

PRELIMINARY INVESTIGATION OF SEDIMENT  
CHARACTERISTICS PRESENT IN ASHTAMUDI ESTUARY

PROJECT

Submitted To the Christ College Irinjalakuda (Autonomous)

in the Partial Fulfillment

Of requirement for the degree

BACHELOR OF SCIENCE IN GEOLOGY

Session 2023-2024



Submitted by

Govind Binu

CCAVSGL 056

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CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA, KERALA  
(Affiliated to Calicut University and Re-accredited by NAAC with Grade)

# CERTIFICATE

This is to certify that the dissertation titled **Preliminary investigation of sediment characteristics present in Ashtamudi Estuary** is a bonafide project done by Govind Binu at Christ College Irinjalakuda under the guidance of Dr. Sunitha D of Christ College (Autonomous), Irinjalakuda during the period from March 2024 to April 2024.

Dr. Sunitha D  
17/04/24

Dr. Sunitha D

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Dr. Tharun R

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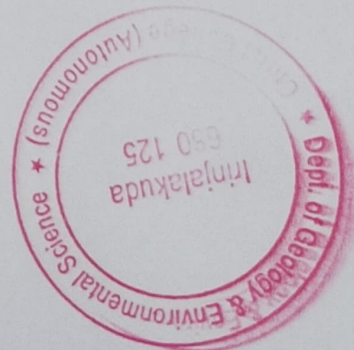
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External Examiner

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# DECLARATION

This is to declare that the dissertation work entitled **Preliminary investigation of sediments characteristics present in Ashtamudi Estuary** is an original work and was carried out by us at Christ College Irinjalakuda under the supervision and guidance of Dr. Sunitha D, (Assistant Professor) of the Department of Geology and Environmental Science Christ College (Autonomous) Irinjalakuda during the period from March 2024 to April 2024. We hereby declare that this is not copied from any source and if any plagiarism has occurred we shall take full responsibility for it.

Place: Irinjalakuda .

Date: 17.04.2024

Name: GOVIND BINU

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**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**

**PROJECT**

Submitted To the Christ College Irinjalakuda (Autonomous)

in the partial fulfilment

of requirement for the degree of

**BACHELOR OF SCIENCE IN GEOLOGY**

2023-2024



Submitted by

Govind Raj

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**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**



**PROJECT**

Submitted To the Christ College Irinjalakuda ( autonomous)

In the partial Fulfilment

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**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA, KERALA**

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Submitted By :

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## CERTIFICATE

This is to certify that the dissertation entitled **A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA** is a work done by Anjan Muraleedharan, K.A. Ashik Arun, Aarcha Chandran, Goyind Raj, Sandra Sanal at Christ College Irinjalakuda under the guidance of Dr. Anto Francis K. of Christ College (Autonomous), Irinjalakuda during the period from June 2023 to March 2024.

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## DECLARATION

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Place :

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PRELIMINARY INVESTIGATION OF SEDIMENT  
CHARACTERISTICS PRESENT IN ASHTAMUDI ESTUARY

PROJECT

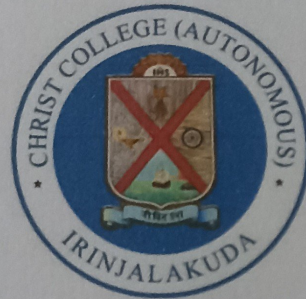
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Session 2023-2024



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Place: Irinjalakuda

Date: 17-4-2024

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**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**

**PROJECT**

Submitted To the Christ College Irinjalakuda (Autonomous)

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2023-2024



Submitted by

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**PROJECT**

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2023-2024

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# **TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By  
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**UNDER THE GUIDANCE OF**

**Mr.Gopakumar P G**

Asst. Professor, Department of Geology and Environmental Science



## **CERTIFICATE**

**This is to certify that the project titled “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is a Bonafede project** work done by **ADHUL SAJEEVP,ARJUN CHANDRAN C,MUHAMMED FAIZ,DEVIKA HAREESH,LAKSHMI P S** at christ college Irinjalakuda under the supervision and guidance of **MrGopakumar PG**, Asst. Prof. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2024. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

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**Mr.Tharun R** Asst. Prof. Department Of  
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Date:

**External Examiner:**

## **DECLARATION**

I hereby declare that the project work entitled, “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is an original work and was carried out by me at Christ College Irinjalakuda under the supervision and guidance of Mr.Gopakumar P P faculty of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

ADHUL SAJEEVP  
ARJUN CHANDRAN C  
MUHAMMED FAIZ  
DEVIKA HAREESH  
LAKSHMI P S

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By MADHAV D NAIR**

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**IN**

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**By MADHAV D NAIR**

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**UNDER THE GUIDANCE OF**

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**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Madhav D Nair** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Madhav D Nair

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

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Asst. Prof. Department Of Geology  
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**Dr. Anto Francis K**

Co-ordinator of department of Geology and  
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Date:

**External Examiner:**

## **DECLARATION**

I hereby declare that the project work entitled, “Determination of Groundwater flow direction using Water table contour maps in Thrissur district” is an original work and was carried out by me at Christ College Irinjalakuda under the joined supervision and guidance of Ms. Ivine Joseph and Ms. Roshini PP, faculties of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

Madhav D Nair

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project report submitted to Christ College (Autonomous), University of Calicut in  
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**BACHELOR OF SCIENCE IN GEOLOGY**



**By SRIYA K R**

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**DETERMINATION OF GROUNDWATER FLOW**

# **DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in partial  
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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By SRIYA K R**

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**UNDER THE GUIDANCE OF**

**Ms. ROSHINI P P**

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## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Sriya K R** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Roshini P P and Ms Ivine Joseph** , Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Sriya K R

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Roshini PP**

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Place: Irinjalakuda

Date:

**External Examiner:**

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Sriya K R

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BACHELOR OF SCIENCE IN GEOLOGY

Session 2023-2024



Submitted by

Abin Johny

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# CERTIFICATE

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Head of the Department

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Date:

External Examiner



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Place: Irinjalakuda  
Date: 17/04/2024

Name: FIBIN JOHNY  
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Petrographical Studies on Sankaridurg and Tiruchengode Granites from  
the Southern Granulite Terrain

**PROJECT**

Submitted To the Christ College Irinjalakuda(Autonomous)

In the partial fulfillment of requirement for degree

**BACHELOR OF SCIENCE IN GEOLOGY**

**Session 2022-2024**



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Petrographical Studies on Sankaridurg and Tiruchengode Granites from  
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**PROJECT**

Submitted To the Christ College Irinjalakuda(Autonomous)

In the partial fulfillment of requirement for degree

**BACHELOR OF SCIENCE IN GEOLOGY**

Session 2022-2024

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## **DECLARATION**

This is to certify that the dissertation titled Petrographical Studies on Sankaridurg and Tiruchengode Granites from the Southern Granulite Terrain is an original work and was carried out by us at Christ College Irinjalakuda under the supervision and guidance of Dr.Sibin Sebastian, Assistant Professor of Geology And Environmental Science Christ College(Autonomous)

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Place:

Name:

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**BACHELOR OF SCIENCE IN GEOLOGY**

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## CERTIFICATE

This is to certify that the dissertation titled Petrographical Studies on Sankaridurg and Tiruchengode Granites from the Southern Granulite Terrain is a bonified project by Ansiya Shaji at Christ College Irinjalakuda under the guidance of Dr.sibin Sebastin of Christ College Irinjalakuda

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**SUBMITTED**

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**BENET BENNY**

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Place:

Name:

Petrographical Studies on Sankaridurg and Tiruchengode Granites from  
the Southern Granulite Terrain

**PROJECT**

Submitted To the Christ College Irinjalakuda(Autonomous)

In the partial fulfillment of requirement for degree

**BACHELOR OF SCIENCE IN GEOLOGY**

**Session 2022-2024**



**SUBMITTED**

**BY**

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Petrographical Studies on Sankaridurg and Tiruchengode Granites from  
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**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL**

**SCIENCE CHRIST COLLEGE (AUTONOMOUS),**

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A<sup>++</sup> grade)

Under the guidance of

Dr.Sibin Sebastian

Assistant Professor

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Submitted by:

Cleftin James

## CERTIFICATE

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Assistant Professor  
Christ College(Autonomous)  
Irinjalakuda

Dr.Anto Francis  
Coordinator, Geology (self)  
Christ College(Autonomous)  
Irinjalakuda

**Date:**

**External Examiner**

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Place:

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# **TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By**

**DEVIKA HAREESH**

**Reg No: CCAVSG L039**

**(2021-2024)**

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**UNDER THE GUIDANCE OF**

**Mr.Gopakumar P G**

Asst. Professor, Department of Geology and Environmental Science

## **CERTIFICATE**

**This is to certify that the project titled “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is a Bonafede project** work done by **ADHUL SAJEEVP,ARJUN CHANDRAN C,MUHAMMED FAIZ,DEVIKA HAREESH,LAKSHMI P S** at christ college Irinjalakuda under the supervision and guidance of **MrGopakumar PG**, Asst. Prof. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2024. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Mr.Gopakumar P G**  
Geology  
Environmental science  
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(Internal Guide Professor)

**Mr.Tharun R** Asst. Prof. Department Of  
Head of the department of and  
Geology and Environmental Science  
Christ College (Autonomous)  
Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**



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I hereby declare that the project work entitled, “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is an original work and was carried out by me at Christ College Irinjalakuda under the supervision and guidance of Mr.Gopakumar P P faculty of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

ADHUL SAJEEVP  
ARJUN CHANDRAN C  
MUHAMMED FAIZ  
DEVIKA HAREESH  
LAKSHMI P S

Petrographical Studies on Sankaridurg and Tiruchengode Granites from the  
Southern Granulite Terrain

**PROJECT**

Submitted To the Christ College Irinjalakuda(Autonomous)

In the partial fulfillment of requirement for degree

**BACHELOR OF SCIENCE IN GEOLOGY**

**Session 2022-2024**



**SUBMITTED BY**

**GANGA AJAYAGHOSH**

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## PROJECT

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## BACHELOR OF SCIENCE IN GEOLOGY

Session 2022-2024

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## CERTIFICATE

This is to certify that the dissertation titled Petrographical Studies on Sankaridurg and Tiruchengode Granites from the Southern Granulite Terrain is a bonified project by Ganga Ajayaghosh at Christ College Irinjalakuda under the guidance of

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**External Examiner**

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Irinjalakuda during the period from April 2023 to May 2023. We hereby declare that this is not copied from any source and if any plagiarism has occurred we shall take full responsibility for it.

Place:

Name:

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By NAVEENA GRACE**

**Reg No: CCAVSGL041 (2021-2024)**

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fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



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**UNDER THE GUIDANCE OF**

**Ms. IVINE JOSEPH**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **LJ Naveena Grace** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Sriya K R

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Ivine Joseph**

Asst. Prof. Department Of Geology

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**Dr. Anto Francis K**

Co-ordinator of department of Geology and

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Christ College (Autonomous)

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Place: Irinjalakuda

Date:

**External Examiner:**



## **DECLARATION**

I hereby declare that the project work entitled, “Determination of Groundwater flow direction using Water table contour maps in Thrissur district” is an original work and was carried out by me at Christ College Irinjalakuda under the joined supervision and guidance of Ms. Ivine Joseph and Ms. Roshini PP, faculties of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

LJ Naveena Grace

**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**

**PROJECT**

Submitted To the Christ College Irinjalakuda (Autonomous)

in the partial fulfilment

of requirement for the degree of

**BACHELOR OF SCIENCE IN GEOLOGY**

2023-2024



Submitted by

Sandra Sanal

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**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**



**PROJECT**

Submitted To the Christ College Irinjalakuda ( autonomous)

In the partial Fulfilment

Of requirement for the degree

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2023-2024

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Submitted By :

Sandra Sanal

## CERTIFICATE

This is to certify that the dissertation entitled **A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA** is a work done by Anjan Muraleedharan, K.A. Ashik Arun, Aarcha Chandran, Goyind Raj, Sandra Sanal at Christ College Irinjalakuda under the guidance of Dr. Anto Francis K. of Christ College (Autonomous), Irinjalakuda during the period from June 2023 to March 2024.

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Head of Department (Self)  
Christ College ( Autonomous)  
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Dr. Anto Francis K.  
Head of the Department  
Christ college (Autonomous)  
Irinjalakuda

Date :

External Examiner

## DECLARATION

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Place :

Name : Sandra Sanal

Date :

Register no : CCCAVSGL042

**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**

**PROJECT**

Submitted To the Christ College Irinjalakuda (Autonomous)

in the partial fulfilment

of requirement for the degree of

**BACHELOR OF SCIENCE IN GEOLOGY**

2023-2024



Submitted by

Anjan Muraleedharan

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(Affiliated to Calicut University and Re-accredited by NAAC with A++ Grade)

**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**



**PROJECT**

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**BACHELOR OF SCIENCE IN GEOLOGY**

2023-2024

**DEPARTMENT OF GEOLOGY (SELF)**

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Submitted By :

Anjan Muraliedharan

## CERTIFICATE

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Dr. Anto Francis K.  
Head of Department (Self)  
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Dr. Anto Francis K.  
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Date :

External Examiner



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Place :

Name : Anjan Muralleedharan

Date :

Register no : CCAVSGLO43

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By KIRAN R S**

**Reg No: CCAVSGL044 (2021-2024)**

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**BACHELOR OF SCIENCE**

**IN**

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**UNDER THE GUIDANCE OF**

**Ms. ROSHINI P P**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Kiran R S** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Roshini P P and Ms Ivine Joseph** , Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Kiran R S

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Roshini PP**

Asst. Prof. Department Of Geology  
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(Internal Guide Professor)

**Dr. Anto Francis K**

Co-ordinator of department of Geology and  
Geology and Environmental Science

Christ College (Autonomous)  
Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

## **DECLARATION**

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Kiran R S

# **TEXTURAL CHARACTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

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**By**

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**UNDER THE GUIDANCE OF**

**Mr.Gopakumar P G**

Asst. Professor, Department of Geology and Environmental Science

## **CERTIFICATE**

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Signature of project in charge

**Mr.Gopakumar P G**  
Geology  
Environmental science  
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**Mr.Tharun R** Asst. Prof. Department Of  
Head of the department of and  
Geology and Environmental Science  
Christ College (Autonomous)  
Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**



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ADHUL SAJEEVP  
ARJUN CHANDRAN C  
MUHAMMED FAIZ  
DEVIKA HAREESH  
LAKSHMI P S

**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**

**PROJECT**

Submitted To the Christ College Irinjalakuda (Autonomous)

in the partial fulfilment

of requirement for the degree of

**BACHELOR OF SCIENCE IN GEOLOGY**

2023-2024



Submitted by

Aarcha Chandran

CCAVSGL046

DEPARTMENT OF GEOLOGY (SELF)

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**A PRELIMINARY PETROGRAPHIC STUDY OF THREE DYKES FROM THRISSUR DISTRICT, KERALA**



**PROJECT**

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2023-2024

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Submitted By :

Aarcha Chandran

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Dr. Anto Francis K.  
Head of Department (Self)  
Christ College ( Autonomous)  
Irinjalakuda

Dr. Anto Francis K.  
Head of the Department  
Christ college (Autonomous)  
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Date :

External Examiner

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Date :

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# **TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By**

**ADHUL SAJEEV P**

**Reg No: CCAVSGL047**

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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By**

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**UNDER THE GUIDANCE OF**

**Mr.Gopakumar P G**

Asst. Professor, Department of Geology and Environmental Science

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Signature of project in charge

**Mr.Gopakumar P G**

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Christ College (Autonomous)

Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**



## **DECLARATION**

I hereby declare that the project work entitled, “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is an original work and was carried out by me at Christ College Irinjalakuda under the supervision and guidance of Mr.Gopakumar P P faculty of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

ADHUL SAJEEVP  
ARJUN CHANDRAN C  
MUHAMMED FAIZ  
DEVIKA HAREESH  
LAKSHMI P S

PRELIMINARY INVESTIGATION OF SEDIMENT  
CHARACTERISTICS PRESENT IN ASHTAMUDI ESTUARY

PROJECT

Submitted To the Christ College Irinjalakuda (Autonomous)

in the Partial Fulfillment

Of requirement for the degree

BACHELOR OF SCIENCE IN GEOLOGY

Session 2023-2024



Submitted by

Ananthu Krishna KJ

CCAVSGL 049

DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE

CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA, KERALA

(Affiliated to Calicut University and Re-accredited by NAAC with Grade)

# CERTIFICATE

This is to certify that the dissertation titled **Preliminary investigation of sediment characteristics present in Ashtamudi Estuary** is a bonafide project done by Ananthu Krishna KJ at Christ College Irinjalakuda under the guidance of Dr. Sunitha D of Christ College (Autonomous), Irinjalakuda during the period from March 2024 to April 2024.

Prof, *Sunitha D*  
13/04/24

Dr. Sunitha D

Assistant Professor

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*Tharun R*  
17/04/24

Dr. Tharun R

Head of the Department

Christ College(Autonomous)

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Date:

*Harsh*  
External Examiner



## DECLARATION

This is to declare that the dissertation work entitled **Preliminary investigation of sediments characteristics present in Ashtamudi Estuary** is an original work and was canied out by us at Christ College Irinjalakuda under the supervision and guidance of Dr. Sunitha D,(Assistant Professor) of the Department of Geology and Environmental Science Christ College(Autonomous) Irinjalakuda during the period from March2024 to April 2024. We hereby declare that this is not copied from any source and if any plagiarism has occurred we shall take full responsibility for it.

Place: *Irinjalakuda*  
Date: *17-04-2024*

Name: *Ananthu Krishna K.J.*  
Register  
no: *CCAVS012049.*

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By ANOOP DIVAKARAN**

Reg No: **CCAVSGL050 (2021-2024)**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE  
CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA, KERALA,  
680125**

*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By ANOOP DIVAKARAN**

**Reg No: CCAVSGL050 (2021-2024)**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE**  
**CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA, KERALA, 680125**  
*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

**UNDER THE GUIDANCE OF**

**Ms. IVINE JOSEPH**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Anoop Divakaran** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Anoop Divakaran

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Ivine Joseph**

Asst. Prof. Department Of Geology  
Environmental science

Christ College (Autonomous)  
Irinjalakuda, Kerala-680125  
(Internal Guide Professor)

**Dr. Anto Francis K**

Co-ordinator of department of Geology and  
Geology and Environmental Science

Christ College (Autonomous)  
Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

## **DECLARATION**

I hereby declare that the project work entitled, “Determination of Groundwater flow direction using Water table contour maps in Thrissur district” is an original work and was carried out by me at Christ College Irinjalakuda under the joined supervision and guidance of Ms. Ivine Joseph and Ms. Roshini PP, faculties of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

Anoop Divakaran



# **TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By**

**ARJUN CHANDRAN C**

Reg No: CCAVSGL051

**(2021-2024)**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE  
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680125**

*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

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project report submitted to Christ College (Autonomous), University of Calicut in partial  
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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By**

**ARJUN CHANDRAN C**

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*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

**UNDER THE GUIDANCE OF**

**Mr.Gopakumar P G**

Asst. Professor, Department of Geology and Environmental Science

## **CERTIFICATE**

**This is to certify that the project titled “TEXTURAL CHARECTERISTICS OF AVITTATHUR WETLANDS ,THRISSUR DISTRICT” is a Bonafede project** work done by **ADHUL SAJEEVP,ARJUN CHANDRAN C,MUHAMMED FAIZ,DEVIKA HAREESH,LAKSHMI P S** at christ college Irinjalakuda under the supervision and guidance of **MrGopakumar PG**, Asst. Prof. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2024. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Mr.Gopakumar P G**

Geology

Environmental science

Christ College (Autonomous)

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(Internal Guide Professor)

**Mr.Tharun R** Asst. Prof. Department Of  
Head of the department of and

Geology and Environmental Science

Christ College (Autonomous)

Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

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ADHUL SAJEEVP  
ARJUN CHANDRAN C  
MUHAMMED FAIZ  
DEVIKA HAREESH  
LAKSHMI P S

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By AROMAL P M**

**Reg No: CCAVSGL052 (2021-2024)**

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680125**

*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

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**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By AROMAL P M**

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**UNDER THE GUIDANCE OF**

**Ms. IVINE JOSEPH**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Aromal P M** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomous) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Aromal P M

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Ivine Joseph**

Asst. Prof. Department Of Geology

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Irinjalakuda, Kerala-680125

(Internal Guide Professor)

**Dr. Anto Francis K**

Co-ordinator of department of Geology and

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Christ College (Autonomous)

Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

## **DECLARATION**

I hereby declare that the project work entitled, “Determination of Groundwater flow direction using Water table contour maps in Thrissur district” is an original work and was carried out by me at Christ College Irinjalakuda under the joined supervision and guidance of Ms. Ivine Joseph and Ms. Roshini PP, faculties of Dept. of Geology and Environmental Science Christ College (Autonomous), Irinjalakuda during the period April-May 2024.

Aromal P M



# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
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**BACHELOR OF SCIENCE IN GEOLOGY**



**By ATHUL V R**

**Reg No: CCAVSGL053 (2021-2024)**

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**By ATHUL V R**

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**UNDER THE GUIDANCE OF**

**Ms. IVINE JOSEPH**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Athul V R** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Athul V R

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Ivine Joseph**

Asst. Prof. Department Of Geology

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Irinjalakuda, Kerala-680125

(Internal Guide Professor)

**Dr. Anto Francis K**

Co-ordinator of department of Geology and

Geology and Environmental Science

Christ College (Autonomous)

Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

## **DECLARATION**

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Athul V R

# **DETERMINATION OF GROUNDWATER FLOW DIRECTION USING WATER TABLE CONTOUR MAP, THRISSUR DISTRICT**

project report submitted to Christ College (Autonomous), University of Calicut in  
partial fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE IN GEOLOGY**



**By FATHIMA SHAN**

**Reg No: CCAVSGL054 (2021-2024)**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE  
CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA, KERALA,  
680125**

*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

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project report submitted to Christ College (Autonomous), University of Calicut in partial  
fulfilment of requirements for the award of degree in

**BACHELOR OF SCIENCE**

**IN**

**GEOLOGY**



**By FATHIMA SHAN**

**Reg No: CCAVSGL054 (2021-2024)**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE  
CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA, KERALA, 680125**

*(Affiliated to University of Calicut and re-accredited by NAAC with A++ grade)*

**UNDER THE GUIDANCE OF**

**Ms. IVINE JOSEPH**

**Asst. Professor, Department of Geology and Environmental Science**

## **CERTIFICATE**

This is to certify that the project titled “**Determination of Groundwater flow direction using water table contour map, Thrissur district.**” is a Bonafede project work done by **Fathima Shan** at christ college Irinjalakuda under the joined supervision and guidance of **Ms Ivine Joseph and Ms Roshini P P**, Asst. Profs. Department of Geology and Environmental Science, Christ College (Autonomus) Irinjalakuda, during the period April-May 2023. In partial fulfillment of the requirement for the award of the degree of bachelor of science in Geology is an authentic record of my work. The matter embedded in this project has not been submitted for any other degree

Fathima Shan

It is to certified that the above statement made by the candidates is true to the best of any knowledge.

Signature of project in charge

**Ms.Ivine Joseph**

Asst. Prof. Department Of Geology

Environmental science

Christ College (Autonomous)

Irinjalakuda, Kerala-680125

(Internal Guide Professor)

**Dr. Anto Francis K**

Co-ordinator of department of Geology and

Geology and Environmental Science

Christ College (Autonomous)

Irinjhalakkuda, Kerala-680125

Place: Irinjalakuda

Date:

**External Examiner:**

## **DECLARATION**

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Fathima Shan



**PRELIMINARY INVESTIGATION OF SEDIMENT  
CHARACTERISTICS PRESENT IN ASHTAMUDI ESTUARY**

**PROJECT**

**Submitted To the Christ College Irinjalakuda (Autonomous)**

**in the Partial Fulfillment**

**Of requirement for the degree**

**BACHELOR OF SCIENCE IN GEOLOGY**

**Session 2023-2024**



**Submitted by**

**Gouri Madhav**

**CCAVSGL 055**

**DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE**

**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA, KERALA**

**(Affiliated to Calicut University and Re-accredited by NAAC with Grade)**

## CERTIFICATE

This is to certify that the dissertation titled **Preliminary investigation of sediment characteristics present in Ashtamudi Estuary** is a bonafide project done by Gouri Madhav at Christ College Irinjalakuda under the guidance of Dr. Sunitha D of Christ College (Autonomous), Irinjalakuda during the period from March 2024 to April 2024.

For, *Sunitha D*  
17/04/24

Dr. Sunitha D

Assistant Professor

Christ College(Autonomous)

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*Tharun R*  
17/04/24  
Dr. Tharun R

Head of the Department

Christ College(Autonomous)

Irinjalakuda

Date:

External Examiner *[Signature]*



## DECLARATION

This is to declare that the dissertation work entitled **Preliminary investigation of sediments characteristics present in Ashtamudi Estuary** is an original work and was carried out by us at Christ College Irinjalakuda under the supervision and guidance of Dr. Sunitha D, (Assistant Professor) of the Department of Geology and Environmental Science Christ College (Autonomous) Irinjalakuda during the period from March 2024 to April 2024. We hereby declare that this is not copied from any source and if any plagiarism has occurred we shall take full responsibility for it.

Place: Irinjalakuda.

Date: 17/04/24

Name: GOURIMADHAY

Register

no: CCAVSGIL055