

A STUDY ON FUZZY TRANSPORTATION PROBLEM AND FUZZY APPLICATIONS

A project submitted to Madurai Kamaraj University in Partial fulfilment of the
requirement for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

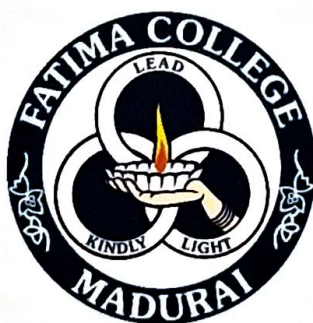
2020M03	G AMEER NISA
2020M16	B DIVYA
2020M24	M KAVINAYA
2020M35	J NANCY JERLIN
2020M45	G SHALINI
2020M55	JKJ TAMILSELVI

Under the Guidance of

Mrs. A. Sheela Roselin M.Sc., B.Ed., M.Phil., (Ph.D.)

Assistant professor,

Department of Mathematics



Fatima College [Autonomous]

Re-Accredited with 'A++' by NAAC (Cycle-4)

Mary Land, Madurai-625018, Tamil Nadu.

APRIL 2023

Mrs. A. Sheela Roselin M.Sc., B.Ed., M.Phil., (Ph.D.)

Assistant Professor

Department of Mathematics

Fatima College

Madurai -625 018.


CERTIFICATE


This to certify that the project entitled, "**A STUDY ON FUZZY TRANSPORTATION PROBLEM AND FUZZY APPLICATIONS**" submitted by the following students for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.

G AMEER NISA	2020M03
B DIVYA	2020M16
M KAVINAYA	2020M24
J NANCY JERLIN	2020M35
G SHALINI	2020M45
J.K.J TAMILSELVI	2020M55

Place: Madurai

Date: 11.4.23


SIGNATURE OF
INTERNAL EXAMINER


SIGNATURE OF
EXTERNAL EXAMINER


SIGNATURE OF THE

HEAD OF THE DEPARTMENT


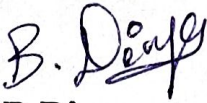
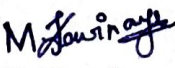

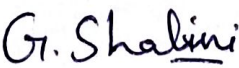
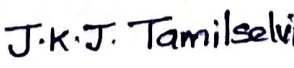
Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

We **G Ameer Nisa (2020M03)**, **B Divya (2020M16)**, **M Kavinaaya (2020M24)** **J Nancy Jerlin (2020M35)**, **G Shalini (2020M45)**, **JKJ Tamilselvi (2020M55)** do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of **Mrs. A. Sheela Roselin M.Sc., B.Ed., M.Phil., (Ph.D.)** Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of the degree of **Bachelor of Science in Mathematics**.

Place: Madurai

Date: 11.04.2023

 G Ameer Nisa	2020M03
 B Divya	2020M16
 M Kavinaaya	2020M24
 J Nancy Jerlin	2020M35
 G Shalini	2020M45
 J.K.J Tamilselvi	2020M55

A STUDY ON CODING AND DECODING IN CRYPTOGRAPHY

A project work submitted to Madurai Kamaraj University in partial fulfilment of the requirements for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

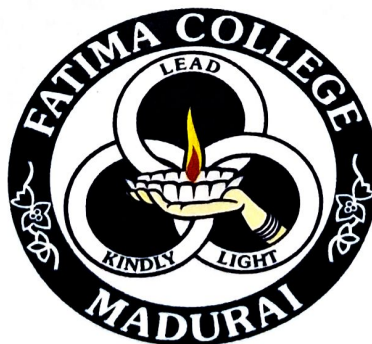
2020M05	APARNA R
2020M17	FERMI LEON S
2020M25	KAVYADHARSHNI R
2020M37	PIONISH J
2020M47	SHANMUGAPRIYA R
2020M56	TAMIL SUDAR D

Under the Guidance of

Dr. C. PRASANNA DEVI M.Sc., M.Phil., Ph.D.

Assistant Professor

Department of Mathematics



FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' by NAAC (Cycle-4)

Mary Land, Madurai – 625018, Tamil Nadu

April 2023

Dr. C. PRASANNA DEVI M.Sc., M. Phil., Ph. D.

Assistant Professor

Department of Mathematics

Fatima College (Autonomous)

Madurai - 625018.

CERTIFICATE

This to certify that the project entitled, “**A STUDY ON CODING AND DECODING IN CRYPTOGRAPHY**” submitted by the following students, for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.

APARNA R	2020M05
FERMI LEON S	2020M17
KAVYADHARSHNI R	2020M25
PIONISH J	2020M37
SHANMUGAPRIYA R	2020M47
TAMIL SUDAR D	2020M56

Place: Madurai

Date: 11.4.23



**SIGNATURE OF THE
INTERNAL EXAMINER**



**SIGNATURE OF THE
EXTERNAL EXAMINER**



**SIGNATURE OF THE
HEAD OF THE DEPARTMENT**


Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

We APARNA R (2020M05), FERMI LEON S (2020M17), KAVYADHARSHNI R (2020M25), PIONISH J (2020M37), SHANMUGAPRIYA R (2020M47), TAMILSUDAR D (2020M56) do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of Dr. C. PRASANNA DEVI M.Sc., M.Phil., Ph.D., Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of degree of Bachelor of Science in Mathematics.

Date: 11.04.2023

Place: Madurai



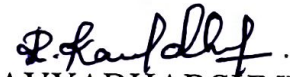
APARNA R

2020M05



FERMI LEON S

2020M17



KAVYADHARSHNI R

2020M25



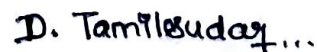
PIONISH J

2020M37



SHANMUGAPRIYA R

2020M47



TAMIL SUDAR D

2020M56

ASTUDY ON CONFLUENT HYPERGEOMETRIC FUNCTION

A project work submitted to Madurai Kamaraj University in partial fulfilment of the requirements
for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

2020M06 AROCKIA JENIFER A

2020M18 GOKILA J

2020M26 LAVANYA R

2020M38 PRAVEENA V

2020M48 SHARMILA S

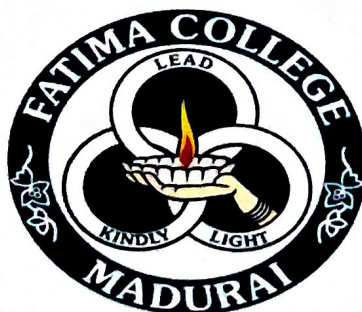
2020M57 THIRZA G

Under the Guidance of

Mrs. M. TERESA NIRMALA M.Sc., M.Phil., (Ph.D.)

Assistant Professor

Department of Mathematics



FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' by NAAC (Cycle-4)

Mary Land, Madurai – 625018, Tamil Nadu

April 2023

Mrs. M. TERESA NIRMALA M.Sc., M.Phil., (Ph.D.)

Assistant Professor

Department of Mathematics

Fatima College

Madurai-625018.

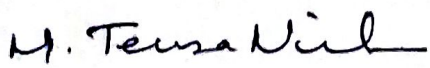
CERTIFICATE


This to certify that the project entitled, "A STUDY ON CONFLUENT HYPERGEOMETRIC FUNCTION" submitted by the following students for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.


AROCKIA JENIFER A	2020M06
GOKILA J	2020M18
LAVANYA R	2020M26
PRAVEENA V	2020M38
SHARMILA S	2020M48
THIRZA G	2020M57

Place: Madurai

Date: 11.04.2023


**SIGNATURE OF THE
INTERNAL EXAMINER**


**SIGNATURE OF THE
EXTERNAL EXAMINER**


**SIGNATURE OF THE
HEAD OF THE DEPARTMENT**

Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

We **Arockia Jenifer A (2020M06), Gokila J (2020M18), Lavanya R (2020M26), Praveena V (2020M38), Sharmila S (2020M48), Thirza G (2020M57)** do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of **Mrs. M. Teresa Nirmala M.Sc., M.Phil., (Ph.D.)** Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of the degree of **Bachelor of Science in Mathematics**.

Date: 11.04.2023

Station: Madurai

A. Arockia Jenifer

AROCKIA JENIFER A 2020M06

J. Gokila

GOKILA J 2020M18

R. Lavanya

LAVANYA R 2020M26

v. praveena

PRAVEENA V 2020M38

Sharmila .s

SHARMILA S 2020M48

G. Thirza

THIRZA G 2020M57

A STUDY ON EULER LAGRANGE EQUATION IN CALCULUS OF VARIATIONS

A project work submitted to Madurai Kamaraj University in partial fulfilment of the
requirements for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

2020M07 A. ARUL REETA
2020M19 S. GOWRI
2020M27 S. LAVANYA
2020M40 S. PRIYADHARSINI
2020M49 G. SHWEATHA
2020M58 A.S. VILSHA JERCHINI

Under the Guidance of

Dr. V. VANITHA M.Sc., M. Phil., B.Ed., ACIM., SET., Ph.D.

Assistant Professor

Department of Mathematics



FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' by NAAC (Cycle-4)

Mary Land, Madurai – 625018, Tamil Nadu

April 2023

Dr. V. Vanitha M.Sc., M. Phil., B.Ed., ACIM., SET., Ph.D.

Assistant Professor

Department of Mathematics

Fatima College (Autonomous)

Madurai – 625018.

CERTIFICATE


This to certify that the project entitled, “**A STUDY ON EULER LAGRANGE EQUATION IN CALCULUS OF VARIANTS**” submitted by the following students for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.

ARUL REETA A	2020M07
GOWRI S	2020M19
LAVANYA S	2020M27
PRIYADHARSINI S	2020M40
SHWEATHA G	2020M49
VILSHA JERCHINI A S	2020M58

Place: Madurai

Date: 11. 4. 23


**SIGNATURE OF THE
INTERNAL EXAMINER**


**SIGNATURE OF THE
EXTERNAL EXAMINER**


**SIGNATURE OF THE
HEAD OF THE DEPARTMENT**

Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

We A. ARUL REETA (2020M07) , S. GOWRI (2020M19), S. LAVANYA (2020M27), S. PRIYADHARSINI (2020M40), G. SHWEATHA (2020M49), A.S. VILSHA JERCHINI (2020M58) do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of Dr. V. VANITHA M.Sc., M. Phil., B.Ed., ACIM., SET., Ph.D. Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of the degree of Bachelor of Science in Mathematics.

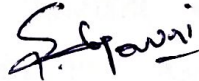
Date: 11.04.2023

Station: Madurai



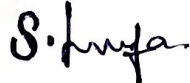
A. ARUL REETA

- 2020M07



S. GOWRI

- 2020M19



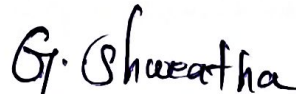
S. LAVANYA

- 2020M27



S. PRIYADHARSINI

- 2020M40



G. SHWEATHA

- 2020M49



A.S. VILSHA JERCHI

- 2020M58

A STUDY ON BINARY GROUP CODES IN CODING THEORY

A project work submitted to Madurai Kamaraj University in partial fulfilment of the requirements for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

2020M08	ASMATH S
2020M20	HARINI P
2020M30	LOKHAVARSHNI S
2020M41	RAJARAJESWARI B
2020M50	SOWMIYA K
2020M60	FATHIMA M

Under the Guidance of

Dr. K. AMUTHA M.Sc., M.Phil., B.Ed., Ph.D.

Assistant Professor

Department of Mathematics



FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' by NAAC (Cycle-4)

Mary Land, Madurai – 625018, Tamil Nadu

April 2023

Dr. K.AMUTHA M.Sc., M. Phil., B.Ed., Ph. D.

Assistant Professor

Department of Mathematics

Fatima College

Madurai-625 018.


CERTIFICATE

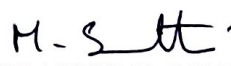
This to certify that the project entitled, "A STUDY ON BINARY GROUP CODES IN CODING THEORY" submitted by the following students for the award of the degree of Bachelor's of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.


ASMATH S	2020M08
HARINI P	2020M20
LOKHAVARSHINI S	2020M30
RAJARAJESWARI B	2020M41
SOWMIYA K	2020M50
FATHIMA M	2020M60

Place: Madurai

Date: 11.04.2023


SIGNATURE OF THE
INTERNAL EXAMINER


SIGNATURE OF THE
EXAMINAR EXAMINER


SIGNATURE OF THE
HEAD OF THE DEPARTMENT


Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

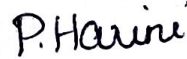
We Asmath S (2020M08), Harini P (2020M20), Lokhavarshini S (2020M30), Rajarajeswari B (2020M41), Sowmiya K (2020M50), Fathima M (2020M60) do hereby declare that this project work is a bonafide record of work carried out by us under the guidance and supervision of Dr. K. AMUTHA M.Sc., M.Phil., B.Ed., Ph.D. Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfillment for the award of degree of **Bachelor of Science in Mathematics**.

Date: 11. 04. 2023

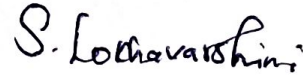
Station: Madurai



ASMATH S - 2020M08



HARINI P - 2020M20



LOKHAVARSHINI S - 2020M30



RAJARAJESWARI B - 2020M41



SOWMIYA K - 2020M50



FATHIMA M - 2020M60

A STUDY ON APPLICATIONS OF GRAPH THEORY

A Project work submitted to Madurai Kamaraj University in Partial fulfilment
of the requirements for the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

2020M10 CATHERIN HARINI A

2020M21 JENOPHIYA J

2020M31 MANISHA A

2020M42 REETHI SHARON J

2020M51 SWATHI R

2020M61 SANDHYA A

2020M64 SUNANTHA D M

Under the Guidance of

Dr. M.V.Sethu Meenakshi M.Sc., B.Ed., Ph.D.

Assistant Professor,

Department Of Mathematics.



FATIMA COLLEGE (AUTONOMOUS)

Re – Accredited with 'A++' by NAAC (4th Cycle)

Maryland, Madurai - 625018, Tamil Nadu

April 2023.

Dr.M.V.SETHU MEENAKSHI M.Sc., B.Ed., Ph.D.

Assistant Professor

Department of Mathematics

Fatima College

Madurai-625018.

CERTIFICATE

This to certify that the project entitled, “**A STUDY ON APPLICATIONS OF GRAPH THEORY**” submitted by the following students for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.

CATHERIN HARINI A	2020M10
JENOPHIYA J	2020M21
MANISHA A	2020M31
REETHI SHARON J	2020M42
SWATHI R	2020M51
SANDHYA A	2020M61
SUNANTHA DM	2020M64

Place: Madurai

Date:

M. v. fhl

**SIGNATURE OF THE
INTERNAL EXAMINER**

M. S. h
**SIGNATURE OF THE
EXTERNAL EXAMINER**

A. P. Mary
**SIGNATURE OF THE
HEAD OF THE DEPARTMENT**

Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

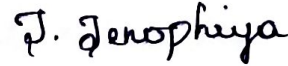
We CATHERIN HARINI A (2020M10), JENOPHIYA J (2020M21), MANISHA A (2020M31), REETHI SHARON J (2020M42), SWATHI R (2020M51), SANDHYA A (2020M61), SUNANTHA DM (2020M64) do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of Dr. M.V.Sethu Meenakshi M.Sc., B.Ed., Ph.D Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of the degree of **Bachelor of Science in Mathematics**.

Date: 11.04.2023

Station: Madurai



CATHERIN HARINI A - 2020M10



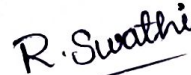
JENOPHIYA J - 2020M21



MANISHA A - 2020M31



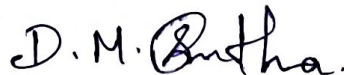
REETHI SHARON J - 2020M42



SWATHI R - 2020M51



SANDHYA A - 2020M61



SUNANTHA D M - 2020M64

A STUDY ON APPLICATION OF NUMBER THEORY

A project work submitted to Madurai Kamaraj University in partial fulfilment
of the requirements for the award of the degree of
BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

2020M13 DHARANISRI G C

2020M22 JEYA LAKSHMI M

2020M32 MARIA BLESSIA A

2020M43 ROSY S

2020M52 SWATHINI M R

2020M63 SHARMILA DEVI G

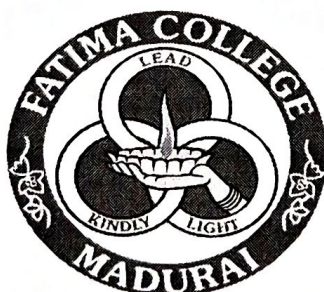
2020M65 VARSHA J

Under the Guidance of

Dr. A. JOSE LITTLE FLOWER M.Sc., B.Ed., M.Phil., Ph.D.

Assistant Professor

Department of Mathematics



FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with 'A++' by NAAC (4th Cycle)

Mary Land, Madurai – 625018, Tamil Nadu

April 2023

Dr. A. JOSE LITTLE FLOWER M.Sc., B.Ed., M.Phil., Ph.D.

Assistant Professor

Department of Mathematics

Fatima College (Autonomous)

Madurai - 625018.

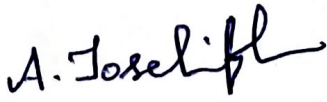
CERTIFICATE


This to certify that the project entitled, “**A STUDY ON APPLICATIONS OF NUMBER THEORY**” submitted by the following students, for the award of the degree of Bachelor of Science in Mathematics is a bonafide record of work carried out by them under my guidance and supervision.


DHARANISRI G C	2020M13
JEYA LAKSHMI M	2020M22
MARIA BLESSIA A	2020M32
ROSY S	2020M43
SWATHINI M R	2020M52
SHARMILA DEVI G	2020M63
VARSHA J	2020M65

Place: Madurai

Date: 11.4.23


**SIGNATURE OF THE
INTERNAL EXAMINER**


**SIGNATURE OF THE
EXTERNAL EXAMINER**


**SIGNATURE OF THE
HEAD OF THE DEPARTMENT**

Dr. A. Paulin Mary
Associate Professor & Head
Department of Mathematics
Fatima College (Autonomous)
Madurai - 625 018

DECLARATION

We DHARANISRI. G. C (2020M13), JEYA LAKSHMI. M (2020M22), MARIA BLESSIA. A (2020M32), ROSY. S (2020M43), SWATHINI. M. R (2020M52), SHARMILA DEVI. G (2020M63), VARSHA. J (2020M65) do hereby declare that this project is a bonafide record of work carried out by us under the guidance and supervision of Dr. A. Jose Little Flower M.Sc., B.Ed., M.Phil., Ph.D., Assistant Professor, Department of Mathematics, Fatima College, Madurai affiliated to Madurai Kamaraj University, Madurai in partial fulfilment for the award of the degree of **Bachelor of Science in Mathematics**.

Date: 11.04.2023

Station: Madurai

G. C. Dharanisri

DHARANISRI G C - 2020M13

N. Jeya Lakshmi

JEYA LAKSHMI M - 2020M22

A. Maria Blessia

MARIA BLESSIA A - 2020M32

S. Rosy

ROSY S - 2020M43

M. R. Swathini

SWATHINI M R - 2020M52

Sharmila Devi G

SHARMILA DEVI G - 2020M63

Varsha J

VARSHA J - 2020M65