Priyadharshini P.L.*
RAHUL YADAV (Reg. no. 1913131075037) *Rahul*
RAJESEKAR E (Reg. no. 1913131075038) *E. Rajal -*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled A STUDY ON 'Biodiversity and its conservation' is the bonafide work carried out by the team comprising of:

PRADEEP KANISHKAR V (Reg. no. 1913131075034)

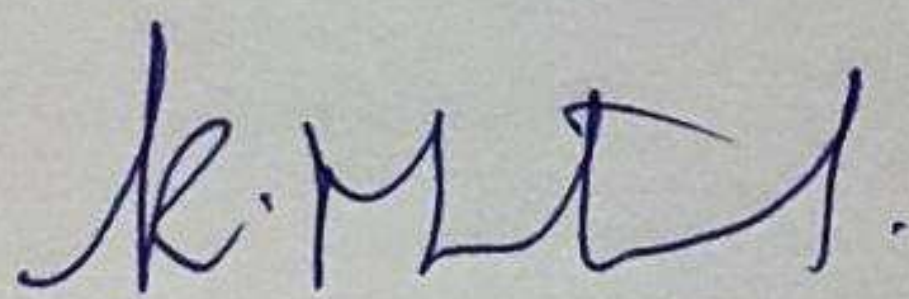
PRAVEEN RAJ P (Reg. no. 1913131075035)

PRIYADHARSHINI P L (Reg. no. 1913131075036)

RAHUL YADAV (Reg. no. 1913131075037)

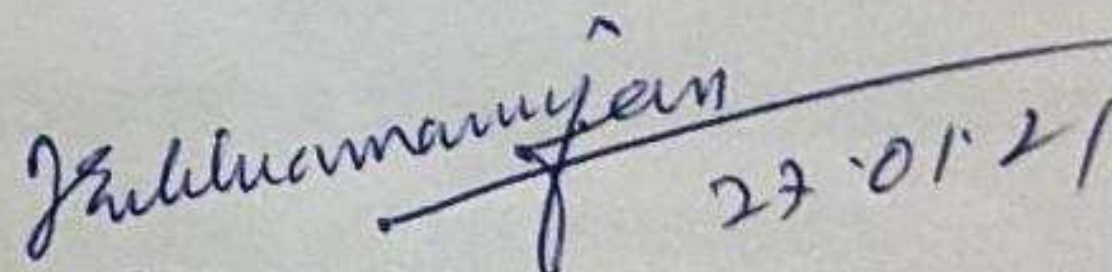
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II-year B.Sc. Mathematics, Under my guidance and supervision.



Signature of Project Guide

K. MUTHUVEL, M.Sc., M.Phil.,
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Velachery, Chennai - 600 042.



Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.
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GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Air Pollution'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

RAJESHKUMAR C (Reg. no. 1913131075039)

RAMKUMAR J (Reg. no. 1913131075040)

RAMYA K (Reg. no. 1913131075041)

RANJITH K (Reg. no. 1913131075042)

RESIFEN B (Reg. no. 1913131075043)

Under the Guidance of

'Dr. P. Nedumaran'

January 2021

DECLARATION

We, RAJESHKUMAR C (Reg. no. 1913131075039), RAMKUMAR J (Reg. no. 1913131075040), RAMYA K (Reg. no. 1913131075041), RANJITH K (Reg. no. 1913131075042), RESIFEN B (Reg. no. 1913131075043), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON Air Pollution". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

RAJESHKUMAR C (Reg. no. 1913131075039) *Rajesh Kumar C*
RAMKUMAR J (Reg. no. 1913131075040) *Ram Kumar J*
RAMYA K (Reg. no. 1913131075041) *K. Ramya*
RANJITH K (Reg. no. 1913131075042) *K. Ranjith*
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BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON Air Pollution" is the bonafide work carried out by the team comprising of:

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RANJITH K (Reg. no. 1913131075042)

RESIFEN B (Reg. no. 1913131075043)

II-year B.Sc. Mathematics, Under my guidance and supervision

Signature of Project Guide

Dr. P. NEDUMARAN, M.Sc., M.Phil., B.Ed., Ph.D.
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Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
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GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Marine and Water Pollution'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

RIYAZ AHAMED N (Reg. no. 1913131075044)

ROHIT KUMAR S (Reg. no. 1913131075045)

ROHITH KRISHNA S (Reg. no. 1913131075046)

ROOPESH RAO V (Reg. no. 1913131075047)

SADAGOPAN V (Reg. no. 1913131075048)

Under the Guidance of

'Ms. J. Vaishnavi'

January 2021

DECLARATION

We, RIYAZ AHAMED N (Reg. no. 1913131075044), ROHIT KUMAR S (Reg. no. 1913131075045), ROHITH KRISHNA S (Reg. no. 1913131075046), ROOPESH RAO V (Reg. no. 1913131075047), SADAGOPAN V (Reg. no. 1913131075048), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title **A STUDY ON 'Marine and Water Pollution'**. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

RIYAZ AHAMED N (Reg. no. 1913131075044)

ROHIT KUMAR S (Reg. no. 1913131075045)

ROHITH KRISHNA S (Reg. no. 1913131075046)

ROOPESH RAO V (Reg. no. 1913131075047)

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Riyaz Ahmed N

Rohit Kumar S

Rohith Krishna S

Roopesh Rao V

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BONAFIDE CERTIFICATE

This is to certify that the project report entitled **A STUDY ON 'Marine and Water Pollution'** is the bonafide work carried out by the team comprising of:

RIYAZ AHAMED N (Reg. no. 1913131075044)

ROHIT KUMAR S (Reg. no. 1913131075045)

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II-year B.Sc. Mathematics, Under my guidance and supervision

J. Vaibhava

Signature of Project Guide

T. Subhramaniyan

Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
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CHENNAI - 600 042

A STUDY ON 'Soil Pollution'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

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SARAVANAN B (Reg. no. 1913131075052)

SATHISH KUMAR R (Reg. no. 1913131075053)

Under the Guidance of

'Dr.P. Sankar'

January 2021

DECLARATION

We, SANDHIYA G (Reg. no. 1913131075049), SANTHOSH M (Reg. no. 1913131075050), SANTHOSH S (Reg. no. 1913131075051), SARAVANAN B (Reg. no. 1913131075052), SATHISH KUMAR R (Reg. no. 1913131075053), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Soil Pollution'". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

SANDHIYA G (Reg. no. 1913131075049) *G. Sandhya*
SANTHOSH M (Reg. no. 1913131075050) *M. Santhosh*
SANTHOSH S (Reg. no. 1913131075051) *S. Santhosh*
SARAVANAN B (Reg. no. 1913131075052) *B. Saravanan*
SATHISH KUMAR R (Reg. no. 1913131075053) *R. Sathish Kumar*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Soil Pollution' is the bonafide work carried out by the team comprising of:

SANDHIYA G (Reg. no. 1913131075049)
SANTHOSH M (Reg. no. 1913131075050)
SANTHOSH S (Reg. no. 1913131075051)
SARAVANAN B (Reg. no. 1913131075052)
SATHISH KUMAR R (Reg. no. 1913131075053)

II-year B.Sc. Mathematics, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

T. SUBHRAMANIYAN. M.Sc., M.Phil., M.Ed.,
HEAD DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Noise Pollution'

PROJECTREPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

SATHYANARAYANA M (Reg. no. 1913131075054)

SATHYAPRIYAA (Reg. no. 1913131075055)

SHINY R (Reg. no. 1913131075056)

SIDDARTH GANESH (Reg. no. 1913131075057)

SONIYA S (Reg. no. 1913131075058)

Under the Guidance of

'Mr. K. Muthuvel'

January 2021

DECLARATION

We, SATHYANARAYANA M (Reg. no. 1913131075054), SATHYAPRIYA A (Reg. no. 1913131075055), SHINY R (Reg. no. 1913131075056), SIDDARTH GANESH (Reg. no. 1913131075057), SONIYA S (Reg. no. 1913131075058), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Noise Pollution'". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

SATHYANARAYANA M (Reg. no. 1913131075054) *M. Sathyanarayana*
SATHYAPRIYA A (Reg. no. 1913131075055) *A. Sathyapriya*
SHINY R (Reg. no. 1913131075056) *R Shiny*
SIDDARTH GANESH (Reg. no. 1913131075057) *Siddarth Ganesh*
SONIYA S (Reg. no. 1913131075058) *S Soniya*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Noise Pollution'" is the bonafide work carried out by the team comprising of:

SATHYANARAYANA M (Reg. no. 1913131075054)

SATHYAPRIYA A (Reg. no. 1913131075055)

SHINY R (Reg. no. 1913131075056)

SIDDARTH GANESH (Reg. no. 1913131075057)

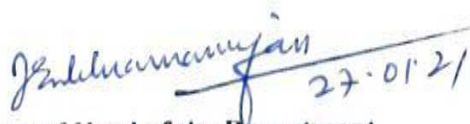
SONIYA S (Reg. no. 1913131075058)

II-year B.Sc. Mathematics, under my guidance and supervision



Signature of Project Guide

K. MUTHUVEL, M.Sc., M.Phil.,
Assistant Professor
Department of Mathematics
Guru Nanak College (Autonomous)
Velachery, Chennai - 600 042.

 27.01.21

Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD DEPT. OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Thermal Pollution'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

SUBITHA T (Reg. no. 1913131075059)

SURIYA PRAKASH J (Reg. no. 1913131075060)

SURYA N (Reg. no. 1913131075061)

SWETHA M (Reg. no. 1913131075062)

THARUN D (Reg. no. 1913131075063)

Under the Guidance of

'Dr. P. Nedumaran'

January 2021

DECLARATION

We, SUBITHA T (Reg. no. 1913131075059), SURIYA PRAKASH J (Reg. no. 1913131075060), SURYA N (Reg. no. 1913131075061), SWETHA M (Reg. no. 1913131075062), THARUN D (Reg. no. 1913131075063), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title "A STUDY ON 'Thermal Pollution'". We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

SUBITHA T (Reg. no. 1913131075059) *T. Subitha*

SURIYA PRAKASH J (Reg. no. 1913131075060) *J. Suriya Prakash*

SURYA N (Reg. no. 1913131075061) *N. Surya*

SWETHA M (Reg. no. 1913131075062) *Swetha M*

THARUN D (Reg. no. 1913131075063) *D. Tharun*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled "A STUDY ON 'Environmental Pollution - Thermal' is the bonafide work carried out by the team comprising of:

SUBITHA T (Reg. no. 1913131075059)

SURIYA PRAKASH J (Reg. no. 1913131075060)

SURYA N (Reg. no. 1913131075061)

SWETHA M (Reg. no. 1913131075062)

THARUN D (Reg. no. 1913131075063)

II-year B.Sc. Mathematics, Under my guidance and supervision

Signature of Project Guide

Dr. P. NEDUMARAN, M.Sc., M.Phil., B.Ed., Ph.D.
ASSISTANT PROFESSOR
DEPARTMENT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI-600 042.

Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

A STUDY ON 'Nuclear Pollution'

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



B.Sc. Mathematics

Submitted by

VENKATESH B (Reg. no. 1913131075064)

VIGNESH R D (Reg. no. 1913131075065)

VIGNESH S (Reg. no. 1913131075066)

VIJAYARAJ S (Reg. no. 1913131075067)

VISHAAL S J (Reg. no. 1913131075068)

YUVANESH E (Reg. no. 1913131075069)

Under the Guidance of

'Ms. J. Valshnavi'

January 2021

DECLARATION

We, VENKATESH B (Reg. no. 1913131075064), VIGNESH R D (Reg. no. 1913131075065), VIGNESH S (Reg. no. 1913131075066), VIJAYARAJ S (Reg. no. 1913131075067), VISHAAL S J (Reg. no. 1913131075068), YUVANESH E (Reg. no. 1913131075069), II-year B.Sc. Mathematics, students of Guru Nanak College (Autonomous), have done a project report on the title A STUDY ON 'Nuclear Pollution'. We declare that this is our original work.

PLACE: CHENNAI

DATE: 25-01-2021

Submitted by

VENKATESH B (Reg. no. 1913131075064) *P. Venkatesh*
VIGNESH R D (Reg. no. 1913131075065) *R.D. Vignesh*
VIGNESH S (Reg. no. 1913131075066) *S. Vignesh*
VIJAYARAJ S (Reg. no. 1913131075067) *S. Vignesh*
VISHAAL S J (Reg. no. 1913131075068) *Vishal*
YUVANESH E (Reg. no. 1913131075069) *Yuvanes*

BONAFIDE CERTIFICATE

This is to certify that the project report entitled A STUDY ON 'Nuclear Pollution' is the bonafide work carried out by the team comprising of:

VENKATESH B (Reg. no. 1913131075064)

VIGNESH R D (Reg. no. 1913131075065)

VIGNESH S (Reg. no. 1913131075066)

VIJAYARAJ S (Reg. no. 1913131075067)

VISHAAL S J (Reg. no. 1913131075068)

YUVANESH E (Reg. no. 1913131075069)

II-year B.Sc. Mathematics, under my guidance and supervision

J. Vairamand

Signature of Project Guide

T. Subhramaniyan

Signature of Head of the Department

T. SUBHRAMANIYAN, M.Sc., M.Phil., M.Ed.,
HEAD, DEPT OF MATHEMATICS
GURU NANAK COLLEGE (AUTONOMOUS)
CHENNAI - 600 042

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

III year STUDENTS

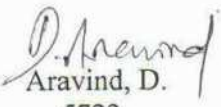


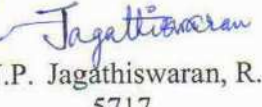
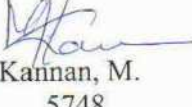

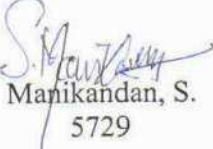
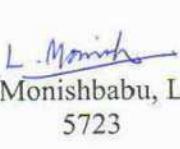
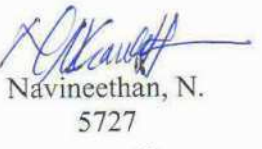


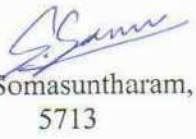
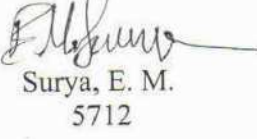
UNDER THE GUIDANCE OF

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Aravind, D. (5722), Haresh, S. (5725), Hariharan, U.P. (5743), Jagathiswaran, R. (5717), Kannan, M. (5748), Madhavan, C. (5704), Manikandan, S. (5729), Monishbabu, L. (5723), Navineethan, N. (5727), Nehruji, V. (5753), Pugazhenthhi, G. (5721), Somasuntharam, S. (5713), Surya, E. M. (5712), III year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **“EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI”**. I declare that this is my original work.

 Aravind, D. 5722	 Haresh, S. 5725	 Hariharan, U.P. 5743	 Jagathiswaran, R. 5717	 Kannan, M. 5748
 Madhavan, C. 5704	 Manikandan, S. 5729	 Monishbabu, L. 5723	 Navineethan, N. 5727	
 Nehruji, V. 5753	 Pugazhenthhi, G. 5721	 Somasuntharam, S. 5713	 Surya, E. M. 5712	

PLACE: *Chennai*

DATE: *28/10/2021*

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the II year students - Aravind, D. (5712), Hareesh, S. (5725), Hariharan, U.P. (5743), Jagathiswaran, R. (5717), Kannan, M. (5748), Madhavan, C. (5704), Manikandan, S. (5729), Monishbabu, L. (5723), Navneethan, N. (5727), Nehruji, V. (553), Pugachenchi G. (5721), Somasuntharam, S. (5713), Surya, E.M. (5712) during the year 2021, under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

Dr. M. GOPI, MSc, MPhil, Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 147, Guru Nanak Salai,
Velachery, Chennai - 600 042

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

III year STUDENTS



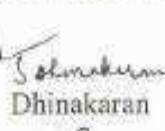
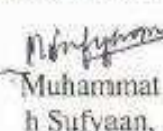
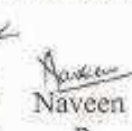
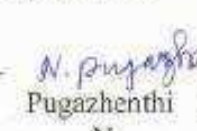

UNDER THE GUIDANCE OF

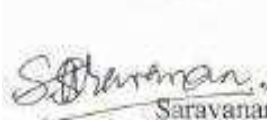



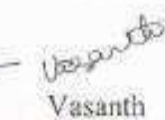

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Babu, K. (5701), Balamurugan, A. (5746), Dhinakaran, S. (5706), Muhammath Sufyaan, S. (5702), Naveen, R. (5708), Pugazhenth, N. (5739), Rajesh, A. (5747), Saravanan, V. (5716), Sriram, B. (5742), Sriranjith, S. (5741), Vasanth, J. (5733), Vasanth Narayanan, E. (5719), Yogeshwaran, S. (5745), III year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **"EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI"**, I declare that this is my original work.

						
Babu, K.	Balamurugan, A.	Dhinakaran, S.	Muhammath Sufyaan, S.	Naveen, R.	Pugazhenth, N.	Rajesh, A.
5701	5746	5706	5702	5708	5739	5747

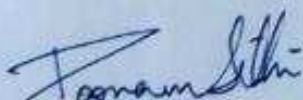
					
Saravanan, V.	Sriram, B.	Sriranjith, S.	Vasanth, J.	Vasanth Narayanan, E.	Yogeshwaran, S.
5716	5742	5741	5733	5719	5745

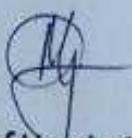
PLACE: Chennai

DATE: 25/10/2021

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the III year students – Babu, K. (5701), Balamurugan, A. (5746), Dhinakaran, S. (5706), Muhammath Sufyaan, S. (5702), Naveen, R. (5708), Pugazhenth, N. (5739), Rajesh, A. (5747), Saravanan, V. (5716), Sriram, B. (5742), Sriranjith, S (5741), Vasanth, J. (5733), Vasanth Narayanan, E. (5719), Yogeshwaran, S. (5745) during the year 2021, under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

Dr. M. GOPI, MSc., M.Phil., Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guru Nanak Salai,
Velachery, Chennai - 600 042.

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

III year STUDENTS

UNDER THE GUIDANCE OF

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Aarthishwari, B. (5736), Abitha, R. (5715), Anagha S Nair (5711), Ashwini, V. (5752), Chandhana Sri, M. (5751), Deepika, M. (5703), Deepika, M. (5734), Divya Sundari, S. (5726), Gayathri, M. (5705), Kavya, R. (5714), Keerthana, S. (5707), III year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title "EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI". I declare that this is my original work.

 Aarthishwari, B. 5736	 Abitha, R. 5715	 Anagha S Nair 5711	 Ashwini, V. 5752	 Chandhana Sri, M. 5751	 Keerthana S. 5707
 Deepika, M. 5703	 Deepika, M. 5734	 Divya Sundari, S. 5726	 Gayathri, M. 5705	 Kavya, R. 5714	

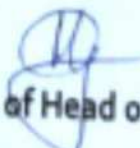
PLACE: Chennai
DATE: 25/10/2021

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the III year students - Aarthishwari, B (5736), Abitha, R (5715), Anagha S Nair (5711), Ashwini, V (5752), Chandhana Sri, M. (5751), Deepika, M. (5703), Deepika, M. (5734), Divya Sundari, S. (5726), Gayathri, M (5705), Kavya, R . (5714), Keerthana, S. (5707) during the year 2021, under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

Dr. M. GOPI, MSc, M Phil, Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 101, Guru Nanak Salai,
Velachery, Chennai - 600 042

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

III year STUDENTS

UNDER THE GUIDANCE OF


**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Keren Nancy, D. (5710), Kokila, S. (5728), Kumutha, M. (5735), Lakshmi, V. (5718), Nirosha, S. (5744), Ponni, M. (5738), Priyadarshini, P. (5740), Rajalakshmi, E. (5730), Sasikala, R. (5732), Venda, V. (5749), Vishali, D. (5750), III year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **"EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI"**. I declare that this is my original work.



Keren
Nancy, D.
5710


Kokila, S.
5728



Kumutha, M.
5735


Lakshmi,
V.
5718


Nirosha,
S.
5744


Ponni, M.
5738


Priyadarshini,
P.
5740


Rajalakshmi, E.
5730


Sasikala, R.
5732


Venda, V.
5749


Vishali, D.
5750

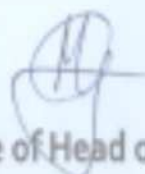
PLACE: Chennai

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the III year students - Keren Nancy, D. (5710), Kokila, S. (5728), Kumutha, M. (5735), Lakshmi, V. (5718), Nirosha, S. (5744), Ponni, M. (5738), Priyadarshini, P. (5740), Rajalakshmi, E. (5730), Sasikala, R. (5732), Venda, V. (5749), Vishali, D. (5750) during the year 2021, under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

Dr. M. GOPI, M.Sc., M.Phil., Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guru Nanak Salai,
Velachery, Chennai - 600 042.

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

II year STUDENTS

UNDER THE GUIDANCE OF

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Arunraj, V. (1713), Deepa Raaj, P (1738), Harish, B. (1735), Kishore Kumar, R. (1720), Krishnakanth, S. (1710), Perazhagan, S. (1721), Sajin Devesh, A. (1747), Santhosh, B.V. (1718) and Yugesh, S. (1733) II year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title “EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI”. I declare that this is my original work.



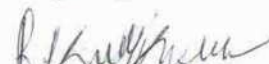
Arunraj, V.
(1713)



Deepa Raaj, P.
(1738)



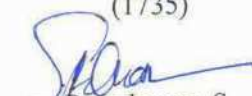
Harish, B.
(1735)



Kishore Kumar, R.
(1720)



Krishnakanth, S.
(1710)



Perazhagan, S.
(1721)



Sajin Devesh, A.
(1747)



Santhosh, B.V.
(1718)

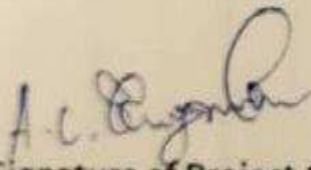


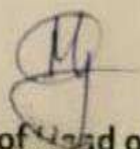
Yugesh, S.
(1733)

PLACE: Chennai

BONAFIDE CERTIFICATE

This is to certify that project Report titled "**Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai**" is the bonafide work carried out by the II year students - Arunraj, V. (1713), Deepa Raaj, P (1738), Harish, B. (1735), Kishore Kumar, R. (1720), Krishnakanth, S. (1710), Perazhagan, S. (1721), Sajin Devesh, A. (1747), Santhosh, B.V (1718), Yugesh, S. (1733) during the year 2021, under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

Dr. M. GOPI, M.Sc, M.Phil, Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guru Nanak Salai,
Velachery, Chennai - 600 042.

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

II year STUDENTS







UNDER THE GUIDANCE OF


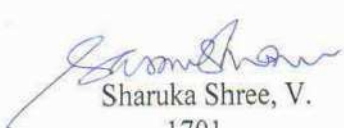
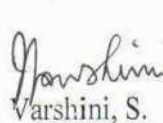

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Aarthi, A. (1705), Ashtha Rani Pandey (1742), Dharshini (1751), Diana, M.G. (1723), Gayathri, K. (1731), Nandhini, R. (1714), Revathy, S. (1708), Sharuka Shree, V. (1701), Varshini, S. (1715) and Vinosha, K. (1706), II year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **“EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI”**. I declare that this is my original work.

     
Aarthi, A. Ashtha Rani Pandey Dharshini Diana, M.G. Gayathri, K. Nandhini, R.
1705 1742 1751 1723 1731 1714

   
Revathy, S. Sharuka Shree, V. Varshini, S. Vinosha, K.
1708 1701 1715 1706

PLACE: Chennai

DATE: 25/09/2021

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the II year students - Aarthi, A. (1705), Ashtha Rani Pandey. (1742), Dharshini (1751), Diana, M.G. (1723), Gayathri, K. (1731), Nandhini, R. (1714), Revathy, S. (1708), Sharuka Shree, V. (1701), Varshini, S. (1715), Vinosha, K. (1706) during the year 2021, under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

Dr. M. GOPI, MSc, M.Phil, Ph.D.
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 181, Guru Nanak Salai,
Velachery, Chennai - 600 042

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

II year STUDENTS



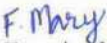





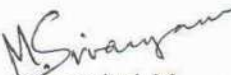
UNDER THE GUIDANCE OF

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Aleena jojo (1749), Deepika, M (1717), Francina Mary, Y. (1724), Hemavathi (1744), Meenaloshani, M. (1746), Nandhini, E. (1716), Poomathi, V. (1702), Ranjitha, S. (1712), Sivaranjani, M. (1725), Thanusri, S. (1707), II year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **“EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI”**. I declare that this is my original work.

 Aleena jojo 1749	 Deepika, M 1717	 Francina Mary, Y. 1724	 Hemavathi 1744	 Meenaloshani, M. 1746
 Nandhini, E. 1716	 Poomathi, V. 1702	 Ranjitha, S. 1712	 Sivaranjani, M. 1725	

PLACE: Chennai

DATE: 28/10/2024

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the II year students - Alaina jojo (1743), Deepika, M. (1717), Francina Mary, Y. (1724), Hemavathi (1744), Meenaloshani, M. (1746), Nandhini, E. (1716), Poomathi, V. (1702), Ranjitha, S. (1712), Sivaranjani, M. (1725), Thanusri, S. (1707) during the year 2021, under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

Dr. M. GURU, MSc, M.Phil, Ph.D.
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guri Nanak Salai,
Velachery, Chennai - 600 042

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

II year STUDENTS

UNDER THE GUIDANCE OF

**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**


2021

DECLARATION


We, Balaji, S. (1732), Dinesh, P. (1737), Hari Prasath, G. (1703), Pugazh, P. (1736), Sudanthiran, P. (1750), Suganeshwaran, A.(1722), Sundar, S. (1745), Surya, M. (1730), Thalir, S.N. (1728), Vijay, S. (1748), II year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title **"EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI"**. I declare that this is my original work.


Balaji, S.
1732


Dinesh, P.
1737


Hari Prasath, G.
1703


Pugazh, P.
1736


Sudanthiran, P.
1750


Suganeshwaran, A.
1722


Sundar, S.
1745


Surya, M.
1730


Thalir, S.N.
1728


Vijay, S.
1748

PLACE: 

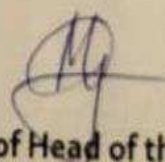
DATE: 28/10/2021

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the II year students - Balaji, S.(1732), Dinesh, P. (1737), Hari Prasath, G. (1703), Pugazh, P. (1736), Sudanthiran, P. (1750), Suganeshwaran, A. (1722), Sundar, S. (1745), Surya, M. (1730), Thalir, S.N. (1728), Vijay, S. (1748) during the year 2021, under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

Dr. M. GOPI, M.Sc., M.Phil., Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guru Nanak Salai,
Velachery, Chennai - 600 042.

EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



Submitted by

DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

II year STUDENTS

UNDER THE GUIDANCE OF


**DR. M. GOPI, DR. POONAM SETHI, DR. E. GAYATHIRI,
DR. A.C. TANGAVELOU, DR. S. NIRMALRAJ**

2021

DECLARATION

We, Arish K (1739), Arun Kumar, D. (1709), Chandru, S (1740), Divagar, M. (1734), Jeeva, V. (1741), Karthick, R. (1719), Poovarasan, K. (1726), Sathish kumar, G. (1727), Vignesh, V. (1729), II year B.Sc., programme, Department of Plant Biology and Plant Biotechnology Student of Guru Nanak College (Autonomous), have done a project report on the title "EXHIBITING NAME BOARD FOR TREES IN GURU NANAK COLLEGE CAMPUS, CHENNAI". I declare that this is my original work.


Arish K
1739


Arun Kumar, D.
1709


Chandru, S
1740


Divagar, M.
1734


Jeeva, V.
1741


Karthick, R.
1719


Poovarasan, K.
1726


Sathish kumar, G.
1727


Vignesh, V.
1729

PLACE: Chennai

DATE: 20/01/2021

BONAFIDE CERTIFICATE

This is to certify that project Report titled "Exhibiting Name Board for Trees in Guru Nanak College Campus, Chennai" is the bonafide work carried out by the II year students - Arish, K. (1739), Arun Kumar, D. (1709), Chandru, S. (1740), Divagar, M. (1734), Jeeva, V. (1741), Karthick, R. (1719), Poovarasan, K. (1726), Sathish kumar, G. (1727), Vignesh, V. (1729) during the year 2021, under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

Dr. M. GOPI, MSc, MPhil, Ph.D.,
Assistant Professor & Head
Department of Plant Biology & Plant Biotechnology
GURU NANAK COLLEGE (Autonomous)
No. 161, Guru Nanak Sala,
Velachery, Chennai - 600 842

EXTRACTION OF BIODIESEL FROM CASTOR OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

AISHWARYA. K
Reg. No. 2013131050001

Under the Guidance of

Dr. S. BHUVANESWARI

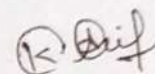
March, 2021

DECLARATION

I, AISHWARYA. K - (Reg. no. 2013131050001) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "EXTRACTION OF BIODIESEL FROM CASTOR OIL". I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



AISHWARYA. K

(Reg. No. 2013131050001)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM CASTOR OIL" is the bonafide work carried out by AISHWARYA. K - (Reg. no. 2013131050001), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM COCONUT OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

AKSHAYA. K

Reg. No. 2013131050002

Under the Guidance of

Dr. S. BHUVANESWARI

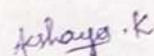
March, 2021

DECLARATION

I, AKSHAYA. K - (Reg. No. 2013131050002) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "EXTRACTION OF BIODIESEL FROM COCONUT OIL". I declare that this is my original work.

PLACE: Chennai

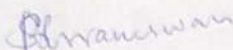
DATE: 19.03.2021


AKSHAYA. K

(Reg. No. 2013131050002)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM COCONUT OIL" is the bonafide work carried out by AKSHAYA. K - (Reg. No. 2013131050002), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH BIGEYE SCAD - *SELAR CRUMENOPHTHALMUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

ANBARASAN. A
Reg. No. 2013131050003

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, ANBARASAN. A – (Reg. No. 2013131050003) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BIGEYE SCAD - *SELAR CRUMENOPHTHALMUS***”. I declare that this is my original work.



PLACE: CHENNAI

ANBARASAN. A

DATE: 19.03.2021

(Reg. No. 2013131050003)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BIGEYE SCAD - *SELAR CRUMENOPHTHALMUS***” is the bonafide work carried out by **ANBARASAN. A- (Reg. No. 2013131050003)**, of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

Identification of Freshwater Plankton *Ceratium* and *Anabena* Sps. Using
Light microscope

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

G. ARTHI
Reg. No. 2013131050004

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, G. Arthi – (Reg. no. 2013131050004) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “Identification of Freshwater Plankton *Ceratium* and *Anabena* Sps. Using Light microscope. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

Arthi. G

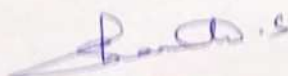
G. Arthi

(Reg. no. 2013131050004)

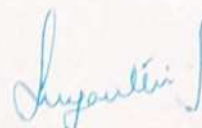
A

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**Identification of freshwater plankton *Ceratium* and *Anabena* Sps. Using Light microscope**" is the bonafide work carried out by **G. Arthi** - (Reg. no. 2013131050004), of **IL B.Sc. Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH OBTUSE BARRACUDA – *SPHYRAENA OBTUSATA***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

ARUN RAJ. M
Reg. No. 2013131050005

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, ARUN RAJ. M – (Reg. No. 2013131050005) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH OBTUSE BARRACUDA – *SPHYRAENA OBTUSATA***”. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



ARUN RAJ. M

(Reg. No. 2013131050005)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH OBTUSE BARRACUDA – *SPHYRAENA OBTUSATA***” is the bonafide work carried out by **ARUN RAJ. M-** (Reg. No. 2013131050005), of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH *NEMIPTERUS AURIFILUM***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

BRINDHA. M

Reg. No. 2013131050006

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, BRINDHA. M – (Reg. No. 2013131050006) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH *NEMIPTERUS AURIFILUM***”. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



BRINDHA. M

(Reg. No. 2013131050006)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH *NEMIPTERUS AURIFILUM***” is the bonafide work carried out by **BRINDHA. M-** (Reg. No. 2013131050006), of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM FISH LIVER OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

DIVYALAKSHMI. S
Reg. No. 2013131050007

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, **DIVYALAKSHMI. S** – (Reg. No. 2013131050007) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“EXTRACTION OF BIODIESEL FROM FISH LIVER OIL”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

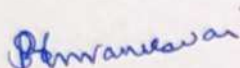


DIVYALAKSHMI. S

(Reg. No. 2013131050007)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM FISH LIVER OIL" is the bonafide work carried out by DIVYALAKSHMI S - (Reg. No. 2013131050007), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH MALABAR TREVALLY – *CARANGOIDES MALABARICUS*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

DURGA. K

Reg. No. 2013131050008

Under the Guidance of

Dr. J. JAYANTHI

March, 2021

DECLARATION

I, DURGA. K – (Reg. No. 2013131050008) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH MALABAR TREVALLY – *CARANGOIDES MALABARICUS***”.

I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021


DURGA. K

(Reg. No. 2013131050008)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH MALABAR TREVALLY – *CARANGOIDES MALABARICUS***” is the bonafide work carried out by **DURGA. K - (Reg. No. 2013131050008)**, of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A Microscopic Study of *Oscillatoria* and *Diatoms* sps. from Freshwater
Ecosystem**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

G. S. ILARISHE
Reg. No. 2013131050010

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, **G. S. Ilarishe** – (Reg. no. 2013131050010) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**A Microscopic study of *Oscillatoria* and *Diatoms* sps. from Freshwater Ecosystem.**”. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

G. S. Ilarishe

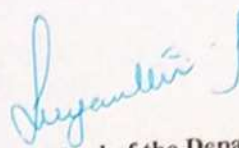
(Reg. no. 2013131050010)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "A Microscopic study of *Oscillatoria* and *Diatoms* sps. from Freshwater Ecosystem" is the bonafide work carried out by G. S. Ilarishe - (Reg. no. 2013131050010), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A Study on Gut Content Analysis of marine fish, Zebra sole (*Zebrias zebra*)
(Bloch, 1787)**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

S. JAGADEESH
Reg. No. 2013131050011

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, S. Jagadeesh – (Reg. no. 2013131050011) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “A Study on Gut Content Analysis of marine fish, Zebra sole (*Zebrias zebra*) (Bloch, 1787)”. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

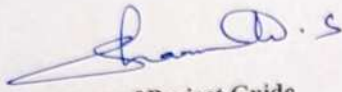


S. Jagadeesh

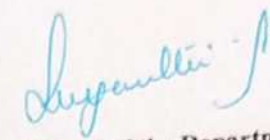
(Reg. no. 2013131050011)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "A Study on Gut Content Analysis of marine fish, Zebra sole (*Zebrias zebra*) (Bloch, 1787)" is the bonafide work carried out by S. Jagadeesh - (Reg. no. 2013131050011), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department
HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Morphometric Measurements and Estimation of Total Protein in the Tissue
Samples of Freshwater Fish (*Piaractus brachypomus*) of Chennai, Tamil Nadu.**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

**R. Kavipriya
Reg. No. 2013131050012**

Under the Guidance of

Dr. J. Jayanthi

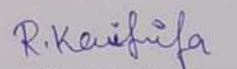
March, 2021

DECLARATION

I, **R. Kavipriya** - (Reg. no. 2013131050012) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, have done a project on the title **“Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Piaractus brachypomus*) of Chennai, Tamil Nadu”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021


R. Kavipriya

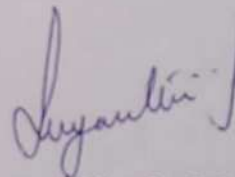
(Reg. no. 2013131050012)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Piaractus brachypomus*) of Chennai, Tamil Nadu**” is the bonafide work carried out by R. Kavipriya - (Reg. no. 2013131050012) of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Identification of Freshwater Phytoplankton, *Chlamydomonas* and *Chlorella*
Sps. Using Light microscope**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

R. KAVIYA
Reg. No. 2013131050013

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, **R. Kaviya** – (Reg. no. 2013131050013) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**Identification of Freshwater Plankton *Chlamydomonas* and *Chlorella* Sps. Using Light microscope**”. I declare that this is my original work.

PLACE: Chennai

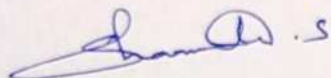
DATE: 11.03.2021


R. Kaviya

(Reg. no. 2013131050013)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "Identification of freshwater plankton *Chlamydomonas* and *Chlorella* Sps. Using Light microscope" is the bonafide work carried out by R. Kaviya - (Reg. no. 2013131050013), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON CARBOHYDRATE INHIBITION (GLYCOPROTEIN) IN THE SERUM

OF MOLE CRAB *EMERITA ASIATICA*

IN

ZOOLOGY

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

KAVIYA SRI SARASWATHI.A

(Reg. no. 2013131050014)

Under the Guidance of

Dr.S.S.Jayaraj

MARCH 2021

DECLARATION

I, KAVIYA SRI SARASWATHI A (Register Number: 2013131050015). I year B.Sc Advance zoology and biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title A STUDY ON CARBOHYDRATE INHIBITION (GLYCOPROTEIN) IN THE SERUM OF MOLE CRAB *EMERITA ASIATICA*. I declare that this is my original work.



KAVIYA SRI SARASWATHI A

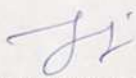
PLACE: Chennai

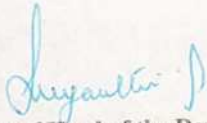
DATE: 19.03.2021

(Register Number: 2013131050014)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled A STUDY ON 'CARBOHYDRATE INHIBITION (GLYCOPROTEIN) IN THE SERUM OF MOLE CRAB *EMERITA ASLATICA* is the bonafide work carried out by KAVIYA SRISARASWATHILA (Register Number: 2013131050014), I year B.Sc Advance zoology and biotechnology Programme, Under my guidance and supervision

SS- 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF MOLE CRAB *EMRITA*

ASIATICA

IN

ZOOLOGY

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

KEERTHI VASAN. J

(Reg. no. 2013131050015)

Under the Guidance of

Dr.S.S.Jayaraj


MARCH 2021

DECLARATION

I, **KEERTHIVASAN J** (Register Number: 2013131050015) I year B.sc Advanced Zoology and Biotechnology Student of Guru Nanak College (Autonomous), has done a project report on the title **A STUDY ON ESTIMATION OF PROTEIN IN MOLE CRAB *Emerita Asiatica***.
I declare that this is my original work.

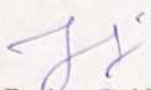
PLACE: CHENNAI

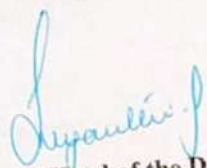
DATE: 19.03.2021


KEERTHIVASAN J
(Register Number: 2013131050015)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled **A STUDY ON 'A STUDY ON ESTIMATION OF PROTEIN IN MOLE CARB *EMERITA ASIATICA*** is the bonafide work carried out by **KEERTHIVASAN J** (Register Number:2013131050015), I year B.sc Advanced Zoology and Biotechnology Student of Guru Nanak College (Autonomous), Programme, Under my guidance and supervision

S.S. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM VEGETABLE OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

KISHOREKANNA. D
Reg. No. 2013131050016

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, KISHOREKANNA. D – (Reg. no. 2013131050016) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “EXTRACTION OF BIODIESEL FROM VEGETABLE OIL”. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

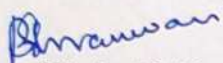
D. Kishorekanna

KISHOREKANNA. D

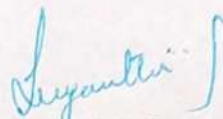
(Reg. No. 2013131050016)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM VEGETABLE OIL" is the bonafide work carried out by **KISHOREKANNA. D** - (Reg. No. 2013131050016), of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

- HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON CARBOHYDRATE INHIBITION (POLYSACCHARIDES) IN THE

SERUM OF MOLE CRAB *Emerita asiatica*

IN

ZOOLOGY

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

B.LEKHAPRIYA

(Reg. no. 2013131050017)

Under the Guidance of

Dr. S.S.JAYARAJ

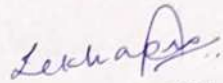
MARCH 20201

DECLARATION

I, **B.LEKHAPRIYA** (Register Number: 2013131050017), I year programme B.Sc Advance zoology and biotechnology Student of Guru Nanak College (Autonomous), has done a project report on the title **A STUDY ON CARBOHYDRATES INHIBITION(POLYSACCHARIDES) IN CRAB Emerita asiatica**. I declare that this is my original work.

PLACE: CHENNAI

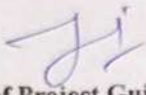
DATE: 19.03.2021

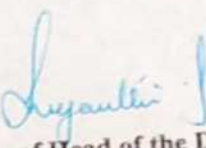

B.LEKHAPRIYA

(Register Number: 2013131050017)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled A STUDY ON 'ON CARBOHYDRATES INHIBITION (POLYSACCHARIDES)' IN CRAB *Emerita asiatica*. is the bonafide work carried out by B.LEKHAPRIYA (Register Number: 2013131050017), 1 year B.Sc Advance zoology and biotechnology programme, Under my guidance and supervision

SS- 
Signature of Project Guide


Signature of Head of the Department
HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A Microscopic Study of *Nostoc* and *Paramecium* spp. from Freshwater
Ecosystem**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

R. LOKESH
Reg. No. 2013131050018

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, **R. Lokesh** – (Reg. no. 2013131050018) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**A Microscopic study of *Nostoc* and *Paramecium* sps. from Freshwater Ecosystem**”. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

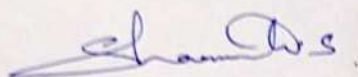


R. Lokesh

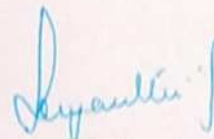
(Reg. no. 2013131050018)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**A Microscopic study of *Nostoc* and *Paramecium* sps. from freshwater ecosystem**" is the bonafide work carried out by **R. Lokesh** - (Reg. no. 2013131050018), of **II. B.Sc. Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH BLACKTIP TREVALLY – *CARANX HEBERI***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

MADHAV KUMAR SINGH

Reg. No. 2013131050019

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, MADHAV KUMAR SINGH – (Reg. No. 2013131050019) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BLACKTIP TREVALLY – *CARANX HEBERI***”. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



MADHAV KUMAR SINGH

(Reg. No. 2013131050019)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BLACKTIP TREVALLY – *CARANX HEBERI***” is the bonafide work carried out by **MADHAV KUMAR SINGH- (Reg. No. 2013131050019), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

— **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH ILISH – *TENUALOSA ILISHA***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

MANI. B

Reg. No. 2013131050021

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, MANI. B – (Reg. No. 2013131050021) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH ILISH – *TENUALOSA ILISHA*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021

B. MANI.
MANI. B

(Reg. No. 2013131050021)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH ILISH – *TENUALOSA ILISHA***” is the bonafide work carried out by **MANI. B - (Reg. No. 2013131050021)**, of **I. B.Sc. Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

– **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH ANCHOVY - *STOLEPHORUS COMMERSONNI*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

MEENAKSHI. R

Reg. No. 2013131050023

Under the Guidance of

Dr. M. G. RAGUNATHAN

March, 2021

DECLARATION

I, **MEENAKSHI. R** – (Reg. No. 2013131050023) of **B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH ANCHOVY - *STOLEPHORUS COMMERSONNI*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



MEENAKSHI. R

(Reg. No. 2013131050023)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH ANCHOVY - *STOLEPHORUS COMMERSONNI***” is the bonafide work carried out by **MEENAKSHI .R - (Reg. No. 2013131050023)**, of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH SAVALAI HAIRTAIL – *LEPTURACANTHUS SAVALA*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

MEENAKSHI. V
Reg. No. 2013131050024

Under the Guidance of

Dr. J. JAYANTHI

March, 2021

DECLARATION

I, **MEENAKSHI. V** – (Reg. No. 2013131050024) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH SAVALAI HAIRTAIL – *LEPTURACANTHUS SAVALA***”. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021

V. Meenakshi

MEENAKSHI. V

(Reg. No. 2013131050024)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH SAVALAI HAIR TAIL – *LEPTURACANTHUS SAVALA***” is the bonafide work carried out by **MEENAKSHI .V - (Reg. No. 2013131050024), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

- **HEAD**

Dept. of Adv. Zoology & Biotechnology
- **Guru Nanak College,**
Chennai - 600 042.

A STUDY ON BACTERIAL AGGLUTINATION IN THE SERUM OF MOLE CRAB

EMERITA ASIATICA

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

N.NEHA

(Reg. no. 2013131050025)

Under the Guidance of

Dr.S.S.Jayaraj

MARCH 2021

DECLARATION

I, **N.NEHA** (Register Number: **2013131050025**), I year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON 'BACTERIAL AGGLUTINATION IN THE SERUM OF MOLE CRAB *EMERITA ASIATICA* in Zoology.** I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

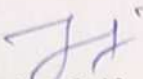



N.NEHA

(Reg No: 2013131050025)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON 'Bacterial agglutination in the serum of mole crab *Emerita asiatica*' in Zoology is the bonafide work carried out by N.NEHA (Register Number: 2013131050025), 1 year B.Sc Advanced Zoology and Biotechnology Programme, under my guidance and supervision

S.S. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH BLACK FIN SCAD – *ALEPES MELANOPTERA*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

**NITHISH. N. M.
Reg. No. 2013131050026**

Under the Guidance of

Dr. J. JAYANTHI

March, 2021

DECLARATION

I, NITHISH. N. M – (Reg. No. 2013131050026) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BLACK FIN SCAD – *ALEPES MELANOPTERA*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



NITHISH. N. M

(Reg. No. 2013131050026)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH BLACK FIN SCAD – *ALEPES MELANOPTERA***” is the bonafide work carried out by **NIHISH. N. M.** - (Reg. No. 2013131050026), of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A
MARINE FISH BLACK SNAKE MACKEREL – *GEMPYLUS SERPENS*
PROJECT REPORT**

Submitted to
GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI - 600 042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by
POOJA. R
Reg. No. 2013131050027

Under the Guidance of
Dr. J. JAYANTHI

March, 2021

DECLARATION

I **POOJA. R** – (Reg. No. 2013131050027) of L. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH SNAKE MACKEREL – *GEMPYLUS SERPENS*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



POOJA. R

(Reg. No. 2013131050027)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF A MARINE FISH SNAKE MACKEREL – *GEMPYLUS SERPENS***" is the bonafide work carried out by **POOJA. R. - (Reg. No. 2013131050027), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

Estimation of Total Protein Content in the prawn *Penaeus monodon* and
Peneaus indicus

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

PRASANTH. I

Reg. No. 2013131050028

Under the Guidance of

Dr. S. Sharmila


March, 2021

DECLARATION

I, **Prasanth. I** – (Reg. no. 2013131050028) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**Estimation of Total Protein Content in the prawn *Penaeus monodon* and *Peneaus indicus***”. I declare that this is my original work.

PLACE: Chennai

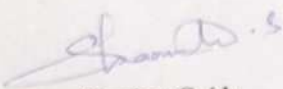
DATE: 11.03.2021

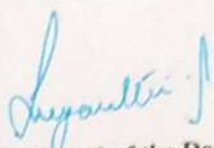

Prasanth. I

(Reg. no. 2013131050028)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "Estimation of Total Protein Content in the prawn *Penacus monodon* and *Peneaus indicus*" is the bonafide work carried out by Prasanth. I - (Reg. no. 2013131050028), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON 'GUT CONTENT ANALYSIS IN MARINE FISH MALBARTRIVALI
CARANGOIDES MALABARICUS**

IN

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

M. PRAVIN KUMAR

(Reg. no. 2013131050030)

Under the Guidance of

Dr.P.LAKSHMI DEVI

March 2021

DECLARATION

I, **M.PRAVINKUMAR** (Register Number: 2013131050030), 1 year B.sc Advanced zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title **GUT CONTENT ANALYSIS IN MARINE FISH MALBARTRIVALI CARANGOIDES MALABARICUS** IN Zoology. I declare that this is my original work.

PLACE:

DATE: 19.3.2021

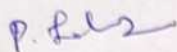
M. Pravinkumar

M.PRAVINKUMAR

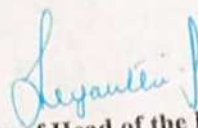
(Register Number: 201313131050030)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "GUT CONTENT ANALYSIS IN MARINE FISH MALBARTRIVALI CARANGOIDES MALABARICUS" Zoology" is the bonafide work carried out by M.PRAVINKUMAR (Register Number: 2013131050030), Iyear B.sc advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON 'Evaluation of LD 50 Value of the phytopesticide Cleistanthin A on the
Adult male insect Odontopus Varicarnis**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

K.PREM

(Reg. no. 2013131050031

Under the Guidance of

'Dr.P.Lakshmi Devi

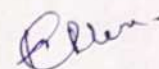
March 2021

DECLARATION

I, **K.PREM**(Register Number: 2013131050031), I year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title **A STUDY ON Evaluation of LD 50 Value of the phytopesticide Cleistanthin A on the Adult male insect Odontopus Varicarnis** in Zoology. I declare that this is my original work.

PLACE:Chennai

DATE: 19.03.2021



K.PREM

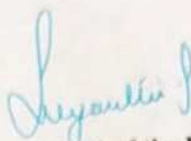
(Register Number: 2013131050031)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled A STUDY ON Evaluation of LD 50 Value of the phytopesticide Cleistanthin A on the Adult male insect *Odontopus Varicarnis* in Zoology is the bonafide work carried out by K.PREM (Register Number: 2013131050031), 1 year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON FICUNDITY AND GONADO SOMATIC INDEX TEST IN MARINE
WATER FISH SPHYREAENA OBTUSATA**

IN

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

V.RAGUL

(Reg. no. 2013131050032)

Under the Guidance of

Dr.P.Lakshmi Devi

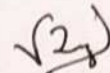
March 2021

DECLARATION

I, V.RAGUL (Register Number: 2013131050032), 1 year B.sc Advanced Zoology and technology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON FICUNDITY AND GONADO SOMATIC INDEX TEST IN MARINE WATER FISH SPHYREAENA OBTUSATA". I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021

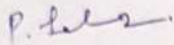


V.RAGUL

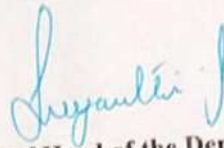
(Register Number: 2013131050032)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON FECUNDITY AND GONADO
SOMATIC INDEX OF TEST IN MARINE WATER FISH SPHYREAENA OBTUSATA"
is the bonafide work carried out by V.RAGUL (Register Number: 2013131050032), 1 year
Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON YEAST AGGLUTINATING ACTIVITY IN THE SERUM OF FRESH
WATER CRAB *Ozotelphusa senex senex***

IN

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

T.RAJLAKSHMI

(Reg. no. 2013131050033)

Under the Guidance of

Dr.P.LAKSHMI DEVI

MARCH 2021

DECLARATION

I, **T.RAJLAKSHMI** (Register Number: 2013131050033), I year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON ' YEAST AGGLUTINATING ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex***". I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021

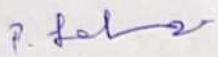
Rajalakshmi T

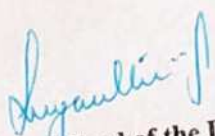
T.RAJLAKSHMI

(Register Number: 2013131050033)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON YEAST AGGLUTINATING ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex*" is the bonafide work carried out by T.RAJLAKSHMI (Register Number: 2013131050033), I year B.Sc advanced Zoology and Biotechnology Programme, Under my guidance and supervision


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON CARBOHYDRATE INHIBITION (SIMPLE SUGARS) IN THE SERUM
OF MOLE CRAB *EMRITA ASIATICA*

IN

ZOOLOGY

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

B. ROHINI

(Reg. no. 2013131050034)

Under the guidance of

Dr. S.S.JAYARAJ

MARCH 2021

DECLARATION

I, B.ROHINI (Register Number: 2013131050034), I year programme B.Sc Advance zoology and biotechnology Student of Guru Nanak College (Autonomous), has done aproject report on the title **A STUDY ON CARBOHYDRATE INHIBITION (SIMPLE SUGARS) IN CRAB *Emerita asiatica*** . I declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021

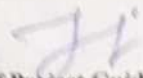
B. Rohini.

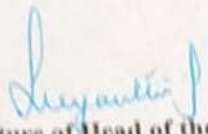
B.ROHINI

(Register Number: 2013131050034)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled **A STUDY ON 'CARBOHYDRATE INHIBITION (SIMPLE SUGAR ' IN MOLE CRAB *Emerita asiatica*** is the bonafide work carried out by **B.ROHINI** (Register Number:2013131050034), **I B.Sc Advance zoology and biotechnology Programme**, Under my guidance and supervision

SS- 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Morphometric Measurements and Estimation of Total Protein in the Tissue
Samples of Freshwater Fish (*Oreochromis mossambicus*) of Chennai,
Tamil Nadu.**

PROJECT REPORT

Submitted to

**GURU NANAK COLLEGE (AUTONOMOUS)
VELACHERY, CHENNAI 600042**



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

**K. Sakthi Manikandan
Reg. no. 2013131050035**

Under the Guidance of

Dr. J. Jayanthi

March, 2021

DECLARATION

I, **K. Sakthi Manikandan** - (Reg. no. 2013131050035) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, have done a project on the title **“Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Oreochromis mossambicus*) of Chennai, Tamil Nadu”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



K. Sakthi Manikandan

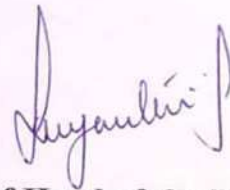
(Reg. no. 2013131050035)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Oreochromis mossambicus*) of Chennai, Tamil Nadu**" is the bonafide work carried out by **K. Sakthi Manikandan - (Reg. no. 2013131050035)** of **I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM MUSTARD OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

SHREYA MUKHOPADHYAY

Reg. No. 2013131050036

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, SHREYA MUKHOPADHYAY – (Reg. No. 2013131050036) of L. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “EXTRACTION OF BIODIESEL FROM MUSTARD OIL”. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

Shreya

SHREYA MUKHOPADHYAY

(Reg. No. 2013131050036)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM MUSTARD OIL" is the bonafide work carried out by SHREYA MUKHOPADHYAY - (Reg. No. 2013131050036), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

Morphometric Measurements and Estimation of Total Protein in the Tissue

Samples of Marine Fish (*Synagris japonicus*) of Chennai, Tamil Nadu.

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

S. Sosini

Reg. no. 2013131050037

Under the Guidance of

Dr. J. Jayanthi

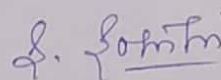
March, 2021

DECLARATION

I, **S. Sosini** - (Reg. no. 2013131050037) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, have done a project on the title **“Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Synagris japonicus*) of Chennai, Tamil Nadu”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



S. Sosini

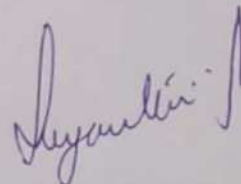
(Reg. no. 2013131050037)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Synagris japonicus*) of Chennai, Tamil Nadu**” is the bonafide work carried out by **S. Sosini - (Reg. no. 2013131050037) of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'HAEMAGGLUTINATING ACTIVITY IN THE SERUM OF MOLE

CRABEMERITA ASIATICA'

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

SUBASHRI RAJ KIRAN

(Reg. no. 2013131050038)

Under the Guidance of

Dr.S.S.JAYARAJ

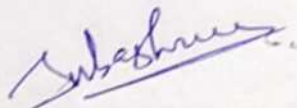
MARCH 2021

DECLARATION

I, Subashri raj kiran (Register Number: 2013131050038), I year B.Sc Advanced Zoology and Biotechnology Student of Guru Nanak College (Autonomous), has done a project report on the title A Study on 'Haemagglutinating activity in serum of mole crab *Emerita asiatica*' in Zoology declare that this is my original work.

PLACE: CHENNAI

DATE: 19.03.2021



SUBASHRI RAJ KIRAN

(Reg. No: 2013131050038)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled A STUDY ON 'Haemagglutinating activity in serum of mole crab *Emerita asiatica*' is the bonafide work carried out by Subashri raj kiran (Register Number: 2013131050038), 1 year B.Sc Advanced Zoology and Biotechnology Student of Guru Nanak College (Autonomous), Programme Under my guidance and supervision

SS. JH
Signature of Project Guide

HEAD
Signature of Head of the Department
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM PALM OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

SURENDAR. M

Reg. No. 2013131050039

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, SURENDAR, M – (Reg. No. 2013131050039) of **B.Sc. Advanced Zoology and Biotechnology**, Student of Guru Nanak College (Autonomous), has done a project report on the title **"EXTRACTION OF BIODIESEL FROM PALM OIL"**. I declare that this is my original work.

PLACE: Chennai

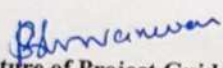
DATE: 19.03.2021


Surenda M
SURENDAR, M

(Reg. No. 2013131050039)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM PALM OIL" is the bonafide work carried out by SURENDAR. M - (Reg. No. 2013131050039), of L. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

— HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Morphometric Measurements and Estimation of Total Protein in the Tissue
Samples of Freshwater Fish (*Labeo rohita*) of Chennai, Tamil Nadu.**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

M. Tamilvanan
Reg. no. 2013131050040

Under the Guidance of

Dr. J. Jayanthi

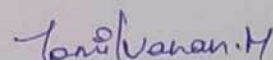
March, 2021

DECLARATION

I, **M. Tamilvanan** – (Reg. no. 2013131050040) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, have done a project on the title **“Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Labeo rohita*) of Chennai, Tamil Nadu”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



M. Tamilvanan

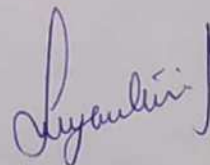
(Reg. no. 2013131050040)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Freshwater Fish (*Labeo rohita*) of Chennai, Tamil Nadu**” is the bonafide work carried out by **M. Tamilvanan** – (Reg. no. 2013131050040) of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM NEEM OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

THANGA REENA. S
Reg. No. 2013131050041

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, THANGA REENA. S – (Reg. No. 2013131050041) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "EXTRACTION OF BIODIESEL FROM NEEM OIL". I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

S.Thanga Reena

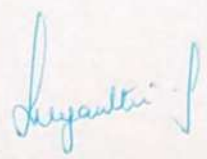
THANGA REENA. S

(Reg. No. 2013131050041)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM NEEM OIL" is the bonafide work carried out by **THANGA REENA. S - (Reg. No. 2013131050041)**, of **I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON GUT CONTENT ANALYSIS OF BLACK POMFRET

(PARASTROMATEUS NIGER)

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

G.THARCIN

(Reg. no. 20131350042)

Under the Guidance of

Dr.S.S.Jayaraj

MARCH 2021

DECLARATION

I, **G.Tharcin** (Register Number: 20131350042), 1 year B.Sc advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title **"A STUDY ON GUT CONTENT ANALYSIS OF BLACK POMFRET (PARASTROMATEUS NIGER)** . I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



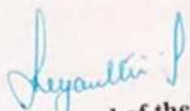
G.THARCIN

(Register Number: 2013131050042)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON GUT CONTENT ANALYSIS OF BLACK POMFRET (PARASTROMATEUS NIGER) in Zoology" is the bonafide work carried out by G.Tharcin (Register Number: 2013131050042) I. Year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision

S.S. Jh
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A Microscopic Study of *Euglena* and *Volvox* sps. from Freshwater
Ecosystem

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

S. K. THEEPAN CHIDAMBARAM

Reg. No. 2013131050043

Under the Guidance of

Dr. S. Sharmila

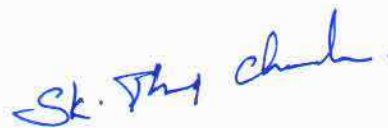
March, 2021

DECLARATION

I, S. K. Theepan Chidambaram – (Reg. no. 2013131050043) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “A Microscopic study of *Euglena* and *Volvox* sps. from Freshwater Ecosystem”. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

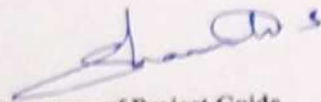



S. K. Theepan Chidambaram

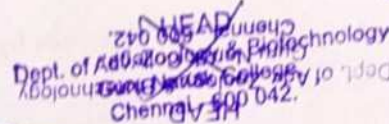
(Reg. no. 2013131050043)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "A Microscopic study of *Euglena* and *Volvox* spp. from Freshwater Ecosystem" is the bonafide work carried out by S. K. Theepan Chidambaram - (Reg. no. 2013131050043), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department



HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON YEAST AGGLUTINATING ACTIVITY IN THE SERUM OF MOLE

CRAB *EMERITA ASIATICA*

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

K.VAITHESWARAN

(Reg. no. 2013131050044)

Under the Guidance of

Dr.S.S.Jayaraj

MARCH 2021

DECLARATION

I, **K. VAITHESWARAN** (Register Number: 2013131050044) 1 year B.Sc Advanced Zoology and Biotechnology Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON 'YEAST AGGLUTINATION IN THE SERUM OF MOLE CRAB *EMERITA ASIATICA***" in Zoology. I declare that this is my original work.

PLACE: Chennai


DATE: 19.03.2021

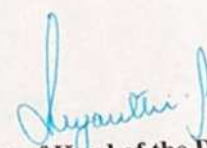
K. Vaitheswaran
K. VAITHESWARAN

(Reg. No. 2013131050044)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled **A STUDY ON 'Yeast agglutinating in the serum of mole crab *Emerita asiatica* in Zoology** is the bonafide work carried out by **K.Vaitheswaran** (Register Number: 2013131050044), 1 year B.Sc Programme, Under my guidance and supervision

SS. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

Gonadostomatic Index (GSI) and Fecundity Analysis of Marine Fish,
Lepturacanthus savala (Cuvier, 1828)

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

R. VELAN
Reg. No. 2013131050045

Under the Guidance of

Dr. S. Sharmila

March, 2021

DECLARATION

I, **R. Velan** – (Reg. no. 2013131050045) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title “**Gonadostomatic Index (GSI) and Fecundity Analysis of Marine Fish, *Lepturacanthus savala* (Cuvier, 1828)**”. I declare that this is my original work.

PLACE: Chennai

DATE: 11.03.2021

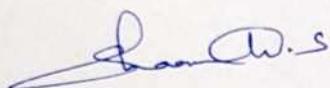


R. Velan

(Reg. no. 2013131050045)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "Gonadostomatic Index (GSI) and Fecundity Analysis of Marine Fish, *Lepturacanthus savala* (Cuvier, 1828)" is the bonafide work carried out by R. Velan - (Reg. no. 2013131050045), of II. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON 'GUT CONTENT ANALYSIS OF MARINE WATER FISH BLACKTIP
TREVALLY CARANX HEBERI**

IN

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

R.VENGATA MANEESWARAN

(Reg. no. 2013131050046

Under the Guidance of

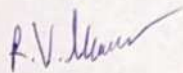
Dr.P.Lakshmi Devi

March 2021

DECLARATION

I, **R.VENGATA MANEESWARAN** (Register Number: 2013131050046), 1 year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON GUT CONTENT ANALYSIS OF MARINE WATER FISH BLACKTIP TREVALLY CARANX HEBERI**". I declare that this is my original work.

PLACE: Chennai

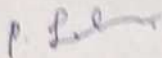

R.VENGATA MANEESWARAN

DATE: 19.03.2021

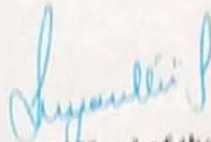
(Register Number: 2013131050046)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON GUT CONTENT ANALYSIS OF MARINE WATER FISH BLACKTIP TREVALLY CARANX HEBERTI " is the bonafide work carried out by R.VENGATA MANEESWARAN (Register Number: 2013131050046), 1. year B.Sc advanced zoology and Biotechnology programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Morphometric Measurements and Estimation of Total Protein in the Tissue
Samples of Marine Fish (*Carangoides gymnotethus*) of Chennai, Tamil Nadu**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

R. Vinith

Reg. no. 2013131050047

Under the Guidance of

Dr. J. Jayanthi

March, 2021

DECLARATION

I, R. Vinith - (Reg. no. 2013131050047) of I. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), have done a project on the title “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Carangoides gymnotethus*) of Chennai, Tamil Nadu**”. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



R. Vinith

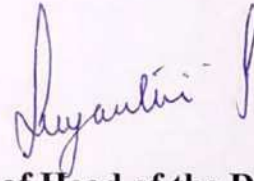
(Reg. no. 2013131050047)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Carangoides gymnotethus*) of Chennai, Tamil Nadu**” is the bonafide work carried out by **R. Vinith - (Reg. no. 2013131050047) of I. B.Sc. Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

EXTRACTION OF BIODIESEL FROM RICE BRAN OIL

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

VINODHINI. M

Reg. No. 2013131050048

Under the Guidance of

Dr. S. BHUVANESWARI

March, 2021

DECLARATION

I, VINODHINI M - (Reg. No. 2013131050048) of **B.Sc. Advanced Zoology and Biotechnology**, Student of Guru Nanak College (Autonomous), has done a project report on the title "**EXTRACTION OF BIODIESEL FROM RICE BRAN OIL**". I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021

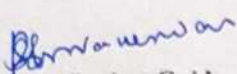
M. Vinodhini

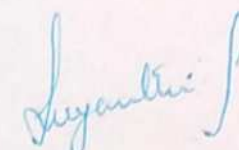
VINODHINI M

(Reg. No. 2013131050048)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "EXTRACTION OF BIODIESEL FROM RICE BRAN OIL" is the bonafide work carried out by VINODHINI. M - (Reg. No. 2013131050048), of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**Morphometric Measurements and Estimation of Total Protein in the Tissue
Samples of Marine Fish (*Caranx djeddaba*) of Chennai, Tamil Nadu.**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



I. B.Sc. Advanced Zoology and Biotechnology

Submitted by

A. Vishal

Reg. no. 2013131050049

Under the Guidance of

Dr. J. Jayanthi

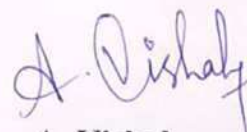
March, 2021

DECLARATION

I, **A. Vishal** - (Reg. no. 2013131050049) of **I. B.Sc. Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, have done a project on the title **“Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Caranx djeddaba*) of Chennai, Tamil Nadu”**. I declare that this is my original work.

PLACE: Chennai

DATE: 19.03.2021



A. Vishal

(Reg. no. 2013131050049)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**Morphometric Measurements and Estimation of Total Protein in the Tissue Samples of Marine Fish (*Caranx djeddaba*) of Chennai, Tamil Nadu**” is the bonafide work carried out by **A. Vishal - (Reg. no. 2013131050049) of I. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.**



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
ASIAN SEABASS – *LATES CALCARIFER***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

AAKASH BABU. S

Reg. No. 1813131050001

Under the Guidance of

Dr. M. G. RAGUNATHAN

MARCH – 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF ASIAN SEABASS – *LATES CALCARIFER***” is the bonafide work carried out by **AAKASH BABU. S -** (Reg. No. 1813131050001), of **III. B. Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION

I, AAKASH BABU. S - (Reg. No. 1813131050001), of III. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF ASIAN SEABASS - *LATES CALCARIFER*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021



AAKASH BABU. S

(Reg. No. 1813131050001)

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
MILK FISH – *CHANOS CHANOS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**ADITYAN M RAJAN
Reg. No. 1813131050003**

Under the Guidance of


Dr. M. G. RAGUNATHAN

MARCH - 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF MILK FISH - *CHANOS CHANOS*" is the bonafide work carried out by ADITYAN M RAJAN - (Reg. No. 1813131050003) of III. B.Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

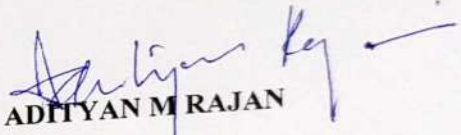
HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION

I, ADITYAN M RAJAN - (Reg. No. 1813131050003) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF MILK FISH - *CHANOS CHANOS*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021


ADITYAN M RAJAN

(Reg. No. 1813131050003)

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
SCAT – *SCATOPHAGUS ARGUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

AKASH R.C

Reg. No. 1813131050005

Under the Guidance of

Dr. M. G. RAGUNATHAN

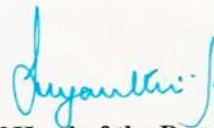
MARCH - 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF SCAT - *SCATOPHAGUS ARGUS*" is the bonafide work carried out by AKASH R.C - (Reg. No. 1813131050005), of III. B.Sc. Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION

I, AKASH R. C - (Reg. No. 1813131050005) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF SCAT - *SCATOPHAGUS ARGUS*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021



AKASH R.C

(Reg. No. 1813131050005)

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
PEARLSPOT- *ETROPLUS SURATENSIS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**AMMULU. S
Reg. No. 1813131050006**

Under the Guidance of

Dr. M. G. RAGUNATHAN


MARCH - 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF PEARLSPOT-*ETROPLUS SURATENSIS*" is the bonafide work carried out by AMMULU. S - (Reg. No. 1813131050006), of III. B. Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.



DECLARATION

I, AMMULU. S - (Reg. No. 1813131050006), of III. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF PEARLSPOT- *ETROPLUS SURATENSIS*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021


AMMULU. S

(Reg. No. 1813131050006)

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
MONO ANGEL – *MONODACTYLUS ARGENTEUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

ASHWIN KUMAR K.P
Reg. No. 1813131050007

Under the Guidance of


Dr. M. G. RAGUNATHAN

MARCH - 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF MONO ANGEL – *MONODACTYLUS ARGENTEUS***” is the bonafide work carried out by **ASHWIN KUMAR. K. P** - (Reg. No. 1813131050007), of **III. B. Sc., Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

 **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION

I, ASHWIN KUMAR. K. P - (Reg. No. 1813131050007) of III. B. Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF MONO ANGEL-MONODACTYLUS ARGENTEUS**". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

P. Ashwin Kumar

ASHWIN KUMAR K.P

(REG. NO. 1813131050007)

**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF
COBIA- *RACHYCENTRON CANADUM***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

CHILUKURI PRIYADHARSHINI

Reg. No. 1813131050008

Under the Guidance of

Dr. J.JAYANTHI

MARCH - 2021

DECLARATION

I, CHILUKURI PRIYADHARSHINI - (Reg. No. 1813131050008) of III. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF COBIA-*RACHYCENTRON CANADUM*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

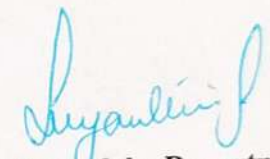
Priya dharshini
CHILUKURI PRIYADHARSHINI

(Reg. No. 1813131050008)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF COBIA-RACHYCENTRON CANADUM**" is the bonafide work carried out by **CHILUKURI PRIYADHARSHINI** - (Reg. no. 1813131050008) of III. B.Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

 **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC OF POMPAO
*TRACHINOTUS CAROLONUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

DEEPIKA. A
Reg. No. 1813131050009

Under the Guidance of

Dr. J.JAYANTHI

MARCH - 2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF POMPAO – TRACHINOTUS CAROLONUS**" is the bonafide work carried out by **DEEPIKA. A-** (Reg. No. 1813131050009) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION

I, DEEPIKA. A - (Reg. No. 1813131050009) of III. B.Sc. Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MERISTIC AND MORPHOMETRIC CHARACTERISTIC FEATURES OF POMPANO - TRACHINOTUS CAROLONUS". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

Deepika . A
DEEPIKA . A

(Reg. No. 1813131050009)

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
CATLA FISH *CATLA CATLA*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**DHAYANITHI. C
Reg. No. 1813131050011**

Under the Guidance of

Dr. J.JAYANTHI

MARCH - 2021

DECLARATION

I, **DHAYANITHI. C** - (Reg. No. 1813131050011), of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF CATLA FISH *CATLA CATLA*”**. I declare that this is my original work.

PLACE: CHENNAI


DATE: 25.03.2021


Dhayanithi
DHAYANITHI. C

(Reg. No. 1813131050011)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF CATLA FISH CATLA CATLA**" is the bonafide work carried out by **DHAYANITHI. C** - (Reg. No. 1813131050011) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department


HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
ROHU FISH *LABEO ROHITA*
PROJECT REPORT**

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**GAYATHRI. G.
Reg. No. 1813131050012**

Under the Guidance of

Dr. J.JAYANTHI

MARCH - 2021

DECLARATION

I, **GAYATHRI. G** - (Reg. No. 1813131050012), of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF ROHU FISH *LABEO ROHITA*”**. I declare that this is my original work.

PLACE: CHENNAI


DATE: 25.03.2021

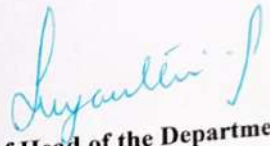

GAYATHRI. G

(Reg. No. 1813131050012)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF ROHU FISH LABEO ROHITA**" is the bonafide work carried out by **GAYATHRI. G** - (Reg. No. **1813131050012**) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

 **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
MRIGAL CARP *CIRRHINUS CIRRHOSUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

GOKUL. S.
Reg. No. 1813131050013

Under the Guidance of

Dr. S. SHARMILA

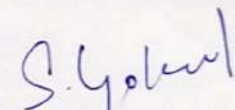
MARCH - 2021

DECLARATION

I, GOKUL. S - (Reg. No. 1813131050013), of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF MRIGAL CARP *CIRRHINUS CIRRHOSUS*". I declare that this is my original work.

PLACE: CHENNAI


DATE: 25.03.2021



GOKUL. S

(Reg. No. 1813131050013)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF MRIGAL CARP *CIRRHINUS CIRRHOSUS***" is the bonafide work carried out by **GOKUL. S** - (Reg. No. 1813131050013) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

 **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
SILVER SILLAGO FISH – *SILLAGO SINICA***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**GOWSALYA. S.
Reg. No. 1813131050014**

Under the Guidance of

Dr. J. JAYANTHI

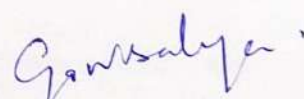
MARCH - 2021

DECLARATION

I, GOWSALYA. S - (Reg. No. 1813131050014), of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF SILVER SILLAGO FISH – *SILLAGO SINICA***". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021


GOWSALYA. S

(Reg. No. 1813131050014)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF SILVER SILLAGO FISH – *SILLAGO SINICA***" is the bonafide work carried out by **GOWSALYA. S** - (Reg. No. **1813131050014**) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department



HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
TILAPIA FISH – *OREOCHROMIS MOSSAMBICUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**HARIPRIYA. S.
Reg. No. 1813131050017**

Under the Guidance of

Dr. J. JAYANTHI

MARCH - 2021

DECLARATION

I, **HARIPRIYA. S** - (Reg. No. 1813131050017) of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF TILAPIA FISH – *OREOCHROMIS MOSSAMBICUS*”**. I declare that this is my original work.

PLACE: CHENNAI


DATE: 25.03.2021

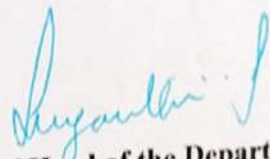

HARIPRIYA. S

(Reg. No. 1813131050017)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF TILAPIA FISH - OREOCHROMIS MOSSAMBICUS**" is the bonafide work carried out by **HARIPRIYA. S - (Reg. No. 1813131050017)** of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
GREY MULLET *MUGIL CEPHALUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

**HEMALATHA. M.
Reg. No. 1813131050018**

Under the Guidance of

Dr. J. JAYANTHI

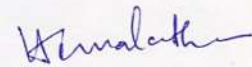
MARCH - 2021

DECLARATION

I, **HEMALATHA. M** - (Reg. No. 1813131050018) of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GREY MULLET *MUGIL CEPHALUS*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021



HEMALATHA. M

(Reg. No. 1813131050018)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GREY MULLET *MUGIL CEPHALUS***" is the bonafide work carried out by **HEMALATHA. M** - (Reg. No. 1813131050018) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

 **HEAD**
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
GROUPER FISH - *EPHINEPHELUS SP***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

KAMALESH. K.
Reg. No. 1813131050020

Under the Guidance of

Dr. S. SHARMILA

MARCH - 2021

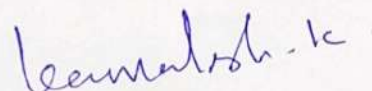
DECLARATION

I, KAMALESH. K - (Reg. No. 1813131050020) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GROUPER FISH - *EPHINEPHELUS SP*”**.

I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021



KAMALESH. K

(Reg. No. 1813131050020)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GROUPER FISH - *EPHINEPHELUS SP***" is the bonafide work carried out by **KAMALESH. K** - (Reg. No. 1813131050020) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD
[Dept. of Adv. Zoology & Biotechnology]
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
*SYNAGRIS JAPONICUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

MANOJKUMAR. G
Reg. No. 1813131050023

Under the Guidance of

Dr. S. SHARMILA

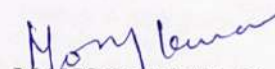
MARCH - 2021

DECLARATION

I, MANOJKUMAR. G - (Reg. No. 1813131050023) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF *SYNAGRIS JAPONICUS*”. I declare that this is my original work.

PLACE: CHENNAI

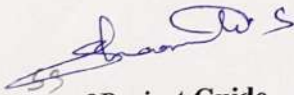
DATE: 25.03.2021


MANOJKUMAR. G

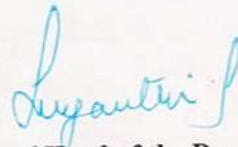
(Reg. No. 1813131050023)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF *SYNAGRIS JAPONICUS***" is the bonafide work carried out by **MANOJKUMAR. G - (Reg. No. 1813131050023)** of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**GONADO SOMATIC INDEX CHARACTERIZATION OF
*LEPTURACANTHUS SAVALA***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

MOHANRAJ. P

Reg. No. 1813131050024

Under the Guidance of

Dr. S. SHARMILA

MARCH - 2021

DECLARATION

I, MOHANRAJ. P - (Reg. No. 1813131050024) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“GONADO SOMATIC INDEX CHARACTERISTIRIZATION OF *LEPTURACANTHUS SAVALA*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021




MOHANRAJ. P

(Reg. No. 1813131050024)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "GONADO SOMATIC INDEX CHARACTERISTIRIZATION OF *LEPTURACANTHUS SAVALA*" is the bonafide work carried out by MOHANRAJ. P - (Reg. No. 1813131050024) of III. B.Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department
HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
GOLD FISH *CARASSIUS AURATUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

NITHEESH. K
Reg. No. 1813131050026

Under the Guidance of

Dr. S. SHARMILA

MARCH - 2021

DECLARATION

I, NITHEESH. K - (Reg. No. 1813131050026) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GOLD FISH *CARASSIUS AURATUS*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

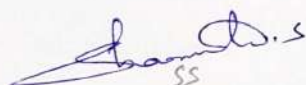


NITHEESH. K


(Reg. No. 1813131050026)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GOLD FISH *CARASSIUS AURATUS***" is the bonafide work carried out by **NITHEESH. K** - (Reg. No. **1813131050026**) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF FRESH WATER CRAB
Oziotelphusa senex senex

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

M.NITHYAPRIYA

(Reg. no. 1813131050027)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, M.NITHYAPRIYA (Register Number: 1813131050027), III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF FRESH WATER CRAB *Ozotelpusa senex senex*" I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

M. Nithyapriya
M.NITHYAPRIYA

(Register Number: 1813131050027)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex*" is the bonafide work carried out by M.NITHYAPRIYA(Register Number: 1813131050027), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision

S.S. J.S.
Signature of Project Guide

Suganthi
Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON HEMAGGLUTINATING ACTIVITY IN THE SERUM OF FRESH
WATER CRAB *Ozotelphusa senex senex***

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

S.OMPRAKASH SOMAN

(Reg. no. 1813131050028)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, S.OMPRAKASH SOMAN (Register Number: 1813131050028), III year B.sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON HEMAGGLUTINATING ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex*". I declare that this is my original work.

PLACE: Chennai

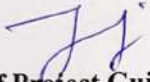
DATE: 25.03.2021

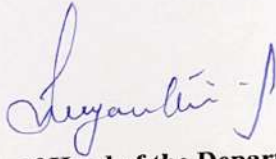
S. Ompakash. Soman.
S.OMPRAKASH SOMAN

(Register Number: 1813131050028)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON HEMAGGLUTINATING ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Oziotelphusa senex senex*" is the bonafide work carried out by S.OMPRAKASH SOMAN (Register Number:1813131050028), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision

S.S. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'BACTERIAL AGGLUTINATION IN THE SERUM OF FRESH WATER
CRAB *Ozotelpusa senex senex*

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

D.PAVITHRA

(Reg. no. 1813131050029)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, **D.PAVITHRA** (Register Number: 1813131050029), III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON BACTERIAL AGGLUTINATION IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex***". I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021


D.PAVITHRA

(Register Number: 1813131050029)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON BACTERIAL AGGLUTINATION IN THE SERUM OF FRESH WATER CRAB *Oziotelphusa senex senex* 'is the bonafide work carried out by D.PAVITHRA Register Number: 1813131050029), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**A STUDY ON 'ANTIBACTERIAL ACTIVITY IN THE SERUM OF FRESH WATER
CRAB *Ozotelphusa senex senex***

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

K.PRASANTH

(Reg. no. 1813131050030)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, **K.PRASANTH** (Register Number: 1813131050030), III year B.sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON ANTIBACTERIAL ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Ozotelphusa senex senex***". I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

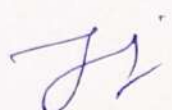
K. prasanth.

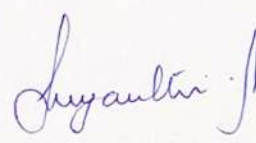
K.PRASANTH

(Register Number: 1813131050030)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "**A STUDY ON ANTIBACTERIAL ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Ozotelpusa senex senex***" is the bonafide work carried out by **K.PRASANTH** (Register Number: **1813131050030**, III year B.Sc Advanced Zoology and Biotechnology Programme, under my guidance and supervision

S.S. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'ANTIFUNGAL ACTIVITY IN THE SERUM OF FRESH WATER CRAB
Oziotelphusa senex senex

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

J.RAMYA

(Reg. no. 1813131050031)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, J.RAMYA (Register Number: 1813131050031) III year B.sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON ANTIFUNGAL ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Oziotelphusa senex senex*". I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021


J. Ramya.

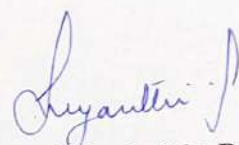
J.RAMYA

(Register Number: 1813131050031)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON ANTIFUNGAL ACTIVITY IN THE SERUM OF FRESH WATER CRAB *Oziotelphusa senex senex*" is the bonafide work carried out by **J.RAMYA** (Register Number: 1813131050031), III year B.Sc Advanced Zoology and Biotechnology Programme, under my guidance and supervision

S.S. 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'YEAST AGGLUTINATION IN THE SERUM OF MUD CRAB
Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

M.RISAB

(Reg. no. 1813131050032)

Under the Guidance of

Dr S.S.Jayaraj

March 2021

DECLARATION

I, **M.RISAB (Register Number: 1813131050032)**, III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title “**A STUDY ON YEAST AGGLUTINATION IN THE SERUM OF MUD CRAB *Scylla serrata***”. I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

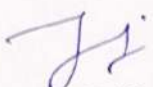
M. Risab

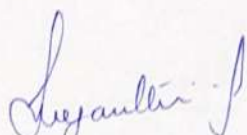
M.RISAB

(Register Number: 1813131050032)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "**A STUDY ON YEAST AGGLUTINATION IN THE SERUM OF MUDCRAB *Scylla serrata***" is the bonafide work carried out by **M.RISHAB** (Register Number: 1813131050032), III year B.Sc Advanced Zoology and Biotechnology Programme, under my guidance and supervision

S.S. - 
Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'PROTEIN ESTIMATION IN THE SERUM OF MUDCRAB

Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

S.RUPASRILEKHA

(Reg. no. 1813131050033)

Under the Guidance of

Dr P.LAKSHMI DEVI

March 2021

DECLARATION

I, **S.RUPASRILEKHA** (Register Number: 1813131050033), III year B.sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "**A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF MUD CRAB *Scylla serrata***". I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

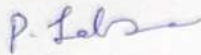
S. Rupasrilekha

S.RUPASRILEKHA

(Register Number: 1813131050033)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON PROTEIN ESTIMATION IN THE SERUM OF MUD CRAB *Scylla serrata*" is the bonafide work carried out by S.RUPASRILEKHA (Register Number: 1813131050033), III year B.Sc Advanced Zoology and Biotechnology Programme, under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'HEMAGGLUTINATING ACTIVITY IN THE SERUM OF MUD CRAB

Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

A.SANTHOSH

(Reg. no. 1813131050036)

Under the Guidance of

Dr P.LAKSHMI DEVI

March 2021

DECLARATION

I, A.SANTHOSH (Register Number: 1813131050036) , III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON HEMAGGLUTINATING ACTIVITY IN THE SERUM OF MUD CRAB *Scylla serrata*". I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

A. Santhosh

A.SANTHOSH


(Register Number: 1813131050036)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "**A STUDY ON HEMAGGLUTINATING ACTIVITY IN THE SERUM OF MUD CRAB *Scylla serrata***" is the bonafide work carried out by **A.SANTHOSH** (Register Number: 1813131050036), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON BACTERIAL AGGLUTINATION IN THE SERUM OF MUD CRAB

Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

P.SIDDHANTH

(Reg. no. 1813131050038)

Under the Guidance of

Dr P.LAKSHMI DEVI

March 2021

DECLARATION

I, P.SIDDHANTH (Register Number: 1813131050038), III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON BACTERIAL AGGLUTINATION IN THE SERUM OF MUDCRAB *Scylla serrata* I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

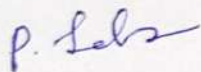
Siddhanth P

P.SIDDHANTH

(Register Number: 1813131050038)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "**A STUDY ON BACERIAL AGGLUTINATION IN THE SERUM OF MUD CRAB *Scylla serrata***" is the bonafide work carried out by **P.SIDDHANTH (Register Number: 1813131050038)**, III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'ANTIBACTERIAL ACTIVITY IN THE SERUM OF MUD CRAB

Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

T.SOLAI HARIS

(Reg. no. 1813131050039)

Under the Guidance of

Dr P.LAKSHMI DEVI

March 2021

DECLARATION

I, T.SOLAI HARIS (Register Number: 1813131050039), III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON ANTIBACTERIAL ACTIVITY IN THE SERUM OF MUDCRAB *Scylla serrata*" I declare that this is my original work.

PLACE: Chennai

DATE: 25.03.2021

Solai Harris

T.SOLAI HARIS

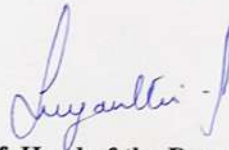
(Register Number: 1813131050039)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON ANTIBACTERIAL ACTIVITY IN THE SERUM OF MUD CRAB *Scylla serrata* is the bonafide work carried out by T.SOLAI HARIS (Register Number: 1813131050039), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

A STUDY ON 'ANTIFUNGAL ACTIVITY IN THE SERUM OF MUDCRAB

Scylla serrata

IN

Zoology

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI 600042



PROGRAMME NAME

Submitted by

S.SRIGANAPATHY

(Reg. no. 1813131050040)

Under the Guidance of

Dr P.LAKSHMI DEVI

March 2021

DECLARATION

I , S. SRIGANAPATHY (Register Number: 1813131050040), III year B.Sc Advanced Zoology and Biotechnology programme Student of Guru Nanak College (Autonomous), has done a project report on the title "A STUDY ON ANTIFUNGAL ACTIVITY IN THE SERUM OF MUD CRAB *Scylla serrata*". I declare that this is my original work.

PLACE: Chennai

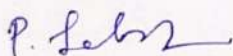
DATE: 25.03.2021

S. Sriganapathy
S. SRIGANAPATHY


(Register Number: 1813131050040)

BONAFIDE CERTIFICATE

This is to certify that project Report entitled "A STUDY ON ANTIFUNGAL ACTIVITY IN THE SERUM OF MUD CRAB *Scylla serrata*" is the bonafide work carried out by S.SRIGANAPATHY (Register Number: 1813131050040), III year B.Sc Advanced Zoology and Biotechnology Programme, Under my guidance and supervision



Signature of Project Guide



Signature of Head of the Department

— HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
GREATER LIZARD FISH - *SAURIDA TUMBIL***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

SUBA SONIYA. S
Reg. No. 1813131050041

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, SUBA SONIYA. S - (Reg. No. 1813131050041) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GREATER LIZARD FISH - SAURIDA TUMBIL**". I declare that this is my original work.

PLACE: CHENNAI

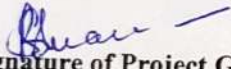
DATE: 25.03.2021

Suba Soniya. S.
SUBA SONIYA. S

(Reg. No. 1813131050041)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GREATER LIZARD FISH - SAURIDA TUMBIL**" is the bonafide work carried out by **SUBA SONIYA. S** - (Reg. No. 1813131050041) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department


HEAD
Dept. of Adv. Zoology & Biotechnology,
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
*AURIGEUULA FASCIATA***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

SURENDAR. E
Reg. No. 1813131050042

Under the Guidance of

Dr. J. JAYANTHI

MARCH - 2021

DECLARATION

I, SURENDAR. E - (Reg. No. 1813131050042) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF *AURIGUULA FASCIATA*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021




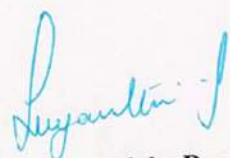
SURENDAR. E

(Reg. No. 1813131050042)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF *AURIGUULA FASCIATA***" is the bonafide work carried out by **SURENDAR. E - (Reg. No. 1813131050042)** of **III. B.Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous)** under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
GARFISH – *BELONE BELONE***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

SWARARAMAN. I
Reg. No. 1813131050043

Under the Guidance of

Dr. J. JAYANTHI

MARCH - 2021

DECLARATION

I, **SWARARAMAN. I** - (Reg. No. 1813131050043) of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GARFISH – *BELONE BELONE*”**. I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021


SWARARAMAN. I


(Reg. No. 1813131050043)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF GARFISH - *BELONE BELONE***" is the bonafide work carried out by **SWARARAMAN. I - (Reg. No. 1813131050043)** of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
(Dept. of Adv. Zoology & Biotechnology)
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
JUMPING HALF BEAK FISH – HEMIRAMPHUS GEORGII**

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

TAMILARASI. R
Reg. No. 1813131050044

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, **TAMILARASI. R** - (Reg. No. 1813131050044) of **III. B.Sc., Advanced Zoology and Biotechnology**, Student of **Guru Nanak College (Autonomous)**, has done a project report on the title **“MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF JUMPING HALF BEAK FISH – HEMIRAMPHUS GEORGII”**. I declare that this is my original work.

PLACE: CHENNAI

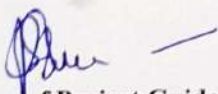
DATE: 25.03.2021

Tamilarasi. R.
TAMILARASI. R

(Reg. No. 1813131050044)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF JUMPING HALF BEAK FISH – HEMIRAMPHUS GEORGII**” is the bonafide work carried out by **TAMILARASI R - (Reg. No. 1813131050044)** of **III. B.Sc., Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
BLACK-BARRED HALF BEAK FISH – *HEMIRAMPHUS FAR***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

UDHAYA RAJASEKARAN
Reg. No. 1813131050045

Under the Guidance of

Dr. S. SHARMILA


MARCH - 2021

DECLARATION

I, UDHAYA RAJASEKARAN - (Reg. No. 1813131050045) of III. B.Sc.,
Advanced Zoology and Biotechnology, Student of Guru Nanak College
(Autonomous), has done a project report on the title "**MORPHOMETRIC AND
MERISTIC CHARACTERISTIC FEATURES OF BLACK-BARRED HALF
BEAK FISH – *HEMIRAMPHUS FAR***". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

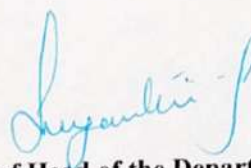

UDHAYA RAJASEKARAN
(Reg. No. 1813131050045)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF BLACK-BARRED HALF BEAK FISH – *HEMIRAMPHUS FAR***" is the bonafide work carried out by **UDHAYA RAJASEKARAN - (Reg. No. 1813131050045)** of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology,
Guru Nanak College,
Chennai - 600 042.

GONADO SOMATIC INDEX CHARACTERIZATION OF *GAZZA MINUTA*

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

VAIBHAV. S
Reg. No. 1813131050046

Under the Guidance of

Dr. J. JAYANTHI

MARCH - 2021

DECLARATION

I, VAIBHAV. S - (Reg. No. 1813131050046) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "**GONADO SOMATIC INDEX CHARACTERIZATION OF GAZZA MINUTA**". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021



VAIBHAV. S

(Reg. No. 1813131050046)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**GONADO SOMATIC INDEX CHARACTERIZATION OF *GAZZA MINUTA***" is the bonafide work carried out by **VAIBHAV. S - (Reg. No. 1813131050046)** of **III. B.Sc., Advanced Zoology and Biotechnology**, **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042,



**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF OIL
SARDINE FISH – *SARDINELLA LONGICEPS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

VENNILAVAN. K
Reg. No. 1813131050047

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, VENNILAVAN. K - (Reg. No. 1813131050047) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF OIL SARDINE FISH – *SARDINELLA LONGICEPS*". I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

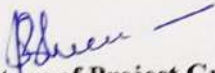
Vennilavan. K.

VENNILAVAN. K

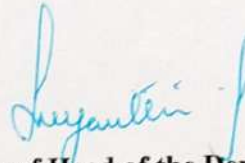
(Reg. No. 1813131050047)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF OIL SARDINE FISH – *SARDINELLA LONGICEPS***" is the bonafide work carried out by **VENNILAVAN. K - (Reg. No. 1813131050047)** of **III. B.Sc., Advanced Zoology and Biotechnology,** **Guru Nanak College (Autonomous)** under my guidance and supervision.



Signature of Project Guide



Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
KOI CARP FISH – *CYPRINUS RUBROFUSCUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

VIJAY. G
Reg. No. 1813131050048

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, VIJAY. G - (Reg. No. 1813131050048) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF KOI CARP FISH – *CYPRINUS RUBROFUSCUS***”. I declare that this is my original work.

PLACE: CHENNAI

DATE: 25.03.2021

vi Jay. G
VIJAY. G

(Reg. No. 1813131050048)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF KOI CARP FISH – *CYPRINUS RUBROFUSCUS***" is the bonafide work carried out by **VIJAY. G** - (Reg. No. 1813131050048) of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.

Signature of Project Guide

Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
CAT FISH – *SILURUS GLANIS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

VIJITHA. T
Reg. No. 1813131050049

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, VIJITHA. T - (Reg. No. 1813131050049) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title “MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF CAT FISH – *SILURUS GLANIS*”. I declare that this is my original work.

PLACE: CHENNAI

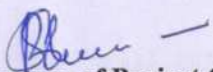
DATE: 25.03.2021

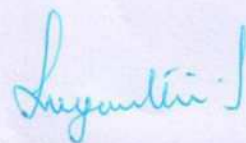

Vijitha.T.
VIJITHA. T

(Reg. No. 1813131050049)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF CAT FISH – *SILURUS GLANIS***" is the bonafide work carried out by **VIITHA. T - (Reg. No. 1813131050049)** of **III. B.Sc., Advanced Zoology and Biotechnology**, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF
SNAKE HEADED MURREL FISH – *CHANNA STRIATUS***

PROJECT REPORT

Submitted to

GURU NANAK COLLEGE (AUTONOMOUS)

VELACHERY, CHENNAI - 600 042



III. B.Sc., ADVANCED ZOOLOGY AND BIOTECHNOLOGY

Submitted by

VISHVA. R

Reg. No. 1813131050050

Under the Guidance of

Dr. S. BHUVANESWARI

MARCH - 2021

DECLARATION

I, VISHVA. R - (Reg. No. 1813131050050) of III. B.Sc., Advanced Zoology and Biotechnology, Student of Guru Nanak College (Autonomous), has done a project report on the title "**MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF SNAKE HEADED MURREL FISH – *CHANNA STRIATUS***". I declare that this is my original work.

PLACE: CHENNAI

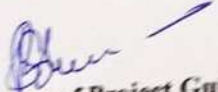
DATE: 25.03.2021

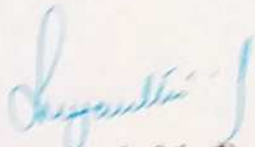
Vishwa.R.
VISHWA. R

(Reg. No. 1813131050050)

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "MORPHOMETRIC AND MERISTIC CHARACTERISTIC FEATURES OF SNAKE HEADED MURREL FISH - *CHANNA STRIATUS*" is the bonafide work carried out by VISHVA. R - (Reg. No. 1813131050050) of III. B.Sc., Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous) under my guidance and supervision.


Signature of Project Guide


Signature of Head of the Department

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

GURU NANAK COLLEGE
PG & RESERCH DEPARTMENT OF CHEMISTRY
STUDENT PROJECT DETAILS -2020-21
M.Sc CHEMISTRY
BATCH-2019-2021

BONAFIDE CERTIFICATE

This is to certify that the project entitled. **“A SOLVENT FREE SYNTHESIS OF ZINC – BDC METAL ORGANIC FRAMEWORK NANO PARTICLES (MOFNP) AND ITS CHARACTERIZATION”** submitted to the Department of chemistry, **Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **AKALYA DEVI P(1913132049001)**



Dr. R. M. EZHILARASI

Associate Professor & Head
Department of Chemistry
Guru Nanak College
Chennai-600042




Mr. V. PORCHEZHIAN

Assistant Professor
Department of Chemistry
Guru Nanak College
Chennai-600042



Examiner I



Examiner II

Submitted for the Viva-Voce held on

DECLARATION

I hereby declare that the work entitled “**“A SOLVENT FREE SYNTHESIS OF ZINC–BDC METAL ORGANIC FRAMEWORK NANO PARTICLES (MOFNP) AND ITS CHARACTERIZATION”**.”Submitted by me for the award of the degree of the **Master of Science in Chemistry** is a record of original project work done by me in the National Centre for Ultrafast Processes, University of Madras, Taramani Campus, Chennai-600113. During my period of study (2019-2021) in Guru Nanak College I further declare that the contents of this dissertation report in full or part have not been submitted to any other Institute or University for the award of any degree or diploma.

AKALYA DEVI. P

Countersigned by



Mr. V. PORCHEZHIAN

Assistant Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600042

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled "**RARE EARTH BASED UPCONVERSION LUMINESCENT MATERIALS - a Recent Review**" submitted to the Department of chemistry, Guru Nanak College (Autonomous) in partial fulfillment of the requirement for the award of the degree of Master of Science in Chemistry is a record of the original research work done by **Ms.G.Anusuya** (REG.NO.REG No.1913132049002) in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.



Dr.R.M.EZHILARASI
Associate Professor & Head
Department of Chemistry
GuruNanakCollege (Autonomous)
Chennai-600 042



Dr.A.KARTHIKEYANI
Associate Professor
Supervisor
Department of Chemistry
GuruNanakCollege (Autonomous)
Chennai-600 042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30.04.2021

DECLARATION

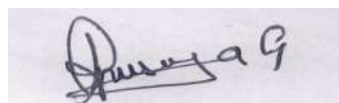
I hereby declare that the dissertation work entitled "**RARE EARTH BASED UPCONVERSION LUMINESCENT MATERIALS - a Recent Review**" submitted by **ANUSUYA** (REG No.1913132049002) for the award of the degree of master of science in chemistry is a record of the original work done by us in the Department of chemistry, Guru Nanak College (Autonomous), Chennai-42, during my period of study (2018-2020) at Guru Nanak college. We further declare that the contents of this dissertation report in full or part have not been submitted to any other institute or university for the award of any degree or diploma.

Countersigned by:



Dr. A.KARTHIKEYANI

Associate Professor,
Department of Chemistry,
Guru Nanak College (Autonomous),
Chennai-600 042.



Anusuya.G

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled "**SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANO PSRTICLES**" submitted to the **the Department of Chemistry, Guru Nanak College(Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **BALAMURUGAN.S (Reg.No.1913132049003)** in the **Department of Chemistry, Guru Nanak College (Autonomous),Velachery,Chennai-600042.**



Dr.R.M.EZHILARASI

Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600042

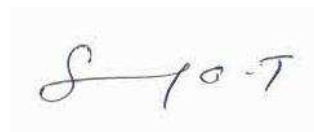


Ms.E.PRATHIBHA

Project Supervisor & Asst.Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that project report entitled **“SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANOPARTICLES”** submitted to the Department of chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfilment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery under the supervision of **Ms.E.PRATHIBHA**, Asst.Professor, Department of Chemistry, Guru Nanak College (Autonomous). This dissertation has not previously formed the basis for the award of any degree, Diploma, Associateship, Fellowship, or other similar titles.


(BALAMURUGANS)

Countersignedby



Ms.E.PRATHIBHA

Project Supervisor &

Asst.Professor

Department of Chemistry

Guru NanakCollege (Autonomous)

Chennai-600042

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled **RARE EARTH BASED UPCONVERSION LUMINESCENT MATERIALS - a Recent Review** submitted to the Department of chemistry, Guru Nanak College (Autonomous) in partial fulfillment of the requirement for the award of the degree of Master of Science in Chemistry is a record of the original research work done by **Mr.M.Gokul** (REG No.1913132049005) **in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.**



Dr.R.M.EZHILARASI

Associate Professor & Head
Department of Chemistry
GuruNanakCollege (Autonomous)
Chennai-600 042



Dr.A.KARTHIKEYANI

Associate Professor
Supervisor
Department of Chemistry
GuruNanakCollege (Autonomous)
Chennai-600 042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30.04.2021

DECLARATION

I hereby declare that the dissertation work entitled "**RARE EARTH BASED UPCONVERSION LUMINESCENT MATERIALS - a Recent Review**" submitted by **GOKUL.M** (REG No.1913132049005) for the award of the degree of master of science in chemistry is a record of the original work done by us in the Department of chemistry, Guru Nanak College (Autonomous), Chennai-42, during my period of study (2018-2020) at Guru Nanak college. We further declare that the contents of this dissertation report in full or part have not been submitted to any other institute or university for the award of any degree or diploma.

Countersigned by:



Dr. A.KARTHIKEYANI
Associate Professor,
Department of Chemistry,
Guru Nanak College (Autonomous),
Chennai-600 042.



GOKUL.M

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled, “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**”, submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfilment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **Mr. K. GOWTHAMAN** (Reg. no. 1913132049006) in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.



Dr. R. M. EZHILARASI

Associate Professor & Head

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042 Chennai-600 042



Ms. T. SAROJA

Asso. Professor

Department of Chemistry

Guru Nanak College (Autonomous)



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that dissertation entitled “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**”, submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfilment of the requirements for the Degree of **MASTER OF SCIENCE** in **CHEMISTRY** is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous); Velachery, Chennai under the supervision of **Ms. T. SAROJA**, Associate Professor, Department of Chemistry, Guru Nanak College (Autonomous) during the academic year 2020-2021. This dissertation has not been previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar titles.

K. GOWTHAMAN

(Reg.No.1913132049006)

Countersigned by



Ms. T. SAROJA

Associate Professor

Department of Chemistry

Guru Nanak College (Autonomous)

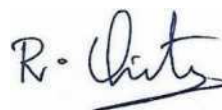
Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the review article entitled, '**BIOLOGICAL ACTIVITIES OF ACORUS CALAMUS – A REVIEW**', submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original work done by **Mr.P.Kumaran (Reg. no.1913132049008)** in Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.



Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Dr. R. CHITRA
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Examiner I



Examiner II

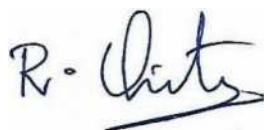
Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that project report entitled ,**‘BIOLOGICAL ACTIVITIES OF ACORUS CALAMUS – A REVIEW’** submitted to the Department of chemistry, Guru Nanak College (Autonomous) in March 2020, in partial fulfillment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of chemistry, Guru Nanak College (Autonomous), Velachery under the guidance of **Dr. R. CHITRA**, Asst. Professor, Department of Chemistry, Guru Nanak College (Autonomous). This dissertation has not been previously formed the basis for the award of any degree, Diploma, Associate ship, Fellowship or other similar titles.

(P.KUMARAN)

Countersigned by



Dr. R.CHITRA

Project guide

Asst. Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled "SYNTHESIS AND CHARACTERISATION OF IRONOXIDE NANOPARTICLES" submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **LAVANYA N(Reg. No. 1913132049009)** in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600042.

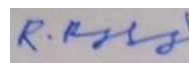


Dr.R.M.EZHILARASI

Associate Professor & Head
Department of Chemistry

Guru Nanak College
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Chennai-600042



DR.R.RANGASAMY

Project Supervisor

Asst.Professor

Department of Chemistry

Guru Nanak College
(Autonomous)

Chennai-600042



Examiner I



Examiner II

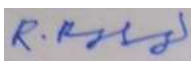
Submitted for the Viva-Voce held on 30.04.2021

DECLARATION

I hereby declare that project report entitled **“SYNTHESIS AND CHARACTERISATION OF IRONOXIDE NANOPARTICLES”** submitted to the Department of chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfilment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery under the supervision of **DR.R.RANGASAMY**, Asst.Professor, Department of Chemistry, Guru Nanak College (Autonomous). This dissertation has not previously formed the basis for the award of any degree, Diploma, associateship, fellowship or other similar titles.

(LAVANYA.N)

Countersigned by



DR.R.RANGASAMY

Project
Supervisor &
Asst. Professor

Department of Chemistry

Guru Nanak College

Chennai-600042

BONAFIED CERTIFICATE

This is to certify that the project entitled “Enhanced thermal properties of SWCNT/Polyvinyl acetate composites by the introduction of carbon nanotubes” submitted to the Department of chemistry, Guru Nanak College (Autonomous) in partial fulfilment of the requirement for the award of the degree of Master of Science in Chemistry is a record of the original research work done by **LOKESHK RegNo:1913132049010** in the Department of Chemistry, Guru Nanak College, Chennai – 600042.



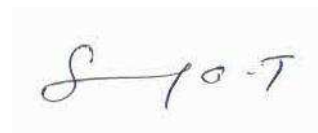
Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Dr. N. MALARVIZHI
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report is the result of investigations carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Chennai - 600042, under the supervision of **Dr N. MALARVIZHI**. Assistant Professor, Department of Chemistry, Guru Nanak College, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigation

LOKESH K

Countersigned by



Dr.N.Malarvizhi,
Project Supervisor
Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**” submitted to the **Department of chemistry, Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **N.NAGARANI (Reg.No:1913132049011)** in **Department of Chemistry, Guru Nanak College** under the guidance of **Assistant Prof. Dr. P.BALU** during the academic year 2020-2021.

Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

Examiner I

Dr. P. BALU
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042


Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report, “ **Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**” is the result of investigations carried out by me in **Department of Chemistry, Guru Nanak College** under the supervision of **Dr. P.BALU, Assistant Professor** during the academic year 2020-2021, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.

N.NAGARANI



Countersigned by:

Dr. P.BALU

Assistant Professor

Department of Chemistry

Guru Nanak College

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**polymer-supported ruthenium(II) complex as a reusable photocatalyst for the visible-light mediated oxidation of thioethers to sulfoxides**” submitted to the **Department of chemistry, Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **R.RAMYA(Reg.No:1913132049013)** in **Department of Chemistry, Guru Nanak College** under the guidance of **Assistant Prof. Dr. A.SRIDHAR** during the academic year 2020-2021.



Dr. R.M.EZHILARASI
Associate professor & Head
Department of Chemistry
Guru Nanak College(Autonomous),
Chennai-600042.



Dr. A. SRIDHAR
Assistant Professor,
Department of Chemistry,
Guru Nanak College(Autonomous),
Chennai-600042.



EXAMINER-I



EXAMINER-II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report, “**Polymer-supported ruthenium(II) complex as a reusable photocatalyst for the visible-light mediated oxidation of thioethers to sulfoxides**” is the result of investigations carried out by me in **Department of Chemistry, Guru Nanak College** under the supervision of **Dr. A.SRIDHAR, Assistant Professor** during the academic year 2020-2021, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.



R.RAMYA

Countersigned by:



Dr. A.SRIDHAR,
Assistant Professor
Department of Chemistry
Guru Nanak College

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**” submitted to the **Department of chemistry, Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **S.SANDHYA(Reg.No:1913132049014)** in **Department of Chemistry, Guru Nanak College** under the guidance of **Assistant Prof. Dr. P.BALU** during the academic year 2020-2021.

Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

Examiner I

Dr. P. BALU
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

Examiner II

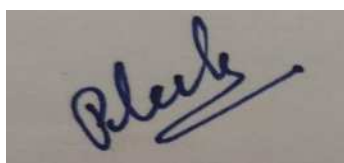
Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report, “ **Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**” is the result of investigations carried out by me in **Department of Chemistry, Guru Nanak College** under the supervision of **Dr. P.BALU, Assistant Professor** during the academic year 2020-2021, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.

S. SANDHYA

Countersigned by:



Dr. P.BALU

Assistant Professor

Department of Chemistry

Guru Nanak College, Chennai -42

BONAFIDE CERTIFICATE

This is to certify that the thesis entitled “**POLYMER-SUPPORED RUTHENIUM(II) COMPLEX AS A REUSABLE PHOTOCATALYST FOR THE VISIBLE-LIGHT MEDIATED OXIDATION OF THIOETHERS TO SULFOXIDES**” submitted by **S.SATHISH (Reg.No:1913132049015)**, Department of Chemistry, Guru Nanak College (Autonomous), Chennai in partial fulfilment of the requirement for the award of the degree of **MASTER OF SCIENCE in CHEMISTRY** is a record of the original research work done by him in the Department of Chemistry, Guru Nanak College(Autonomous), Chennai under my supervision. This thesis has not been previously formed the basis for the award of any degree, diploma, associate ship, fellowship, or any other similar titles.



Dr. R.M.EZHILARASI
Associate professor & Head
Department of Chemistry
Guru Nanak College(Autonomous)
Chennai-600042



Dr.B.RAJESWARI
Assistant Professor
Department of Chemistry
Guru Nanak College(Autonomous),
Chennai-600042.



Examiner I



Examiner II

Submitted for the Viva-Voce held on: 30/04/2021


DECLARATION

I hereby declare that the dissertation entitled, “ **POLYMER-SUPPORTED RUTHENIUM (II) COMPLEX AS A REUSABLE PHOTOCATALYST FOR THE VISIBLE-LIGHT MEDIATED OXIDATION OF THIOETHERS TO SULFOXIDES**” submitted to the Department of Chemistry, Guru Nanak College (Autonomous) , Chennai in April 2021 in partial fulfilment of the requirements for the award of Degree of **MASTER OF SCIENCE in CHEMISTRY** is the original research work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Chennai under the supervision of **Dr.B.RAJESWARI, Assistant Professor** during the academic year 2020-2021. This dissertation has not been previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar titles.



S.SATHISH (Reg.No.1913132049015)

Countersigned by:



Dr.B.RAJESWARI
Assistant Professor,
Department of Chemistry,
Guru Nanak College(Autonomous),
Chennai-600042.

BONAFIDE CERTIFICATE

This is to certify that the project entitled. **“A SOLVENT FREE SYNTHESIS OF ZINC–BDC METAL ORGANIC FRAME WORK NANOPARTICLES (MOFNP) AND ITS CHARACTERIZATION”** submitted to the Department of chemistry, **Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **SHANMUGA PRIYA N(1913132049016)**

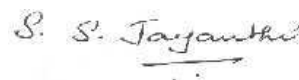


Dr. R.M.EZHILARASI

Associate Professor&Head
DepartmentofChemistry
GuruNanakCollege
Chennai-600042



Examiner I



Dr. S. S. JAYANTHI

AssistantProfessor
ProjectSupervisor
Department ofChemistry
Guru NanakCollege
Chennai-600042



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the work entitled **“ASOLVENT FREE SYNTHESIS OF ZINC–BDC METAL ORGANIC FRAME WORK NANOPARTICLES (MOFNP) AND ITS CHARACTERIZATION”** Submitted by me for the award of the degree of the **Master of Science in Chemistry** is a record of original project work done by me in the National Centre for Ultra fast Processes, University of Madras, Taramani Campus, Chennai-600113. During my period of study (2017-2019) in Guru Nanak College I further declare that the contents of this dissertation report in full or part have not been submitted to any other Institute or University for the award of any degree or diploma.

SHANMUGA PRIYA N

Countersigned by



Dr. S. S. JAYANTHI.

Assistant Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600042

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**GARBAGE TO WORTHWHILE MATERIAL: A REVIEW ON EGGSHELL APPLICATIONS**” submitted to the Department of chemistry , Guru Nanak College (Autonomous) in partial fulfilment of the requirement for the award of the degree of Master of science in Chemistry is a record of the original research work done by **L. SURESH** (Reg No:1913132049017) in the Department of Chemistry, Guru Nanak College (Autonomous), under the guidance of Dr. S. E. Noorjahan, Assistant Professor, during the academic year 2020 – 2021.



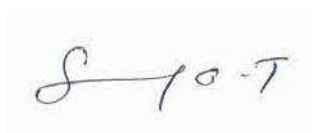
Dr. R. M. EZHILARASI,
Associate Professor & Head,
Department of Chemistry,
Guru Nanak College (Autonomous),
Chennai - 600042



Dr. S. E. NOORJAHAN,
Assistant Professor,
Department of Chemistry,
Guru Nanak College (Autonomous),
Chennai – 600042



EXAMINER – I



EXAMINER - II

Submitted for the Viva-Voce held on 30th April 2021

DECLARATION

I hereby declare that the matter embodied in this project report, “**GARBAGE TO WORTHWHILE MATERIAL: A REVIEW ON EGGSHELL APPLICATIONS**” is the result of investigations carried out by me in the **Department of Chemistry, Guru Nanak College** under the supervision of **Dr. S. E. NOORJAHAN, Assistant Professor**, during the academic year 2020-2021, maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.

Regards,



(L.SURESH)

Countersigned by:



Dr. S. E. NOORJAHAN,

Assistant Professor,

Department of Chemistry,

Guru Nanak College (Autonomous),

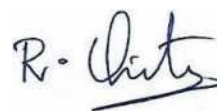
Chennai – 600042

BONAFIDE CERTIFICATE

This is to certify that the review article entitled, '**BIOLOGICAL ACTIVITIES OF ACORUS CALAMUS – A REVIEW**', submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original work done by **Mr.P.Tamil selvan**(Reg. no.1913132049018) in Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.



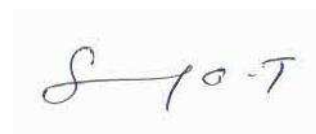
Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Dr. R. CHITRA
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Examiner I



Examiner II

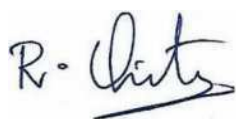
Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that project report entitled , '**BIOLOGICAL ACTIVITIES OF ACORUS CALAMUS – A REVIEW**' submitted to the Department of chemistry, Guru Nanak College (Autonomous) in March 2020, in partial fulfillment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of chemistry, Guru Nanak College (Autonomous), Velachery under the guidance of **Dr. R. CHITRA**, Asst.Professor, Department of Chemistry, Guru Nanak College(Autonomous). This dissertation has not been previously formed the basis for the award of any degree, Diploma, Associate ship, Fellowship or other similar titles.

(**P.TAMIL SELVAN**)

Countersigned by



Dr. R.CHITRA

Project guide

Asst. Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled, “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**”, submitted to the Department of Chemistry, **Guru Nanak College (Autonomous)** in partial fulfilment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **Mr. S. THANUSH KUMAR (Reg. no. 1913132049019)** in the **Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.**



Dr. R. M. EZHILARASI

Associate Professor & Head

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042 Chennai-600 042



Ms. T. SAROJA

Project guide & Asso. Professor

Department of Chemistry

Guru Nanak College (Autonomous)



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021


DECLARATION

I hereby declare that dissertation entitled “**Structural Analysis and Reactivity of Tetramethylcopper (III) Complex towards Oxygen, Sulphur and Phosphorus Donor Ligands by Density Functional Theory**”, submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfilment of the requirements for the Degree of **MASTER OF SCIENCE** in **CHEMISTRY** is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous); Velachery, Chennai under the supervision of **Ms. T. SAROJA**, Associate Professor, Department of Chemistry, Guru Nanak College (Autonomous) during the academic year 2020-2021. This dissertation has not been previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar titles.

S. THANUSH KUMAR

(Reg.No.1913132049019)

Countersigned by



Ms. T. SAROJA

Associate Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the project entitled. **“A SOLVENT FREE SYNTHESIS OF ZINC–BDC METAL ORGANIC FRAMEWORK NANO PARTICLES (MOFNP) AND ITS CHARACTERIZATION”** submitted to the Department of chemistry, **Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **THEJASWINI V (1913132049020)**.



Dr. R.M. EZHILARASI

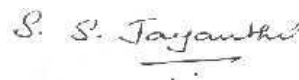
Project Supervisor

Associate Professor & Head

Department of Chemistry

Guru Nanak College

Chennai -600 042



Dr. S.S. JAYANTHI

Assistant Professor

Department of Chemistry

Guru Nanak College

Chennai -600 042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the work entitled “**A SOLVENT FREE SYNTHESIS OF ZINC–BDC METAL ORGANIC FRAMEWORK NANO PARTICLES (MOFNP) AND ITS CHARACTERIZATION**”.”Submitted by me for the award of the degree of the **Master of Science in Chemistry** is a record of original project work done by me in the National Centre for Ultrafast Processes, University of Madras, Taramani Campus, and Chennai-600113. During my period of study (2017-2019) in Guru Nanak College I further declare that the contents of this dissertation report in full or part have not been submitted to any other Institute or University for the award of any degree or diploma.

THEJASWINI V

Countersigned by



Dr. R.M. EZHILARASI

Associate Professor and Head

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600042

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled “SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANOPARTICLES” submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfilment of the requirement for the award of the degree of Master of Science in Chemistry is a record of the original research work done by THIRULOGACHANDHAR G (Reg. No. 1913132049021) in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600 042.



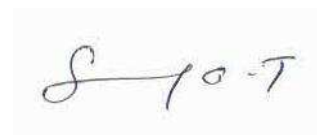
Dr. R. M. EZHILARASI
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Chennai-600 042



MS. E.PRATHIBHA
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Examiner I

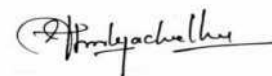


Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that project report entitled “**SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANOPARTICLES**” submitted to the Department of chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfilment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery under the supervision of **Ms.E.PRATHIBHA**, Asst. Professor, Department of Chemistry, Guru Nanak College(Autonomous). This dissertation has not previously formed the basis for the award of any degree, Diploma, Associateship, Fellowship or other similar titles.



(**THIRULOGACHANDHAR.G**)

Countersigned by



Ms.E.PRATHIBHA

Project Supervisor

Asst. Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042

BONAFIDE CERTIFICATE

*This is to certify that this dissertation entitled “Synthesis, Characterization and Photo Catalytic Activity of Rare earth oxide and graphitic carbon nitride based Nanomaterials under UV light irradiation” submitted to **Guru Nanak college** in partial fulfillment of the requirements for the award of **Master of Science in Chemistry** by **Ms.M.Udheyashree (Reg.No1913132049022)** is record of bonafide work done at Chemical Engineering Area, CSIR-Central Leather Research Institute, Adyar, Chennai-600020. This is also certifying that this project work has not formed previously the basis for the award of any degree, associateship or similar titles to this or any other candidates.*



External Guide

Dr. A. Sivasamy Ph.D.,

Chief Scientist,
Chemical Engg. Area,
CSIR-CLRI, Adyar,
Chennai-600020.



Internal guide

Dr. G.Murugan M.Sc.Ph.D.,

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Dept., of Chemistry,
Guru Nanak College
Velachery, Chennai- 600042.

Dr.R.M.EZHILARASI, M.Sc, M.Phil, M.Ed, PhD

Associate professor and Head,
Department of Chemistry,
Guru Nanak College, Chennai -42



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021



CSIR-CENTRAL LEATHER RESEARCH INSTITUTE

(Council of Scientific & Industrial Research)

Sardar Patel Road, Adyar, CHENNAI-600 020. INDIA.

Dr. A. SIVASAMY M.Sc., M.Phil., Ph.D.

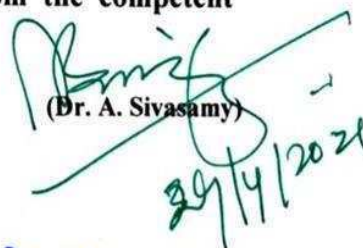
Chief Scientist &

Prof. of Chemical Sciences, AcSIR

CERTIFICATE

*I hereby certify that the dissertation entitled “Synthesis, Characterization and Photo Catalytic Activity of Rare Earth Oxide and Graphitic Carbon Nitride Based Nanomaterials under UV light irradiation” submitted by Ms. Udheyashree. M (Reg. No: 1913132049022) to Guru Nanak College (Autonomous), Chennai- 42 in April-2021, in partial fulfillment of the requirements for the award of the degree of **Master of Science in Chemistry** is the original work carried out by her in the Chemical Engineering Area, CSIR-Central Leather Research Institute, Adyar, Chennai-600 020 under my guidance from Jan.2021 to April, 2021. This is also to certify that this project work has not formed previously the basis for the award of any degree, associate ship or similar titles to this or any other candidates.*

The work reported herein is professional work of CSIR-CLRI and this should not be published without prior permission from the competent authority


(Dr. A. Sivasamy)
29/4/2021


Date : April, 2021

Place : Chennai-600 020

डॉ. ए. शिवसामी Dr. A. SIVASAMY
मुख्य वैज्ञानिक Chief Scientist
रासायनिक अभियांत्रिकी विभाग
Chemical Engineering Department
सीएसआईआर - केन्द्रीय चर्म अनुसंधान संस्थान
CSIR - Central Leather Research Institute
अड्यार, चेन्नई Adyar, Chennai-600 020.

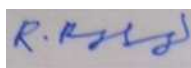
BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled “SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANOPARTICLES” submitted to the Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfilment of the requirement for the award of the degree of Master of Science in Chemistry is a record of the original research work done by VIGNESHWARAN K(Reg. No. 1913132049023) in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery, Chennai-600042.



Dr.R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

Examiner I



Dr.R.RANGASAMY
Project Supervisor
Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

Examiner II



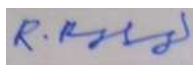
Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that project report entitled “**SYNTHESIS AND CHARACTERISATION OF IRON OXIDE NANOPARTICLES**” submitted to the Department of chemistry, Guru Nanak College (Autonomous) in April 2021, in partial fulfillment of the requirement for the degree of **Master of Science** in chemistry is the original and independent work carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Velachery under the supervision of **Dr.R.RANGASAMY**, Asst. Professor, Department of Chemistry, Guru Nanak College(Autonomous). This dissertation has not previously formed the basis for the award of any degree, Diploma, Associateship, Fellowship or other similar titles.

(**VIGNESHWARAN K**)

Countersigned by



Dr.R.RANGASAMY

Project Supervisor

Asst. Professor

Department of Chemistry

Guru Nanak College (Autonomous)

Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**Enhanced thermal properties of SWCNT/Polyvinyl acetate composites by the introduction of carbon nanotubes**” submitted to the **Department of chemistry, Guru Nanak College (Autonomous)** in partial fulfilment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **VIJAY J RegNo:1913132049024**) in **Department of Chemistry, Guru Nanak College, Chennai – 600042.**



Dr. R. M. EZHILARASI
Associate Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Dr. N. MALARVIZHI
Project guide & Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042



Examiner I



Examiner II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report is the result of investigations carried out by me in the Department of Chemistry, Guru Nanak College (Autonomous), Chennai - 600042, under the supervision of **Dr N. MALARVIZHI**. Assistant Professor, Department of Chemistry, Guru Nanak College, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.

VIJAY J

Countersigned by



Dr.N.Malarvizhi,
Project Supervisor
Asst. Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600 042

BONAFIDE CERTIFICATE

This is to certify that the project entitled “**Polymer-supporred ruthenium(II) complex as a reusable photocatalyst for the visible-light mediated oxidation of thioethers to sulfoxides**” submitted to the **Department of chemistry, Guru Nanak College (Autonomous)** in partial fulfillment of the requirement for the award of the degree of **Master of Science in Chemistry** is a record of the original research work done by **M.VINOTH (Reg.No:1913132049025)** in **Department of Chemistry, Guru Nanak College** under the guidance of **Dr.R.M.Ezhilarasi, Head & Associate Professor, Department of Chemistry** during the academic year 2020-2021.



Dr. R.M.EZHILARASI,

Associate professor & Head

Department of Chemistry

Guru Nanak College(Autonomous),

Chennai-600042.



Dr. A.SRIDHAR,

Assistant Professor,

Department of Chemistry,

Guru Nanak College(Autonomous),

Chennai-600042.



EXAMINER-I



EXAMINER-II

Submitted for the Viva-Voce held on 30/04/2021

DECLARATION

I hereby declare that the matter embodied in this project report, “ **Polymer-supported ruthenium(II) complex as a reusable photocatalyst for the visible-light mediated oxidation of thioethers to sulfoxides**” is the result of investigations carried out by me in **Department of Chemistry, Guru Nanak College** under the supervision of **Dr. R.M.EZHILARASI, Head & Associate Professor** during the academic year 2020-2021, Maintaining the general practice of reporting scientific observations, due acknowledgements have been made wherever the work described is based on the findings of other investigators.

M.VINOTH

Countersigned by:



Dr. R.M.EZHILARASI
Head & Associate Professor
Department of Chemistry
Guru Nanak College

BONAFIDE CERTIFICATE

This is to certify that the thesis entitled “**BIODEGRADABLE POLYMER NANOCOMPOSITES**” submitted by **K.G.YUGHENDIRAN (Reg No:1913132049026)**, Department of Chemistry, Guru Nanak College (Autonomous) in partial fulfilment of the requirements for the award of degree of **MASTER OF SCIENCE** in **CHEMISTRY** is the independent review work carried out by him in the Department of Chemistry, Guru Nanak College (Autonomous), Chennai under my supervision. This thesis has not been previously formed the basis for the award of any degree, diploma, associate ship, fellowship, or any other similar titles.



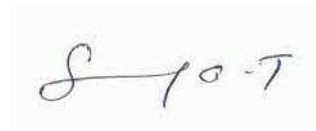
Dr.R.M.EZHILARASI
Asso.Professor & Head
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600042



Dr. B.RAJESWARI
Assistant Professor
Department of Chemistry
Guru Nanak College (Autonomous)
Chennai-600042



Examiner I

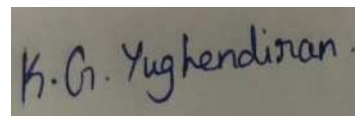


Examiner II

Submitted for the viva voce held on: 30/04/2021

DECLARATION

I hereby declare that review article entitled “**BIODEGRADABLE POLYMER NANOCOMPOSITES**”, submitted to the Department of Chemistry, Guru Nanak College (Autonomous) Chennai, in April 2021, in partial fulfilment of the requirements for the award of degree of **MASTER OF SCIENCE** in **CHEMISTRY** is the independent review work carried out by me in Department of Chemistry, Guru Nanak College (Autonomous), Chennai under the supervision of **Dr.B.RAJESWARI**, Assistant Professor, Department of Chemistry, Guru Nanak College, (Autonomous) Chennai., during the academic year 2020-2021. This review article has not been previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar titles.



K.G. YUGHENDIRAN
(Reg.No.1913132049026)

Countersigned by



Dr. B.RAJESWARI
Assistant Professor
Department of Chemistry
Guru Nanak College
Chennai

**CASE STUDY ON NESTING BEHAVIOUR AND CONSERVATION OF
OLIVE RIDLEY SEA TURTLES (*LEPIDOCHELYS OLIVACEA*) IN
MARINA BEACH.**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
A. AAKASH M. Sc
Reg. No: 1913142077001

Supervisor and Guide
DR. S. VENU, M.Sc., M.Phil., Ph.D.
Assistant Professor



GURUNANAK COLLEGE (AUTONOMOUS)
DEPARTMENT OF ADVANCED ZOOLOGY AND BIOTECHNOLOGY
CHENNAI - 600 042
TAMILNADU, INDIA

MAY-2021



GURUNANAK COLLEGE (AUTONOMOUS)

(Re-Accredited with "A" Grade by NAAC)

VELACHERY, CHENNAI-600 042

Phone: 044-2244 4621/ 2245 1746

Dr. S. Venu,
Assistant Professor,
Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**CASE STUDY ON NESTING BEHAVIOUR AND CONSERVATION OF OLIVE RIDLEY SEA TURTLES (*LEPIDOCHELYS OLIVACEA*) IN MARINA BEACH**" submitted by **Mr. A. Aakash**, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

(S. Venu)

Place : Chennai

Date : 07/06/2021

Supervisor & Guide

Dr. S. VENU, M.Sc., M.Phil., Ph.D.
Assistant Professor
Department of Zoology-(PG)
GURUNANAK COLLEGE, VELACHERY,
CHENNAI-42.

DECLARATION BY THE CANDIDATE

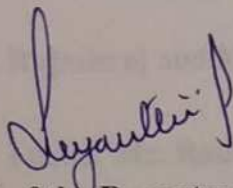
I, **A. Aakash**, hereby declare that the dissertation, entitled “ **CASE STUDY ON NESTING BEHAVIOUR AND CONSERVATION OF OLIVE RIDLEY SEA TURTLES (*LEPIDOCHELYS OLIVACEA*) IN MARINA BEACH** ” submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07/06/2021

A. Aakash

Signature of the Candidate



Head of the Department

Head
Dept of Zoology,
Guru Nanak College,
Chennai-600 042



External Examiner

**HISTOLOGICAL STUDY ON THE HEART AND BRAIN
OF MATURE FEMALE HONG KONG CATFISH
(*CLARIAS FUSCUS*)**

Thesis

Submitted to the

UNIVERSITY OF MADRAS

In partial fulfillment for the award of the degree of

MASTER OF SCIENCE

In

ZOOLOGY

By

ABHISHEK DAS

REG.NO.: 1913142077002

Under the Guidance of

**Dr. J. JAYANTHI, M.Sc., MPhil., Ph.D., F.I.A.E.S., F.I.A.A.B., F.Z.S.I.,
F.S.L.Sc., F.S.A.B., F.I.C.C.B., F.M.S.E.F., PGDESD., M.I.A.S.N.,
Associate Professor & Head**



DEPARTMENT OF ADVANCED ZOOLOGY AND BIOTECHNOLOGY

GURU NANAK COLLEGE (Autonomous)

VELACHERY, CHENNAI-600042

TAMIL NADU, INDIA.

MAY-2021



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(Re-Accredited with "A" Grade by NAAC)

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Phone: 044-2244 4621/ 2245 1746

Dr. J. JAYANTHI,

M.Sc., MPhil., Ph.D., F.I.A.E.S., F.I.A.A.B., F.Z.S.I., F.S.L.Sc., F.S.A.B.,

F.I.C.C.B., F.M.S.E.F., PGDESD., M.I.A.S.N.,

Associate Professor & Head,

PG & Research Department of Advanced Zoology and Biotechnology,

Guru Nanak College (Autonomous),

Chennai-600042

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**HISTOLOGICAL STUDY ON THE HEART AND BRAIN OF MATURE FEMALE HONG KONG CATFISH (*CLARIAS FUSCUS*)**" submitted by **Mr. ABHISHEK DAS**, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 07/06/2021

Signature of Supervisor

(J. JAYANTHI)

DECLARATION BY THE CANDIDATE

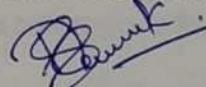
ABHISHEK DAS,
Reg.No:1913142077002,
II Year, M.Sc., Zoology,
PG & Research Department of Advanced Zoology and
Biotechnology,
Guru Nanak College (Autonomous),
Chennai-600042.

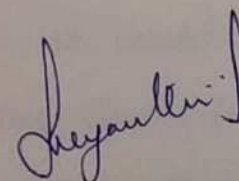
I hereby declare that the thesis entitled **"HISTOLOGICAL STUDY ON THE HEART AND BRAIN OF MATURE FEMALE HONG KONG CATFISH (*CLARIAS FUSCUS*)"**, submitted by me for the award of Master of Science in Zoology is the record of research work carried out during the period of November-2020 to May-2021 under the guidance of **Dr. J. JAYANTHI, M.Sc., M.Phil., Ph.D., F.I.A.E.S., F.I.A.A.B., F.Z.S.I., F.S.L.Sc., F.S.A.B., F.I.C.C.B., F.M.S.E.F., PGDESD., M.I.A.S.N.,** Associate Professor and Head, PG & Research Department of Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous), Chennai-600042, and has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.


Place: Chennai

Date: 07/06/2021

Signature of the Candidate


(ABHISHEK DAS)


Head of Department
Head
Dept of Zoology,
Guru Nanak College,
Chennai-600 042


External Examiner

HISTOLOGICAL STUDY ON THE LIVER OF
HONKONG CATFISH (*clarius fiscus*)

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

Master of Science
In
Zoology

By
S. BINCY REBECCA
Reg. No: 1913142077003

Supervisor and Guide
Dr. M.G. RAGUNATHAN, M.Sc., M.Phil., Ph.D.
Principal



DEPARTMENT OF ADVANCED ZOOLOGY AND BIOTECHNOLOGY
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VELACHERY, CHENNAI - 600 042
TAMILNADU, INDIA

MAY-2021



GURU NANAK COLLEGE (AUTONOMOUS)

(Re-Accredited with "A" Grade by NAAC)

VELACHERY, CHENNAI-600 042

Phone: 044-2244 4621/ 2245 1746

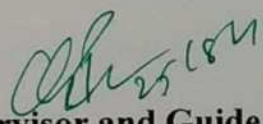
Dr. M.G. RAGUNATHAN,
Principal
Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, HISTOLOGICAL STUDY ON LIVER OF HONKONG CATFISH (*clarius fiscus*) submitted by **Ms. S. BINCY REBECCA**, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 07.06.2021

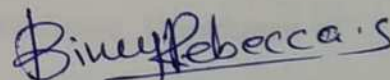

Supervisor and Guide
(M.G. RAGUNATHAN)

DECLARATION BY THE CANDIDATE

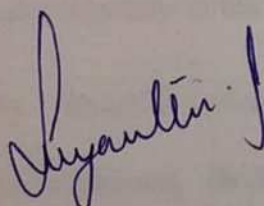
I, S. BINCY REBECCA, hereby declare that the dissertation, entitled HISTOLOGICAL STUDY ON LIVER OF HONKONG CATFISH (*clarius fiscus*)- submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07.06.2021



Signature of the Candidate



Head of Department

Head

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Chennai - 600 042



External Examiner

**HISTOLOGICAL CHARACTERIZATION OF THE
LIVER AND KIDNEY OF JUVENILE ASIAN SEABASS
(*LATES CALCARIFER*)**

Thesis
Submitted to the
University of Madras in
Partial fulfillment for the degree of

**MASTER OF SCIENCE
in
ZOOLOGY**

By

CHIRANJIT SAMADDAR
REG.NO: 1913142077004

Under the Guidance of

**Dr. J. SIVAKUMAR, M.Sc., M. Phil., B.Ed., Ph.D., PGDESD.,
Assistant Professor**



**PG & RESEARCH DEPARTMENT OF ADVANCED ZOOLOGY AND
BIOTECHNOLOGY
GURU NANAK COLLEGE (AUTONOMOUS)
GURU NANAK SALAI, VELACHERY, CHENNAI – 600 042**

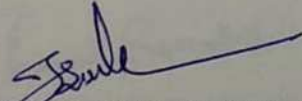
MAY – 2021

CERTIFICATE BY THE SUPERVISOR

Dr. J. SIVAKUMAR, M.Sc., M. Phil., B.Ed., Ph.D., PGDESD.,
Assistant Professor & Head i/c.,
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Chennai – 600 042

I certify that the thesis entitled **“HISTOLOGICAL CHARACTERIZATION OF THE LIVER AND KIDNEY OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)”**, submitted for the Degree of Master of Science in Zoology by **Mr. CHIRANJIT SAMADDAR, Reg. No. 1913142077004**, PG & Research Department of Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous), Chennai – 600 042., is the record of research work carried out by him during the period of November - 2020 to May - 2021 under my guidance and supervision, and that this work has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.

Signature of the Supervisor


(Dr. J. SIVAKUMAR)

Dr. J. SIVAKUMAR
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Velachery, Chennai - 600 042.

DECLARATION BY THE CANDIDATE

CHIRANJIT SAMADDAR, B.Sc.,

Reg. No: 1913142077004,

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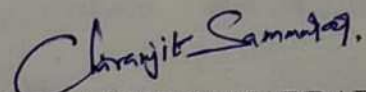
PG & Research Department of Advanced Zoology and Biotechnology,

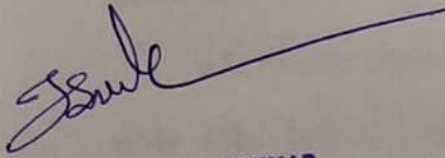
Guru Nanak College (Autonomous),

Chennai – 600 042.

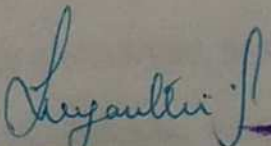
I hereby declare that the thesis entitled **“HISTOLOGICAL CHARACTERIZATION OF THE LIVER AND KIDNEY OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)”**, submitted by me for the award of Master of Science in Zoology is the record of research work carried out during the period of November - 2020 to May - 2021 under the under guidance of **Dr. J. SIVAKUMAR, M.Sc., M.Phil., B.Ed., Ph.D., PGDESD.,** Assistant Professor & Head i/c, PG Department of Zoology, Guru Nanak College (Autonomous), Chennai – 600 042 and has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.

Signature of the Candidate


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Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.



Place: Chennai
Date: 07.06.2021

HISTOLOGICAL CHARACTERIZATION OF AN EYE OF HONG KONG CAT FISH

(*Clarius fiscus*), CLARIUS FISCUS (LACEPEDE, 1803)

DISSERTATION

Submitted to the

UNIVERSITY OF MADRAS

towards partial fulfillment for the award of the Degree of

MASTER OF SCIENCE

IN ZOOLOGY

By

R. DIVYA

(Reg. No: 1913142077005)

Under the guidance of

Dr. M.G.RAGUNATHAN,

**M.Sc., M.Phil., Ph.D., FIAAB, FZSI, FSLSc,
FSAB, FIAES, FICCB, FMSET, FIASN, PGDESD**

PRINCIPAL



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Dr. M.G. RAGUNATHAN,
Principal,
Guru Nanak College.

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, **HISTOLOGICAL CHARACTERIZATION OF AN EYE OF HONG KONG CAT FISH (*CLARIUS FISCUS*)** submitted by **Ms.R.DIVYA**, during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Supervisor & Guide

(M.G.RAGUNATHAN)

Place: Chennai

Date: 07.06.2021



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DECLARATION BY THE CANDIDATE

I, **R. DIVYA**, hereby declare that the dissertation, entitled submitted **HISTOLOGICAL CHARACTERIZATION OF AN EYE OF HONG KONG CAT FISH (*CLARIUS FISCUS*)** for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 04-06-2021

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(Dr. J. Jayanthi)
Head of the Department

External Examiner

Head
Dept of Zoology
Guru Nanak College
Chennai-600 042

**HISTOLOGICAL STUDIES ON THE KIDNEY OF HONG KONG
CAT FISH (*CLARIUS FISCUS*)**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfilment for the award of the Degree of
Master of Science

In
Zoology
By

K. ESTHER ANGEL
Reg. No: 1913142077006

Supervisor and Guide
Dr. M.G.RAGUNATHAN, M.Sc., M.Phil., Ph.D.
Principal



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MAY-2021



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Dr. M.G. RAGUNATHAN,

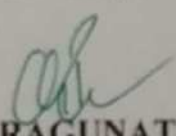
Principal, Guru Nanak college,

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, **HISTOLOGICAL STUDIES ON THE KIDNEY OF HONG KONG CAT FISH (*CLARIUS FISCUS*)** submitted by **Ms. K. ESTHER ANGEL**, during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associateship or fellowship or other similar title period to this.

Place: Chennai

Date: 07.06.2021


(M.G. RAGUNATHAN)

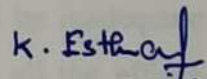
Supervisor & Guide

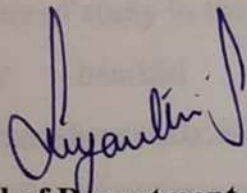
DECLARATION BY THE CANDIDATE

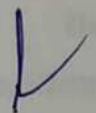
I, **K. ESTHER ANGEL**, hereby declare that the dissertation, entitled **HISTOLOGICAL STUDIES ON THE KIDNEY OF HONG KONG CAT FISH (*CLARIUS FISCUS*)** submitted for the degree of Master of Science, in April 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07.06.2021


Signature of the Candidate


Head of Department
Head
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Chennai-600 042


External Examiner

**A COMPENDIUM OF RECENT (1940-21) LITERATURE ON
THE ENDANGERED GHARIALS (*Gavialis gangeticus*)
PUBLISHED IN INDIAN JOURNALS**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
S. JOSPHINE JULIE
Reg. No: 1913142077007

Supervisor and Guide
Dr. J. JAYANTHI, M.Sc., M.Phil., Ph.D.
Associate Professor & Head



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TAMILNADU, INDIA**

MAY-2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "A COMPENDIUM OF RECENT (1940-21) LITERATURE ON THE ENDANGERED GHARIALS (*Gavialis gangeticus*) PUBLISHED IN INDIAN JOURNALS" is the bonafide work carried out by JOSPHINE JULIE. S (Reg. No.1913142077007), of II. M. Sc., Zoology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide

HEAD

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Chennai - 600 042.



Signature of Project Co-Guide

Asst. Director & Scientist
CHENNAI SNAKE PARK



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.



**STUDIES ON THE PATHOGENCITY OF *AEROMONAS CAVIAE* ON
MURREL (*CHANNA STRIATA*) FRY UNDER LABORATORY
CONDITION, *CHANNA STRIATA* (BLOCH-1793)**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS

in partial fulfillment for the award of the Degree of

Master of Science

In

Zoology

By

S.KARTHICK

Reg. No:1913142077008

Supervisor and Guide

Dr. S. VENU, M.Sc., M.Phil., Ph.D.

Assistant Professor



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TAMILNADU, INDIA**

MAY-2021



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Assistant Professor,

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CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**STUDIES ON THE PATHOGENCITY OF *AEROMONAS CAVIAE* ON MURREL (*CHANNA STRIATA*) FRY UNDER LABORATORY CONDITION, *CHANNA STRIATA* (BLOCH-1793)**" submitted by **Mr.S.KARTHICK**, during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

(Dr.S.Venu)

Date : 07.06.2021

Supervisor & Guide

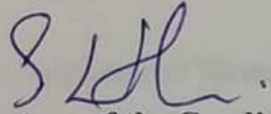
Dr. S. VENU, M.Sc., M.Phil., Ph.D.
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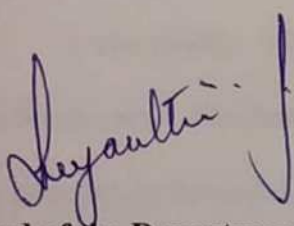
DECLARATION BY THE CANDIDATE


I, S.KARTHICK, hereby declare that the dissertation, entitled “**STUDIES ON THE PATHOGENCITY OF *AEROMONAS CAVIAE* ON MURREL (*CHANNA STRIATA*) FRY UNDER LABORATORY CONDITION, *CHANNA STRIATA* (BLOCH-1793)**” submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07-06-2021


Signature of the Candidate


Head of the Department


External Examiner

HISTOLOGICAL STUDY ON THE GILL AND SWIM
BLADDER OF HONG KONG CATFISH
(CLARIAS FUSCUS)

Dissertation

Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

Master of Science
In
Zoology

By
KUNDAN BASU
Reg. No: 1913142077009

Under the Guidance of
Dr. M.G. RAGUNATHAN, M.Sc., M.Phil., Ph.D., FIAAB, FZSI,
FSLSc, FSAB, FIAES, FICCB, FMSET, FIASN, PGDESD
Principal, Guru Nanak College



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MAY, 2021



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CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, **"HISTOLOGICAL STUDY ON THE
GILL AND SWIM BLADDER OF HONG KONG
CATFISH (*CLARIAS FUSCUS*)"** submitted by **Mr. KUNDAN BASU**, Reg. No.
1913142077009, PG & Research Department of Advanced Zoology and
Biotechnology, Guru Nanak College (Autonomous), Chennai – 600042., during
the period of his study for the degree of Master of Science is the work done under my
supervision and guidance. This dissertation represents the independent work on the
part of the candidate and it has not formed the basis for the award of any degree or
diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 7. 06. 2021

Signature of the Supervisor

(M.G. Ragunathan)

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DECLARATION BY THE CANDIDATE

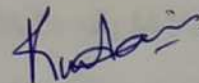
KUNDAN BASU,
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II Year, M.Sc., Zoology
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Guru Nanak College (Autonomous),
Chennai – 600042.

I hereby declare that the thesis entitled “**HISTOLOGICAL STUDY ON THE GILL AND SWIM BLADDER OF HONG KONG CATFISH (*CLARIAS FUSCUS*)**” subtitled by me for the partial fulfillment of **Master of Science in Zoology** is the record of original work carried out by me during the academic year 2019-2021.

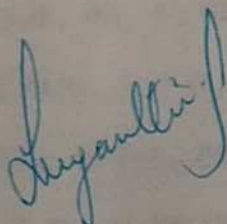
Place: Chennai

Signature of the Candidate

Date: 7.6.2021



(KUNDAN BASU)



Head of Department

HEAD
(Dept. of Adv. Zoology & Biotechnology)
Guru Nanak College,
Chennai - 600 042.



External Examiner



HISTOLOGICAL STUDY ON GONAD OF HONG-KONG CATFISH
(Clarias fuscus)

Thesis

Submitted to the
University of Madras

in partial fulfilment for the Degree of

Master of Science

In

Zoology

By

I NANDHINI, M.Sc.
Reg. No: 1913142077010

Under the Guidance of

Dr. M. G. RAGUNATHAN

M.Sc., M.Phil., Ph.D., FIAAB, FZSI, FSLSc,
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Place : Chennai

Date : 25/08/2021

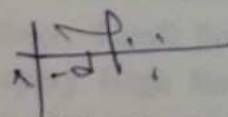

(Dr.MG.RAGUNATHAN)

Supervisor & Guide

DECLARATION BY THE CANDIDATE

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I hereby declare that the thesis entitled “HISTOLOGICAL STUDY ON GONAD OF HONG-KONG CATFISH (*Clarias fuscus*)”, submitted by me for the award of Master of Science in Zoology is the record of research work carried out during the period of November - 2020 to April - 2021 under the guidance of **Dr. M. G. Ragunathan, M.Sc., M.Phil., Ph.D., FIAAB, FZSI, FSLSc, FSAB, FIAES, FICCB, FMSET, FIASN, PGDESD, PG Department of Zoology, Guru Nanak College (Autonomous), Chennai – 600 042** and has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.



Signature of the Candidate

I NANDHINI

**A COMPENDIUM OF RECENT (1940-21) LITERATURE ON
THE ENDANGERED GHARIALS (*Gavialis gangeticus*)
PUBLISHED IN INDIAN JOURNALS**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
NEHA BRAHMA
Reg. No: 1913142077011

Supervisor and Guide
Dr. J.JAYANTHI, M.Sc., M.Phil., Ph.D.
Associate Professor & Head



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MAY-2021

BONAFIDE CERTIFICATE

This is to certify that the project Report entitled "A COMPENDIUM OF RECENT (1940-21) LITERATURE ON THE ENDANGERED GHARIALS (*Gavialis gangeticus*) PUBLISHED IN INDIAN JOURNALS" is the bonafide work carried out by NEHA BRAHMA (Reg. No.1913142077011), of II. M. Sc., Zoology, Guru Nanak College (Autonomous) under my guidance and supervision.



Signature of Project Guide

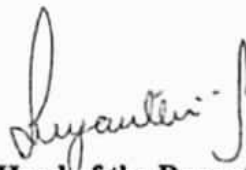
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Dept. of Adv. Zoology & Biotechnology
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Signature of Project Co-Guide

By Director & Scientist
CHENNAI SNAKE PARK



Signature of Head of the Department

HEAD

Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.



**HISTOLOGICAL CHARACTERIZATION OF THE
GILLS AND HEART OF JUVENILE ASIAN SEABASS
(*LATES CALCARIFER*)**

Thesis
Submitted to the
University of Madras in
Partial fulfillment for the degree of

**MASTER OF SCIENCE
in
ZOOLOGY**

By

PRAVEEN RICHARDSON
REG.NO: 1913142077012

Under the Guidance of

Dr. J. SIVAKUMAR, M.Sc., M. Phil., B.Ed., Ph.D., PGDESD.,
Assistant Professor



**PG & RESEARCH DEPARTMENT OF ADVANCED ZOOLOGY AND
BIOTECHNOLOGY
GURU NANAK COLLEGE (AUTONOMOUS)
GURU NANAK SALAI, VELACHERY, CHENNAI – 600 042**

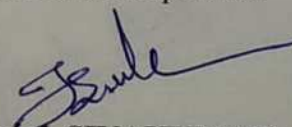
MAY – 2021

CERTIFICATE BY THE SUPERVISOR

Dr. J. SIVAKUMAR, M.Sc., M. Phil., B.Ed., Ph.D., PGDESD.,
Assistant Professor & Head i/c.,
PG Department of Zoology,
Guru Nanak College (Autonomous),
Chennai – 600 042

I certify that the thesis entitled **“HISTOLOGICAL CHARACTERIZATION OF THE GILLS AND HEART OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)”**, submitted for the Degree of Master of Science in Zoology by **Mr. PRAVEEN RICHARDSON, B.Sc., Reg. No. 1913142077012**, PG & Research Department of Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous), Chennai – 600 042., is the record of research work carried out by him during the period of November - 2020 to May - 2021 under my guidance and supervision, and that this work has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.

Signature of the Supervisor



(Dr. J. SIVAKUMAR)

Dr. J. SIVAKUMAR
M.Sc., M.Phil., B.Ed., Ph.D., PGDESD.,
Assistant Professor
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Guru Nanak College (Autonomous)
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DECLARATION BY THE CANDIDATE

PRAVEEN RICHARDSON, B.Sc.,

Reg. No: 1913142077012,

II Year, M.Sc., Zoology,

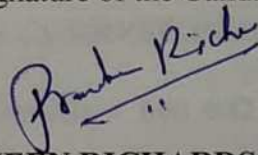
PG & Research Department of Advanced Zoology and Biotechnology,

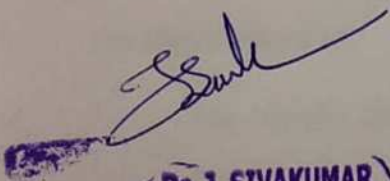
Guru Nanak College (Autonomous),

Chennai – 600 042.

I hereby declare that the thesis entitled **“HISTOLOGICAL CHARACTERIZATION OF THE GILLS AND HEART OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)”**, submitted by me for the award of Master of Science in Zoology is the record of research work carried out during the period of November - 2020 to May - 2021 under the under guidance of **Dr. J. SIVAKUMAR, M.Sc., M.Phil., B.Ed., Ph.D., PGDESD.,** Assistant Professor & Head i/c, PG Department of Zoology, Guru Nanak College (Autonomous), Chennai – 600 042 and has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.

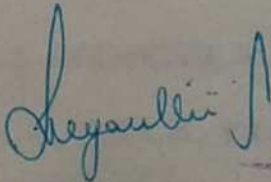
Signature of the Candidate


(PRAVEEN RICHARDSON)


Dr. J. SIVAKUMAR
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Assistant Professor

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Velachery, Chennai - 600 042.

Place: Chennai
Date: 07.06.2021


HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.



**OBSERVATION OF MICROPLASTICS IN THE GASTRO-INTESTINAL
TRACT OF NORTHERN RED SNAPPER (*Lutjanus campechanus*)
COLLECTED FROM PATTINAPAKKAM FISH MARKET.**

Dissertation

Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By

Mr. S. RAJESHRAJ
Reg. No: 1913142077013

Supervisor and Guide

Mr. V.SENTHIL VAIRAVAN, M.Sc., M.Phil., SET.,
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MAY-2021**



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CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**OBSERVATION OF MICROPLASTICS IN THE GASTRO-INTESTINAL TRACT OF NORTHERN RED SNAPPER (*Lutjanus campechanus*) COLLECTED FROM PATTINAPAKKAM FISH MARKET**" submitted by **Mr.S.RAJESHRAJ** during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

For

Place : Chennai

Date : 07-06-2021

(Mr.V.SenthilVairavan)

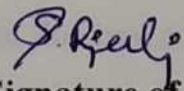
Supervisor & Guide

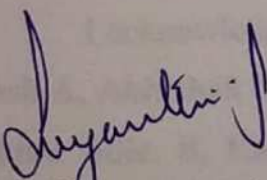
DECLARATION BY THE CANDIDATE

I, RAJESHRAJ, hereby declare that the dissertation, entitled, "**OBSERVATION OF MICROPLASTICS IN THE GASTRO-INTESTINAL TRACT OF NORTHERN RED SNAPPER (*Lutjanus campechanus*) COLLECTED FROM PATTINAPAKKAM FISH MARKET**" submitted for the degree of Master of Science, in April 2021 is the record of my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07-06-2021


Signature of the Candidate


Head of Department
Head
Dept of Zoology,
Guru Nanak College,
Chennai-600 042


External Examiner

**HISTOLOGICAL CHARACTERIZATION OF THE BRAIN AND EYE OF
JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)**

DISSERTATION

Submitted to the

UNIVERSITY OF MADRAS

towards partial fulfillment for the award of the Degree of

MASTER OF SCIENCE

IN ZOOLOGY

By

RUBESH BABU S

(Reg. No: 1913142077014)

Under the guidance of

Dr. J. SIVAKUMAR, M.Sc., M. Phil., B.Ed., Ph.D., PGDESD.,

Assistant Professor



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MAY-2021



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CERTIFICATE FROM THE SUPERVISOR

I certify that the thesis entitled "**HISTOLOGICAL CHARACTERIZATION OF THE BRAIN AND EYE OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)**", submitted for the Degree of Master of Science in Zoology by **Mr.S.RUBESH BABU, Reg.No.1913142077014**, PG & Research Department of Advanced Zoology and Biotechnology, Guru Nanak College (Autonomous), Chennai – 600 042., is the record of research work carried out by him during the period of November - 2020 to MAY - 2021 under my guidance and supervision, and that this work has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.

Place : Chennai

Date : 7.06.2021

Supervisor & Guide

(J. SIVAKUMAR)



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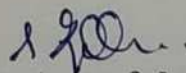
Chennai - 600 042.

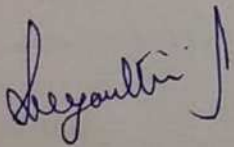
DECLARATION BY THE CANDIDATE

I hereby declare that the thesis entitled "HISTOLOGICAL CHARACTERIZATION OF THE BRAIN AND EYE OF JUVENILE ASIAN SEABASS (*LATES CALCARIFER*)", submitted by me for the award of Master of Science in Zoology is the record of research work carried out during the period of November - 2020 to MAY - 2021 under the under guidance of Dr.J.SIVAKUMAR, M.Sc., M.Phil., B.Ed., Ph.D., PGDESD., Assistant Professor & Head i/c, PG Department of Zoology, Guru Nanak College (Autonomous), Chennai - 600 042 and has not formed the basis for award of any Degree, Diploma, Associate ship, Fellowship or other titles in this University or any other University of higher learning.


Place: Chennai

Date: 07 - 06 - 2021


Signature of the Candidate


Dr.J.JAYANTHI

Head of the Department
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External Examiner

IN-VITRO STUDY OF ANTIFUNGAL PROPERTIES OF VARIOUS PLANT EXTRACTS AGAINST SAPROLEGNIA

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

Master of Science
In
Zoology

By
T. SESA PHANINDRRAA SHARMAA
Reg. No: 1913142077015

Supervisor and Guide
Dr. J.JAYANTHI, M.Sc., M.Phil., Ph.D.
Associate Professor & Head



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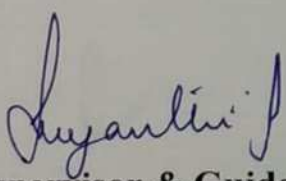
Dr.J.JAYANTHI,
Associate Professor and Head,
Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation *in-vitro study of antifungal properties of various plant extracts against saprolegnia* submitted by *Mr. T. Sesha Phanindraa Sharmaa*, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 07/06/2021


Supervisor & Guide

(J.JAYANTHI)

- Head

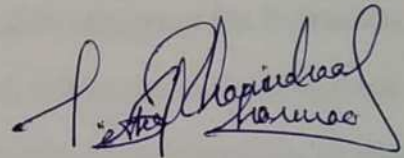
Dept of Zoology
Guru Nanak College
Chenn. - 600 042

DECLARATION BY THE CANDIDATE

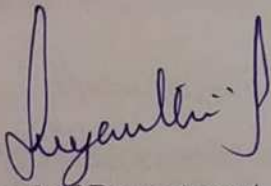
I, T. Sesha Phanindraa Sharmaa, hereby declare that the dissertation, entitled **in-vitro study of antifungal properties of various plant extracts against saprolegnia** submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07/06/2021



Signature of the Candidate



Head of Department
Head
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External Examiner

**STUDIES ON THE PATHOGENICITY OF *EDWARDSIELLA TARDA* ON
MURREL (*CHANNA STRIATA*) FRIES UNDER LABORATORY
CONDITION, *CHANNA STRIATA* (BLOCH, 1793)**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS

In partial fulfilment for the award of the Degree of

**Master of Science
In
Zoology**

**By
SHARMILA J
Reg. No: 1913142077016**

**Supervisor and Guide
Dr. S. VENU, M.Sc., M.Phil., Ph.D.
Assistant Professor**



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TAMILNADU, INDIA**

MAY-2021



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Dr.S.Venu,
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Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**STUDIES ON THE PATHOGENICITY OF EDWARDSIELLA TARDA ON MURREL (CHANNA STRIATA) FRIES UNDER LABORATORY CONDITION, CHANNA STRIATA (BLOCH, 1793)**" submitted by **Ms. J. SHARMILA** during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

(S. Venu)

Place : Chennai

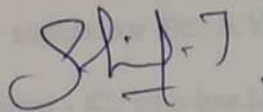
Date : 7.06.2021

Supervisor & Guide
Dr. S. VENU, M.Sc., M.Phil., Ph.D.
Assistant Professor
Department of Zoology-(PG)
GURUNANAK COLLEGE, VELACHERY,
CHENNAI-42.

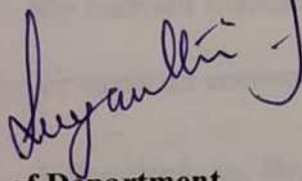
DECLARATION BY THE CANDIDATE

I, **SHARMILA J** hereby declare that the dissertation, entitled "**STUDIES ON THE PATHOGENICITY OF EDWARDSIELLA TARDA ON MURREL (CHANNA STRIATA) FRIES UNDER LABORATORY CONDITION, CHANNA STRIATA (BLOCH, 1793)**" submitted for the degree of Master of Science, in April 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai


Signature of the Candidate

Date: 07.06.2021


Head of Department


External Examiner

**OBSERVATION OF MICROPLASTICS IN THE GASTRO-
INTESTINAL TRACT OF INDIAN MACKEREL COLLECTED
FROM PATTINAPAKKAM FISH MARKET**

Dissertation

Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
Ms. G.SWATHI
Reg. No: 1913142077017

Supervisor and Guide
Mr. V.SENTHIL VAIRAVAN, M.Sc., M.Phil., SET.,
Assistant Professor



**PG AND RESEARCH DEPARTMENT OF ADVANCED ZOOLOGY
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Mr.V.SenthilVairavan,

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CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**OBSERVATION OF MICROPLASTICS IN THE GASTRO-INTESTINAL TRACT OF INDIAN MACKEREL COLLECTED FROM PATTINAPAKKAM FISH MARKET**" submitted by Ms. G. SWATHI during the period of her study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Supervisor and Guide

(Mr.V.Senthil Vairavan)

Place : Chennai

Date : 07/06/2021

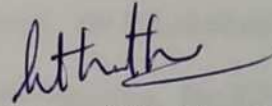
DECLARATION BY THE CANDIDATE

I, G. SWATHI, hereby declare that the dissertation, entitled, "**OBSERVATION OF MICROPLASTICS IN THE GASTRO-INTESTINAL TRACT OF INDIAN MACKEREL COLLECTED FROM PATTINAPAKKAM FISH MARKET**"

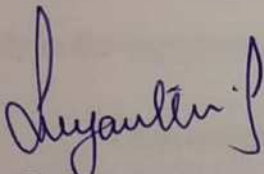
submitted for the degree of Master of Science, in April 2021 is the record of my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: Chennai

Date: 07/06/2021



Signature of the Candidate



Head of Department
Head

Dept of Zoology,
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External Examiner

**STUDIES ON THE PATHOGENICITY OF *AEROMONAS*
SALMONICIDA TO THE MURREL (*CHANNA STRIATA*) FRIES
UNDER LABORATORY CONDITION, *CHANNA STRIATA* (BLOCH,
1793)**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
D.VIKNESHWARAN
Reg. No:1913142077018

Supervisor and Guide
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Associate Professor & Head



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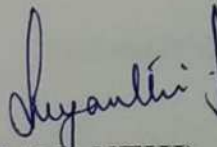
Dr. J.JAYANTHI,
Associate Professor & Head
Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation, "**STUDIES ON THE PATHOGENICITY OF AEROMONAS SALMONICIDA TO THE MURREL (CHANNA STRIATA) FRIES UNDER LABORATORY CONDITION, CHANNA STRIATA (BLOCH, 1793)**" submitted by **Mr. D. VIKNESHWARAN**, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 07/06/2021


(J.JAYANTHI)

Supervisor & Guide
Head

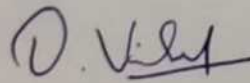
Dept of Zoology,
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Chennai - 600 042

DECLARATION BY THE CANDIDATE

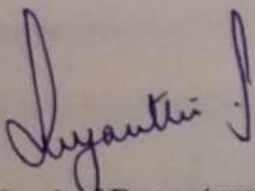
I, **D. VIKNESHWARAN**, hereby declare that the dissertation, entitled "**STUDIES ON PATHOGENICITY OF *AEROMONAS SALMONICIDA* TO THE MURREL (*CHANNA STRIATA*) FRIES UNDER LABORATORY CONDITION, *CHANNA STRIATA*(BLOCH, 1793)" submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.**

Place: Chennai

Date: 07/06/2021



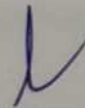
Signature of the Candidate



Head of Department

Head

Dept of Zoology,
Guru Nanak College,
Chennai-600 042



External Examiner

**IN-VITRO STUDY OF ANTIFUNGAL PROPERTIES OF VARIOUS
PLANT EXTRACTS AGAINST ASPERGILLUS**

Dissertation
Submitted to the

UNIVERSITY OF MADRAS
in partial fulfillment for the award of the Degree of

**Master of Science
In
Zoology**

By
AJEESH PRAKASH
Reg. No: 1913142077019

Supervisor and Guide
Dr. J.JAYANTHI, M.Sc., M.Phil., Ph.D.
Associate Professor & Head



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MAY-2021



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Dr.J.JAYANTHI,
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Department of Zoology

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the dissertation **in-vitro study of antifungal properties of various plant extracts against Aspergillus** submitted by **Mr.Ajeesh Prakash**, during the period of his study for the degree of Master of Science is the work done under my supervision and guidance. This dissertation represents the independent work on the part of the candidate and it has not formed the basis for the award of any degree or diploma or associate ship or fellowship or other similar title period to this.

Place : Chennai

Date : 07.06.2021

Supervisor & Guide

(J.JAYANTHI)

HEAD
Dept. of Adv. Zoology & Biotechnology
Guru Nanak College,
Chennai - 600 042.

DECLARATION BY THE CANDIDATE

I, **Ajeesh Prakash** , hereby declare that the dissertation, entitled **in-vitro study of antifungal properties of various plant extracts against Aspergillus** submitted for the degree of Master of Science, in May 2021 is my original work and that it has not been previously submitted for the award of any other degree or diploma.

Place: **Chennai**

Date: **07.06.2021**

Ajeesh Prakash
Signature of the Candidate

Suganthi
Head of Department

↓
External Examiner

HEAD
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