KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade

Anand Nagar, Krishnankoil - 626126, Srivilliputtur (via), Virudhunagar District, Tamilnadu.

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:26-06-2020

Department	MATHEMATICS	Application No.	20200134
Area of Research	MATHEMATICAL MODELLING, GRAPH THEORY	Research Mode	FULL TIME

Name :AGATHIYAN

Date of Birth / Age :07-08-1998 / 21 Years

Gender :MALE

Category :BC

e-Mail ID :agathiyanbhc@gmail.com

Mobile :9043920765

Father's/Husband's Name	ARIDEVAN	Father's/Husband's Occupation	FARMER
Family Income	48000	Residental Type	RURAL
Birth Place	PASUMBALUR	Mother Tongue	TAMIL
Religion	HINDU	Martial Status	SINGLE
Aadhaar No.	423487028026	PAN No.	BRXPA9847E
Physically Challenged	NO	Type of Disability	-

Address for Communication:	Permenant Address:
1/239 MIDDLE STREET PASUMBALUR PERAMBALUR DISTRICT TAMILNADU INDIA Pin-621117	1/239 MIDDLE STREET PASUMBALUR PERAMBALUR DISTRICT TAMILNADU INDIA Pin-621117

Qualification

Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
M.SC	MATHEMATICS	BISHOP HEBER COLLEGE	2020	60.6	I	REGULAR
B.SC	MATHEMATICS	BISHOP HEBER COLLEGE	2018	62	I	REGULAR

Experience

Organization	Designation	Experience From	Experience TO	Work Nature

Payment Details

Transaction ID	Reference	Date of transaction	Amount	Status
20200134_200629101103	SPMP8942774343	29-06-2020	600	SUCCESS

Name of the Research Scholar:

A. Agathiyan

Broad Topic of Research:

Mathematical Modeling in Epidemic Model

A BRIEF RESEARCH PROPOSAL

Introduction

A mathematical model is a description of a concepts and language. A model may help to explain a system and to study the effects of different components, and to make predictions about behavior.

There is a large element of compromise in mathematical modeling. The majority of interacting systems in the real world are far too complicated to model in their entirety. Hence the first level of compromise is to identify the most important parts of the system. These will be including in the model, the rest will be excluded. The second level of compromise concerns the amount of mathematical manipulation which is worthwhile.

Epidemic Model

Historically the mathematical modeling of epidemics has started since the time of Graunt. In fact, Kermack and Mc Kendric describe some classical deterministic mathematical models of epidemiology by considering the total population into three classes namely Susceptible (S) individuals, Infected (I) individuals and recovered (R) individuals which is known to us as SIR epidemic model. This SIR epidemic model is very important in today's analysis of diseases. in recent years, epidemiological models have been studied by a number of authors.

The basic and important research subjects for these systems are the existence of the threshold value which distinguishes whether the infectious disease will die out, the local and global stability of the disease-free equilibrium and the endemic equilibrium, the existence of periodic solutions, the persistence and extinction of the disease, etc. Many models in the literature represent the dynamics of disease by systems of ordinary differential equations without

time delay. In order to reflect the real dynamical behaviors of models that depend on the past history of systems, it is reasonable to incorporate time delays into the systems.

Movitated by the works ([2],[6]), I have worked on " *Qualitative Analysis and Optimal Control Strategy of A New SIR Epidemic models with Saturated Incidence rate*" . I am Interested to do research more an Epidemic Model.

Research Objectives:

I have proposed to study Epidemic Models from the base of Mathematical Modeling problems

- Infectious Diseases in Human (COVID- 19, Typhoid, Malaria, HIV/AIDS, Dengue, Tuberculosis,etc…)
- Infectious Diseases Caused in animals and plants
- Drug addiction / Mobile addiction
- Corruption with Punishment
- Road accident with controlling factor

Reference:

[1]. Elazzouzi. A and Lamrani Alaoui. A: Global Stability analysis for a generalized delayed SIR Model with vaccination and treatment, Published 21st December 2019.

[2]. Herbert W. Hethcote . The Mathematics of Infectious diseases.

[3]. Jasmine. D and Surjith Jiji. D : Mathematical Modeling on Industrial Pollution and Spread of Infectious Disease with Incidence Rate Using SIR Epidemic Model with Controlling Factor. International Journal of Research in Advent Technology (IJRAT) Special Issue, January 2019.

[4]. Jayanta Kumar Ghosh and Uttam Ghosh : Qualitative analysis and optimal strategy of an SIR epidemic model with saturated incidence rate and treatment.

[5]. Junyuan Yang and xiaoyan wang: Threshold Dynamics of an SIR Model with non-linear Incidence Rate and Age- Dependent Susceptibility, Published 14th October 2018

[6]. Kaddar. A : Stability analysis in a delayed SIR epidemic model with a saturated incidence rate, Published 17th September 2010

[7]. Zhixing Hu and Wanbiao Ma : Analysis of SIR epidemic models with nonlinear incidence rate and treatment.

Centre Code : 25   Reg.No. 155107203   Code no. 0C5C6 : S.No.

பாரதிதாசன் பல்கலைக்கழகம்
BHARATHIDASAN UNIVERSITY
Re-accredited with 'A' Grade by NAAC
(Established by the Government of Tamil Nadu in 1982; Recognized by UGC under 2(f) and 12(B) of UGC Act;
Member, Association of Indian Universities and Association of Commonwealth Universities)

அறிவியல் புலம்
FACULTY OF SCIENCE

பாரதிதாசன் பல்கலைக்கழக ஆட்சிக் குழு ஏப்ரல் 2018.ஆம் ஆண்டு பிஷப் ஹீபர் கல்லூரி (தன்னாட்சி), திருச்சிராப்பள்ளி நடத்திய கணிதவியல் தேர்வில் அகத்தியன் அ என்பவர் முதல் வகுப்பில் A தரத்துடன் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள் சான்றளித்தபடி அறிவியல் இளையர் என்னும் பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the **BHARATHIDASAN UNIVERSITY** *hereby makes known that* **AGATHIYAN A** *has been admitted to the Degree of* **BACHELOR OF SCIENCE,** *having been certified by duly appointed Examiners to be qualified to receive the same in* **MATHEMATICS** *at the Examination held in* **APRIL 2018** *and placed in* **FIRST CLASS WITH A GRADE** *through the* BISHOP HEBER COLLEGE(Autonomous), TIRUCHIRAPPALLI *of the University.*

Given under the seal of the University.

திருச்சிராப்பள்ளி
Tiruchirappalli

நாள் :
Date : 23rd October 2018

N 008698   ISSUED ON : 07-02-2019

பதிவாளர் Registrar

P. Manisankar
துணைவேந்தர் Vice - Chancellor

BISHOP HEBER COLLEGE (AUTONOMOUS)

(Nationally Reaccredited with 'A' Grade by NAAC with a CGPA of 3.58 out of 4)
(Recognized by UGC as "College of Excellence")
(Affiliated to BHARATHIDASAN UNIVERSITY)
Tiruchirappalli – 620 017, Tamil Nadu, India.

Examinations of Post - Graduate Programmes Under Choice Based Credit System (CBCS)

BATCH : 2018-2020	STATEMENT OF MARKS AND GRADES	SEMESTER : I
NAME : AGATHIYAN A		REG. No. : 185207205
DOB : 08/07/1998	PROGRAMME : M.Sc.MATHEMATICS	

Semester	Course	Course Code	Course Title	CIA (25)	ESE (75)	Total (100)	G P	Grade	Credit	Result	Appeared in
1	CC	P14MA101	Real Analysis	18	40	58	6	B	5	P	NOV2018
1	CC	P14MA102	Linear Algebra	14	29	RAE	O	RA	0	RA	NOV2018
1	CC	P16MA103	Ordinary Differential Equatio..	15	41	56	6	B	5	P	NOV2018
1	CC	P16MA104	Calculus of Variations, Integ..	14	38	52	6	B	4	P	NOV2018
1	EC	P14MA1¦1	Graph Theory	13	18	RAE	O	RA	0	RA	NOV2018

---END OF STATEMENT---See Overleaf for Grade Points

Current Semester Performance				Cumulative Performance				P — Pass
WAM	GPA	GRADE	CREDIT	CWAM	CGPA	GRADE	CREDIT	RA — Re-Appear RAI — Re-Appear in Internal
55.57	6.00	B+	14	55.57	6.00	B+	14/23	RAE — Re-Appear in External RAB — Re-Appear in Both AAA — Absent

Any correction invalidates this statement.

Date of issue : 31 JAN 2019

CONTROLLER OF EXAMINATIONS

BISHOP HEBER COLLEGE (AUTONOMOUS)

(Nationally Reaccredited with 'A' Grade by NAAC with a CGPA of 3.58 out of 4)
(Recognized by UGC as "College of Excellence")
(Affiliated to BHARATHIDASAN UNIVERSITY)
Tiruchirappalli - 620 017, Tamil Nadu, India.

Examinations of Post - Graduate Programmes Under Choice Based Credit System (CBCS)

BATCH : 2018-2020	STATEMENT OF MARKS AND GRADES	SEMESTER : II
NAME : AGATHIYAN A		REG. No. : 185207205
DOB : 08/07/1998	PROGRAMME : M.Sc.MATHEMATICS	

Semester	Course	Course Code	Course Title	CIA (25)	ESE (75)	Total (100)	G P	Grade	Credit	Result	Appeared in
2	CC	P14MA205	Algebra	16	55	71	8	A	5	P	APR2019
2	CC	P14MA206	Partial Differential Equation..	17	31	RAE	0	RA	0	RA	APR2019
2	CC	P16MA207	Fluid Dynamics	18	30	RAE	0	RA	0	RA	APR2019
2	EC	P16MA2:P	Object Oriented Programming i..	32	60	92	10	O	4	P	APR2019
2	NMEC	P18EC2E1	Indian Economy: An Introducti..	24	71	95	10	O	2	P	APR2019
2	VLO	P17VL2:2	Moral Instruction(MI)	24	73	97	10	O	2	P	APR2019
1	CC	P14MA102	Linear Algebra	14	19	RAE	0	RA	0	RA	APR2019
1	EC	P14MA1:1	Graph Theory	13	19	RAE	0	RA	0	RA	APR2019

Practical CIA Max: 40   ESE Max: 60
---END OF STATEMENT---See Overleaf for Grade Points

Current Semester Performance				Cumulative Performance					P – Pass
WAM	GPA	GRADE	CREDIT	CWAM	CGPA	GRADE	CREDIT		RA – Re-Appear RAI – Re-Appear in Internal RAE – Re-Appear in External RAB – Re-Appear in Both AAA – Absent
85.15	9.23	O	13	69.81	7.56	A	27/46		

Any correction invalidates this statement.

Date of Issue : 10 JUL 2019

CONTROLLER OF EXAMINATIONS

BISHOP HEBER COLLEGE (AUTONOMOUS)

(Nationally Reaccredited with 'A' Grade by NAAC with a CGPA of 3.58 out of 4)
(Recognized by UGC as "College of Excellence")
(Affiliated to BHARATHIDASAN UNIVERSITY)
Tiruchirappalli - 620 017, Tamil Nadu, India.

Examinations of Post - Graduate Programmes Under Choice Based Credit System (CBCS)

BATCH : 2018-2020	STATEMENT OF MARKS AND GRADES	SEMESTER : III
NAME : AGATHIYAN A		REG. No. : 185207205
DOB : 08/07/1998	PROGRAMME : M.Sc.MATHEMATICS	

Semester	Course	Course Code	Course Title	CIA (25)	ESE (75)	Total (100)	Grade Point	Grade	Credit	Result	Appeared In
3	CC	P14MA308	Topology	15	41	56	6	B	5	P	NOV2019
3	CC	P14MA309	Measure and Integration	16	38	54	6	B	5	P	NOV2019
3	CC	P14MA310	Complex Analysis	20	46	66	7	B+	5	P	NOV2019
3	CC	P16MA311	Probability and Statistics	21	43	64	7	B+	4	P	NOV2019
3	EC	P17MA3:1	Fuzzy Set Theory and its Appl..	16	34	RAE	0	RA	0	RA	NOV2019
2	CC	P14MA206	Partial Differential Equation..	17	38	55	6	B	5	P	NOV2019
2	CC	P16MA207	Fluid Dynamics	18	41	59	6	B	5	P	NOV2019
1	CC	P14MA102	Linear Algebra	14	38	52	6	B	5	P	NOV2019
1	EC	P14MA1:1	Graph Theory	13	41	54	6	B	4	P	NOV2019

----END OF STATEMENT---See Overleaf for Grade Points

Current Semester Performance				Cumulative Performance				
WAM	GPA	GRADE	CREDIT	CWAM	CGPA	GRADE	CREDIT	
57.42	6.24	B+	38	62.57	6.78	B+	65/69	

P   – Pass
RA   – Re-Appear
RAI   – Re-Appear in Internal
RAE   – Re-Appear in External
RAB   – Re-Appear in Both
AAA   – Absent

Any correction invalidates this statement.

Date of issue : - 5 FEB 2020

CONTROLLER OF EXAMINATIONS

BISHOP HEBER COLLEGE (AUTONOMOUS)

(Ranked 3rd at National Level by MHRD through NIRF-2017)
(Nationally Reaccredited with 'A' Grade by NAAC with a CGPA of 3.58 out of 4)
(Recognized by UGC as 'College of Excellence')
(Affiliated to Bharathidasan University)

Self Financing

TIRUCHIRAPPALLI - 620 017

TRANSFER CERTIFICATE

S.NO.	3045	ADMISSION NO.	35455	ROLL NO.	155107203

1.	Name of the Pupil (in BLOCK LETTERS as entered in +2 or equivalent Certificate)	:	AGATHIYAN A
2.	Name of the Parent / Guardian	:	ARIDEVAN A
3.	Nationality, Religion and Caste	:	INDIAN, HINDU, SADHU CHETTY
4.	Community	:	BC
5.	Sex	:	MALE
6.	Date of Birth as entered in the Admission Register (in figures and words)	:	8-7-1998 (Eighth, July, 1998)
7.	Personal marks of Identification a) b)		----
8.	Date of Admission and Class in which admitted (the year to be entered in words)	:	28-Oct-15, First B.SC.-MATHEMATICS
9.	(a) Class in which the pupil was studying at the time of leaving (in words)	:	Third B.SC.-MATHEMATICS
	(b) Programme studied Main	:	MATHEMATICS
	Allied	:	Physics,Mathematical Statistics
	(c) Language offered under Part - I	:	TAMIL
	(d) Medium of Instruction	:	ENGLISH
10.	Whether the student has paid all the fees due to the College	:	YES
11.	Whether the student was in receipt of any scholarship (Nature of the scholarship to be specified) or (Educational Concession)		NO
12.	Whether the student has undergone Medical Inspection, if any, during the academic year (first or repeat to be specified)	:	NO
13.	Date on which the student actually left the College	:	7-4-2018
14.	Student's Conduct and Character	:	GOOD
15.	Date on which the application for Transfer Certificate was made by the Student	:	7-5-2018
16.	Date of the Transfer Certificate	:	7-5-2018
17.	Programme of Study		

Name of the College	Academic Year	Programme Studied	First Language	Medium of Instruction
BISHOP HEBER COLLEGE (AUTONOMOUS)	2015-2018	B.SC.-MATHEMATICS	TAMIL	ENGLISH

07 MAY 2018

Date :

PRINCIPAL
BISHOP HEBER COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI-620 017
Signature of the Principal

Note : (1) Erasures and unauthenticated of fraudulent alteration in the certificate will lead to its cancellation.
(2) Should be signed in ink by the head of the Institution who will be held responsible for the correctness of the entries.

Declaration

I hereby declare that the particulars recorded against items 1 to 7 are correct and that no change will be demanded by me in future.

Signature of the Parent / Guardian

A. Agathi
Signature of the Student

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

स्थायी लेखा संख्या कार्ड
Permanent Account Number Card

BRXPA9847E

नाम / Name
AGATHIYAN A

पिता का नाम / Father's Name
ARIDEVAN

जन्म की तारीख / Date of Birth
08/07/1998

हस्ताक्षर / Signature

13012017

इस कार्ड के खोने/पाने पर कृपया सूचित करें/लौटाएं:
आयकर पैन सेवा इकाई, एन एस डी एल
5 वीं मंजिल, मंत्री स्टर्लिंग,
प्लॉट नं. 341, सर्वे नं. 997/8,
मॉडल कालोनी, दीप बंगला चौक के पास,
पुणे - 411 016.

If this card is lost / someone's lost card is found,
please inform / return to :

Income Tax PAN Services Unit, NSDL
5th Floor, Mantri Sterling,
Plot No. 341, Survey No. 997/8,
Model Colony, Near Deep Bungalow Chowk,
Pune - 411 016.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in

आयकर विभाग

INCOME TAX DEPARTMENT

भारत सरकार

GOVT. OF INDIA

स्थायी लेखा संख्या कार्ड

Permanent Account Number Card

BRXPA9847E

नाम / Name

AGATHIYAN A

पिता का नाम / Father's Name

ARIDEVAN

जन्म की तारीख / Date of Birth

08/07/1998

हस्ताक्षर / Signature

13012017

इस कार्ड के खोने/पाने पर कृपया सूचित करें/लौटाएं:
आयकर पैन सेवा इकाई, एन एस डी एल
5 वीं मंजिल, मंत्री स्टर्लिंग,
प्लॉट नं. 341, सर्वे नं. 997/8,
मॉडल कालोनी, दीप बंगला चौक के पास,
पुणे - 411 016.

If this card is lost / someone's lost card is found,
please inform / return to :

Income Tax PAN Services Unit, NSDL
5th Floor, Mantri Sterling,
Plot No. 341, Survey No. 997/8,
Model Colony, Near Deep Bungalow Chowk,
Pune - 411 016.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

स्थायी लेखा संख्या कार्ड
Permanent Account Number Card

BRXPA9847E

नाम / Name
AGATHIYAN A

पिता का नाम / Father's Name
ARIDEVAN

जन्म की तारीख / Date of Birth
08/07/1998

A Agathe
हस्ताक्षर / Signature

13012017

इस कार्ड के खोने/पाने पर कृपया सूचित करें/लौटाएं :
आयकर पैन सेवा इकाई, एन एस डी एल
5 वीं मंजिल, मंत्री स्टर्लिंग,
प्लॉट नं. 341, सर्वे नं. 997/8,
मॉडल कालोनी, दीप बंगला चौक के पास,
पुणे - 411 016.

If this card is lost / someone's lost card is found,
please inform / return to :

Income Tax PAN Services Unit, NSDL
5th Floor, Mantri Sterling,
Plot No. 341, Survey No. 997/8,
Model Colony, Near Deep Bungalow Chowk,
Pune - 411 016.

Tel: 91-20-2721 8080, Fax: 91-20-2721 8081
e-mail: tininfo@nsdl.co.in