



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

**APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES**

Date of Application:10-12-2020

Department	ELECTRONICS AND COMMUNICATION ENGINEERING	Application No.	202020093
Area of Research	WIRELESS COMMUNICATION	Research Mode	PART TIME

**Name** :KAVITHA G  
**Date of Birth / Age** :24-04-1984 / 36 Years  
**Gender** :FEMALE  
**Category** :BC  
**e-Mail ID** :tharshikasrinithi@gmail.com  
**Mobile** :9942658768



*Kavitha G*

<b>Father's/Husband's Name</b>	GOPALUN P	<b>Father's/Husband's Occupation</b>	FARMER
<b>Family Income</b>	200000	<b>Residential Type</b>	URBAN
<b>Birth Place</b>	TRICHY	<b>Mother Tongue</b>	TAMIL
<b>Religion</b>	HINDU	<b>Martial Status</b>	MARRIED
<b>Aadhaar No.</b>	569160133114	<b>PAN No.</b>	DFCPK7432E
<b>Physically Challenged</b>	NO	<b>Type of Disability</b>	-

**Address for Communication:**

81  
 NANAYAKARA STREET  
 KUMBAKONAM  
 TANJORE DISTRICT  
 TAMILNADU  
 INDIA  
 Pin-612001

**Permenant Address:**

81  
 NANAYAKARA STREET  
 KUMBAKONAM  
 TANJORE DISTRICT  
 TAMILNADU  
 INDIA  
 Pin-612001

Qualification						
Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
B.E	ECE	SUDHARSAN ENGINEERING COLLEGE, ANNA UNIVERSITY	2005	61	FIRST	REGULAR
M.E	COMMUNICATION SYSTEM	PAVENDAR BHARATHIDASAN COLLEGE OF ENGINEERING & TECHNOLOGY, ANNA UNIVERSITY	2014	7.85	FIRST	REGULAR

Experience					
Organization	Designation	Experience From	Experience TO	Work Nature	
ARASU ENGINEERING COLLEGE	ASSISTANT PROFESSOR	2019-11-08	2020-12-10	TEACHING	
ARASU ENGINEERING COLLEGE	ASSISTANT PROFESSOR	2015-01-07	2017-07-05	TEACHING	
PABCET	ASSISTANT PROFESSOR	2008-06-16	2013-12-17	TEACHING	

SUDHARSAN ENGINEERING COLLEGE	ASSISTANT PROFESSOR	2007-06-06	2007-12-13	TEACHING
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Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
202020093_201211104759	VIOB9547861310	11-12-2020	600	SUCCESS

# **Improving Spectral Efficiency in NOMA Power domain techniques by SC and SIC**

## **ABSTRACT**

In FDMA implementations, such as Orthogonal Frequency Division Multiple Access (OFDMA), information for each user is assigned to a subset of subcarrier. NOMA is fundamentally different than other multiple access schemes which provide orthogonal access to the user either in time, frequency, code or space. In NOMA, each user operates in the same band and at the same time where they are distinguished by their power levels.

NOMA has received tremendous attention for the design of radio access techniques for fifth generation wireless networks. The basic concept of NOMA is to serve more than one user in the same resource block and significantly improve the spectral efficiency of Mobile communication network. The increasing demand of Mobile internet and Internet of Things poses challenging requirements for 5G Wireless communications, such as high spectral efficiency and massive connectivity.

There are different types of NOMA techniques, including Power-domain and Code-domain. Power-domain attains multiplexing in power-domain, whereas Code-domain NOMA achieves multiplexing in Code-domain. This paper focuses on Power-domain NOMA. NOMA uses the Power-domain to separate signals from each other. It utilizes the superposition coding (SC) at the transmitter and successive interference cancellation (SIC) at the receiver side. NOMA gives a new dimension in which signals can be separated and given access to a base station. The Performance gain of NOMA compare to that of OFDMA increases when the differences in channel gain the path loss, NOMA provides higher sum rate than OFDMA. This technique that has been used within 2G, 3G or 4G before.

# Anna University



Reg.No. 813111818001/RG

*The Syndicate of the Anna University hereby makes known that*  
**KAVITHA G** *has been admitted to the* **DEGREE OF MASTER OF ENGINEERING** *in* **COMMUNICATION SYSTEMS** *under the*  
*Faculty of Information and Communication Engineering, having completed the prescribed programme of study and having been certified by the duly appointed examiners to be qualified to receive the same, and has been placed in* **FIRST CLASS** *at the Examination held in* **JUNE 2014.**

*Given under the Seal of the University*

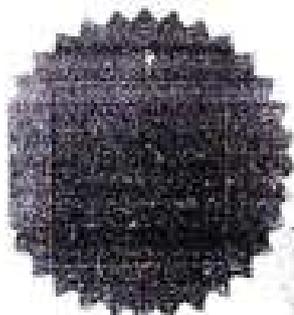


# Anna University



*The Syndicate of the Anna University hereby makes known that*  
**KAVITHA G** has been admitted to the **DEGREE OF BACHELOR OF**  
**ENGINEERING** in **ELECTRONICS AND COMMUNICATION**  
**ENGINEERING** under the Faculty of Information and Communication  
*Engineering having completed the prescribed programme of study and having*  
*been certified by duly appointed examiners to be qualified to receive the same and*  
*having been placed by them in the***FIRST CLASS** *at the Examination held in*  
**NOVEMBER 2005.**

*Given under the Seal of the University*



Chennai 600 025  
India

November 2006 *Controller of Examinations*

*V. Arora*

*[Signature]*

Registrar

*[Signature]*

Vice-Chancellor



# ANNA UNIVERSITY, CHENNAI

Folio No. CS12244

## B.E. DEGREE EXAMINATIONS CONSOLIDATED STATEMENT OF MARKS

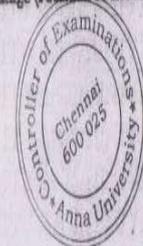
NAME OF THE CANDIDATE		KAVITHA G		REGISTER NO.		92001106025							
COLLEGE OF STUDY		920: Sudharsan Engineering College		MONTH & YEAR OF LAST APPEARANCE		Nov 2005							
PROGRAMME & BRANCH		B.E. Electronics and Communication Engineering		REGULATIONS		2001							
SEM.	SUBJECT CODE	SUBJECT TITLE	MAX	MIN	MARKS SECURED	MONTH & YEAR OF PASSING	SEM.	SUBJECT CODE	SUBJECT TITLE	MAX	MIN	MARKS SECURED	MONTH & YEAR OF PASSING
01	ER11	English - I	100	50	058	NOV 2001	05	EC335	Transmission Lines and Networks	100	50	052	APR 2005
01	ER12	Mathematics - I	100	50	053	NOV 2002	05	EC336	Computer Architecture	100	50	055	APR 2005
01	ER13	Physical Sciences - I (Applied Physics, Applied Chemistry)	100	50	051	NOV 2001	05	EC337	Digital System Design and Signal Processing Lab	100	50	077	NOV 2003
01	ER14	Basic Electrical & Electronics Engineering	100	50	052	NOV 2001	05	EC338	Microprocessor and Control Lab	100	50	073	NOV 2003
01	ER15	Engineering Mechanics - I	100	50	052	NOV 2001	06	EC341	Digital Communication	100	50	053	APR 2004
01	ER16	Engineering Drawing & Graphics - I	100	50	052	NOV 2001	06	EC342	EM Waves and Wave Guides	100	50	062	APR 2005
02	ER21	English - II	100	50	056	APR 2002	06	EC343	Computer Communication Networks	100	50	056	NOV 2005
02	ER22	Mathematics - II	100	50	053	APR 2002	06	EC345	Television and Video Engineering	100	50	053	APR 2005
02	ER23	Physical Sciences - II (Applied Physics, Applied Chemistry)	100	50	052	APR 2002	06	MG325	Engineering Economics and Financial Accounting	100	50	054	APR 2005
02	ER24	Basic Civil & Mechanical Engineering	100	50	057	APR 2002	06	EC041	Medical Electronics	100	50	052	APR 2004
02	ER25	Engineering Mechanics - II	100	50	053	NOV 2002	06	EC346	Communication System Lab	100	50	070	APR 2004
02	ER26	Engineering Drawing & Graphics - II	100	50	066	APR 2002	06	EC435	Electronic System Design Lab	100	50	068	APR 2004
02	ER27P	Physical Science Lab (Physics & Chemistry Lab)	100	50	088	APR 2002	07	CE071	Principles of Environmental Science and Engineering	100	50	060	APR 2005
02	ER28P	Computer Lab	100	50	080	APR 2002	07	EC431	Antennas and Propagation	100	50	052	NOV 2004
02	ER29P	Workshop	100	50	082	APR 2002	07	EC432	Microwave Engineering	100	50	053	NOV 2004
03	EC231	Network Analysis and Synthesis	100	50	053	NOV 2003	07	EC433	Optical Communication	100	50	063	APR 2005
03	EC232	Signals and Systems	100	50	055	NOV 2003	07	GE035	Professional Ethics	100	50	050	NOV 2004
03	EC233	Electromagnetic Fields	100	50	059	APR 2003	07	MG331	Principles of Management	100	50	050	NOV 2004
03	EC234	Electronic Circuits - I	100	50	057	APR 2005	07	EC434	Microwave and Optical Communication Lab	100	50	068	NOV 2004
03	EE253	Electrical Engineering	100	50	065	NOV 2004	07	EC439	Comprehension	100	50	085	NOV 2004
03	MA231	Mathematics - III	100	50	054	NOV 2003	07	EC440	RF Lab	100	50	085	NOV 2004
03	EC236	Electronic Devices and Circuits Lab	100	50	077	NOV 2002	08	GE406	Total Quality Management	100	50	054	APR 2005
03	EE254	Electrical Engineering Lab	100	50	081	NOV 2002	08	EC047	Cellular Mobile Communication	100	50	054	APR 2005
04	EC241	Electronic Circuits II	100	50	055	APR 2003	08	EC444	Project Work	200	100	169	APR 2005
04	EC242	Digital Electronics	100	50	057	APR 2005							
04	EC243	Programming and Data Structures	100	50	051	NOV 2003							
04	EC244	Linear Integrated Circuits	100	50	054	NOV 2004							
04	EC245	Measurements and Instrumentation	100	50	052	APR 2004							
04	MA034	Random Processes	100	50	050	NOV 2005							
04	EC246	Computer Programming Lab	100	50	071	APR 2003							
04	EC247	Electronic Circuit Design Lab	100	50	065	APR 2003							
05	EC331	Microprocessor and Applications	100	50	065	NOV 2004							
05	EC332	Communication Theory and Systems	100	50	052	APR 2004							
05	EC333	Digital Signal Processing	100	50	052	NOV 2005							
05	EC334	Control Systems	100	50	050	APR 2004							

\*\*\*End of Statement\*\*\*

Classification: **FIRST CLASS**

Total Marks (from 3rd to 8th semester): 2743 / 4500

Percentage (rounded to nearest integer): 61



*K. S. M.*



**ANNA UNIVERSITY, CHENNAI - 25**  
**M.E DEGREE EXAMINATIONS**  
**CONSOLIDATED STATEMENT OF GRADES**



K112264948949G

Folio No. AUCF009871

NAME OF THE CANDIDATE	KAVITHA G			REGISTER NO.	813111818001
DATE OF BIRTH	24-APR-84	GENDER	FEMALE	MONTH & YEAR OF LAST APPEARANCE	JUN 2014
COLLEGE OF STUDY	PAVENDAR BHARATHIDASAN COLLEGE OF ENGINEERING AND TECHNOLOGY			REGULATIONS	2009
PROGRAMME & SPECIALIZATION	M.E. Communication Systems (P.T.)				

SEM. NO.	COURSE CODE	COURSE TITLE	CREDITS	LETTER GRADE	GRADE POINT	MONTH & YEAR OF PASSING
01	CP9211	Modern Digital Communication Techniques	3	C	7	JAN 2012
01	CU9213	Optical Communication Networks	3	C	7	JUN 2012
01	MA9218	Applied Mathematics for Communication Engineers	4	D	6	JUN 2012
01	CU9216	Communication System Laboratory I	2	A	9	JAN 2012
02	CU9221	Wireless Mobile Communication	3	D	6	JUN 2012
02	CU9222	Multimedia Compression Techniques	3	C	7	NOV 2012
02	CP9212	High Performance Computer Networks	3	C	7	NOV 2012
02	CU9228	Communication System Lab II	2	A	9	JUN 2012
03	AP9211	Advanced Digital Signal Processing	3	A	9	NOV 2013
03	CU9211	Advanced Radiation Systems	3	B	8	NOV 2012
03	CU9256	Network Routing Algorithms	3	C	7	JUN 2013
04	CU9223	Microwave Integrated Circuits	3	C	7	JUN 2013
04	CU9224	Satellite Communication	3	B	8	JUN 2013
04	CU9251	Communication protocol Engineering	3	D	6	JUN 2013
05	CP9253	High Speed Switching Architecture	3	C	7	JUN 2014
05	CU9257	Communication Network Security	3	C	7	NOV 2013
05	CU9258	Network Management	3	C	7	NOV 2013
05	CU9234	Project Work (Phase I)	6	A	9	NOV 2013
06	CU9241	Project Work (Phase II)	12	S	10	JUN 2014

\*\*\* End of Statement \*\*\*

**Cumulative Grade Point Average : 7.85**

**Classification : FIRST CLASS**



Medium of Instruction : ENGLISH

Chennai - 25.  
Date : 18/09/2014

*Kavitha G*  
SIGNATURE OF THE STUDENT



*M. J. ...*  
CONTROLLER OF EXAMINATIONS



PAVENDAR BHARATHIDASAN COLLEGE OF ENGINEERING & TECHNOLOGY

THANJAI NAGARAJAN NAGAR, MATHUR, PUDUKKOTTAI ROAD, TRICHIRAPPALLI - 620 024.

Tel: 04339-250356-57-58 / Fax : 04339-250730

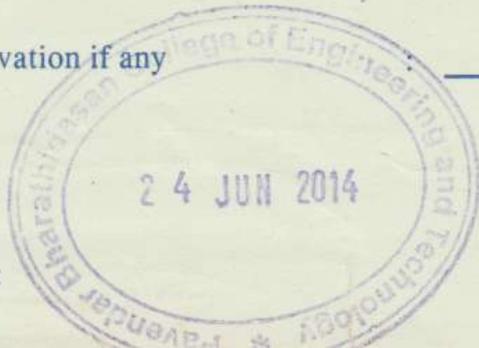


TRANSFER & CONDUCT CERTIFICATE

TC NO : 2393

REGISTER NO : 81311818001

- 1. Name of the Student : KAVITHA.G
2. Date of Birth (dd/mm/yyyy) : 24.04.1984
3. Nationality : Indian
4. Religion : Hindu
5. Caste : Sozhia Vellalar
6. Personal Identification Marks : A A mole on the left arm
7. Date of Admission : 22.12.2010
8. Department : Communication Systeme
9. Date of Leaving : 05.05.2014
10. Date of Issue of T.C. : 24.06.2014
11. Student's Conduct : Good
12. Observation if any : Nil



Date :

NIL Prof. Dr. R. NALINI, M.Tech., Ph.D. PRINCIPAL PAVENDAR BHARATHIDASAN COLLEGE OF ENGINEERING & TECHNOLOGY THANJAI NAGAR, MATHUR, PUDUKKOTTAI MAIN ROAD, TRICHIRAPPALLI-620 024.



# Arasu Engineering College

(Approved by AICTE & Affiliated to Anna University)

Chennai Main Road, Kumbakonam - 612 501.

PH (0435) 2452444, 3299999, 6533333 FAX (0435) 2452166

Web : www.aec.org.in E-mail : arasuengg@gmail.com arasuengg@aec.org.in



**Dr. B. GOPI**

Principal

AEC/SC/2017/108

July 5, 2017

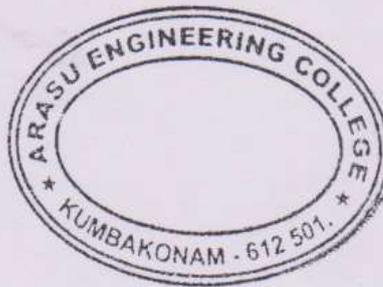
## SERVICE CERTIFICATE

**Mrs. G. Kavitha**, Assistant Professor, Department of Electronics and Communication Engineering worked in this institution from 07.01.2015 to 05.07.2017.

Her Conduct and Character during that period were good.

PRINCIPAL

PRINCIPAL  
ARASU ENGINEERING COLLEGE  
Kumbakonam - 612 501



ASCET/D2205/2015

DATE: 05.01.2015

## SERVICE CERTIFICATE CUM RELIEVING ORDER

Ms.G.KAVITHA was worked as Assistant Professor in the Department of Electronics & Communication Engineering from 25.06.2014 to 02.01.2015.

She was relieved from her duties and responsibilities in our college at her own request, with effect from 02.01.2015 A.N.

During this period with us, her conduct and character were good.

We wish her all success in her future endeavor.



*[Handwritten Signature]*  
**DIRECTOR**

AS-SALAM COLLEGE OF ENGG & TECH  
Thirumangalakudi - Aduthurai  
Thanjavur - Tk  
612 102

# PAVENDAR BHARATHIDASAN COLLEGE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE, Govt. of Tamilnadu & Affiliated to Anna University)

Thanjay Nataraj Nagar, Mathur, Pudukkottai Main Road,  
Tiruchirappalli - 620 024.



Prof. Dr. R. NALINI, M.Tech., Ph.D.,  
Principal

Ph : 04339 - 250356, 358  
Telefax: 04339 - 250730  
Cell : 95668 - 30022  
Email : [pabcet@sifymail.com](mailto:pabcet@sifymail.com)  
Cell : [WWW.pabcet.com](http://WWW.pabcet.com)

PO/PABCET/2013

Date: 18.12.2013

## SERVICE CERTIFICATE

This is to certify that **Mrs.G.KAVITHA**, worked as **Assistant Professor** in the Department of **Electronics & Communication Engineering** in our college from **16.06.2008** to **17.12.2013**. Her conduct and character are good

We wish her all the Best in all her Endeavors.

*R. Nalini*  
18 Dec 13

**PRINCIPAL**

Prof. Dr. R. NALINI, M.Tech., Ph.D.

**PRINCIPAL**

PAVENDAR BHARATHIDASAN COLLEGE  
OF ENGINEERING & TECHNOLOGY

THANJAI NATARAJAN NAGAR, MATHUR,  
PUDUKKOTTAI MAIN ROAD,  
TIRUCHIRAPPALLI-620 024.



# Sudharsan Engineering College

Sathiyamangalam 622 501, Pudukkottai Dist. Phone : 04339 - 240840, Email : principal@sec.ac.in

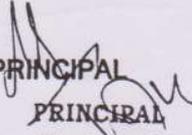
SEC/ADMIN/SER/2007-2008/83

Date :  
Date: 15<sup>th</sup> April 2008

## SERVICE CERTIFICATE

This is to certify that Ms. G.KAVITHA worked as a Lecturer in the Department  
Electronics & Communication Engineering from 06<sup>TH</sup> June 2007 to till 13<sup>TH</sup> December  
2007.



  
PRINCIPAL  
PRINCIPAL  
Sudharsan Engineering College,  
Sathiyamangalam - 622 501.

Tel : 04333 - 274913, 274914, Fax : 04333 - 274912



# SHANMUGANATHAN ENGINEERING COLLEGE

(Approved by AICTE, Govt. of Tamil Nadu & Affiliated to the Anna University)

ARASAMPATTI - 622 507, THIRUMAYAM Taluk, PUDUKKOTTAI Dist.

E.Mail : Principal @shanmuganathanengg.com

Dr. S.NILAVALAGAN, B.E., M.Tech., Ph.D.,  
Principal

Ref: SEC/PRL-EC/17/2007

Date: 01.06.07

## EXPERIENCE CERTIFICATE

This is to certify that **Ms. G. Kavitha** had been working in this Institution from 03.08.2006 to 01.06.2007 as Lecturer in Electronics and Communication Engineering department.

She was relieved from service on 01.06.2007 afternoon.

During her tenure, she worked with total dedication, involvement and sincerity and her performance was good.

We wish her success in her future endeavor.

Principal

Principal  
SHANMUGANATHAN  
ENGINEERING COLLEGE  
ARASAMPATTI

आयकर विभाग

INCOME TAX DEPARTMENT



भारत सरकार

GOVT. OF INDIA

KAVITHA V

GOPALAN

24/04/1984

Permanent Account Number

DFCPK7432E

A handwritten signature in black ink, appearing to read 'H. Lal', is located below the PAN number.

Signature



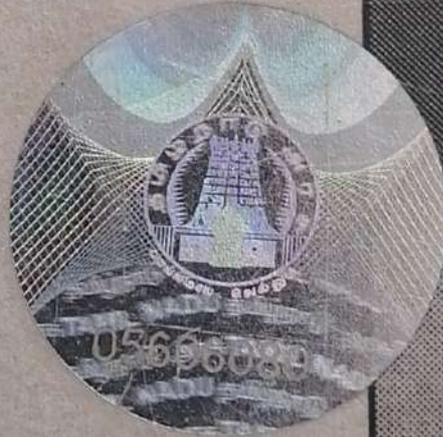
21082013

7



இந்திய தேர்தல் ஆணையம்  
வாக்காளர் அடையாள அட்டை  
ELECTION COMMISSION OF INDIA  
IDENTITY CARD

JLK3201605



வாக்காளர் பெயர் : கவிதா

**Elector's Name** : **Kavitha**

தகப்பனார் பெயர் : கோபாலன்

**Father's Name** : **Gopalan**

பாலினம்/ **Sex** : பெண் / Female

1.1.2006 அன்று வயது

**Age as on 1.1.2006**

22

BC

சான்றிதழ் எண்

Certificate No. : 1431/97

மாவட்ட குறியீடு எண்  
District Codeவட்ட குறியீடு எண்  
Taluk Codeகிராமக் குறியீடு எண்  
Village Code

1	2
0	3
0	2

808866

சாதிச்சான்றிதழ்

## COMMUNITY CERTIFICATE

புதுக்கோட்டை மாவட்டம் புதுக்கோட்டை வட்டம்

தெயம்பாட்டுர் கிராமம் / நகரம், திரு / திருமதி / செல்வி /

செல்வன் கவிகா தகப்பனார் /

கணவர் பெயர் கோபாலன் திருது கோழியலென்னாணி

வகுப்பைச் சார்ந்தவர் அரசு ஆணை எண். 1564, சமூக நலத்துறை, நாள் 30-7-1985.

வ. எண் 122 படி பிற்பட்ட பிரிவைச் சார்ந்தவர் என

சான்றளிக்கப்படுகிறது.

This is to Certify that ..... Son / Daughter of

Thiru ..... of Village / Town .....

Taluk ..... District of the State of Tamil Nadu belongs to .....

..... Community, which is recognised as a Backward Class as per Government Order (Manuscript Series) No. 1564, Social Welfare Department, dated 30-7-1985 vide Serial No. ....

2. திரு / திருமதி / செல்வி / செல்வன் கவிகா

என்பவரும் அவருடைய குடும்பத்தினரும் தமிழ்நாட்டில் புதுக்கோட்டை

மாவட்டத்தில் புதுக்கோட்டை வட்டத்தில் தெயம்பாட்டுர்

கிராமத்தில் / நகரத்தில் வசித்து வருகிறார்கள் என சான்றளிக்கப்படுகிறது.

2. It is certified that Thiru / Tmt / Smt / Selvan .....

and his / her family ordinarily reside(s) at ..... village / Town

Taluk ..... District of Tamil Nadu .....

முத்திரை  
Sealகையொப்பம்  
Signatureநாள்  
Dateதனி எழுத்துக்களில் பெயர்  
Name in Capital Lettersபதவிப் பெயர்  
Designation

ANNEXURE-I

CERTIFICATE FROM THE ORGANISATION WHERE THE CANDIDATE IS EMPLOYED

Certified that Mr./Ms./Mrs. KAVITHA . G is employed as ASSISTANT PROFESSOR (Designation) in the ELECTRONICS AND COMMUNICATION ENGG (Department/Division Name) of ARASU ENGINEERING COLLEGE , KUMBakonam. (Institution/Industry Name).

We have no objection in forwarding his/her application for the Ph.D. Research Programme.

FOR FULL TIME:

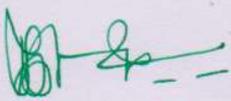
The candidate will be sanctioned leave for the duration of the research programme and will be relieved from duty from \_\_\_\_\_ to \_\_\_\_\_ to undertake the full time research work in the University.

FOR PART TIME:

The candidate will be permitted to undertake part time study in the University/College and will be allowed to be present for discussions with the supervisor, attending course works, conduct of experiments and participations in seminars and related presentations. Further the required facilities at our organization will also be provided to the candidate for doing research.

Date: 10/12/2020

Signature of the Head of Organization with office seal

  
PRINCIPAL

ARASU ENGINEERING COLLEGE  
Kumbakonam - 612 501