





# INDEX

**CRITERION: 3.1.1** 

Grants for research projects sponsored by government/non-government sources such as industry, corporate houses, international bodies, endowment, chairs in the institution during the year 2021-22

SI. No.	Department	Nature of award	Name of awarding agency	Amount In Rs.	Page No.
1	Electrical and Electronics Engineering	Funding for the Student Branches	IEEE MAS	10,000.00	2
2	Mechanical Engineering	Student Project Scheme	Tamil Nadu State Council for Science & Technology	7,500.00	15
3	Civil Engineering	Student Project Scheme	Tamil Nadu State Council for Science & Technology	7,500.00	18
4	Electrical and Electronics Engineering	Student Project Scheme	Tamil Nadu State Council for Science & Technology	7,500.00	19

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J. Monute PRINCIPAL Kings College of Engineering,

PUNALKULAM - 613 303.



## **Application Format for funding for the Student Branches (SBs)**

	School Code:60034987	Branch Code:16621
1. Name	e of the Organizer(s): 1.Dr.A.Albert	Martin Ruban; 2.Dr.M.Meenalochani
2. Depa	rtment: Electrical and Electronics E	ngineering

- 3. Designation: 1. Associate Professor 2. Assistant Professor
- 4. Affiliation: Kings College of Engineering, Punalkulam
- 5. Email id of corresponding organizer: meenalochani79@gmail.com
- 6. Mobile number of the corresponding organizer:91-9629891123
- 7. Name of the event: Smart Grid- Trends and Future Perspective
- 8. Number of days: 2
- 9. Dates: 8.11.2021 and 9.11.2021
- 10. Nature of the event: FDP
- 11. Venue: Online mode
- 12. Program schedule: Enclosed as Annexure 1
- 13. Name the other organizations approached for sponsoring the event: Nil
- 14. Anticipated number of participants/number of delegates: 100
- 15. Budget :Enclosed as Annexure 2
- 16. IEEE members in your institution :

Professional members: 6

Student members: 34

(Enclosed as Annexure 3)

- 17. Financial support requested from IEEE Madras Section: Rs.10,000
- 18. Did the organizers receive any funding from IEEE Madras Section in this calendar

year for any other events? If yes, please indicate :No

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Totalamount Year		Purpose	Whether the accounts Have been submitted	
NIL	-	-	-	
-	-	-	-	

19. Whether you are willing to provide any free registration to IEEE MAS so that either members of IEEE MAS organizational body or its duly nominated members can attend:

If yes, how many free registrations will be provided for IEEE MAS: 5

- 20. Mention the name of the authority who will be responsible for submitting the audited statement of accounts for the present grant ,if sanctioned : Dr.A.Albert Martin Ruban, Associate Professor and Head/EEE, Kings College of Engineering
- 21. Bank details for funding

Name of IEEE SB Bank account:

Kings College of Engineering-IEEE Student Branch

Bank name: Indian Overseas Bank

IFSC:IOBA0001364

Account number:136401000021966

(Either cheque or online fund transfer will be made as per discretion of IEEE MAS)

### Joint Declaration:

We confirm that all details furnished above are correct to the best of our knowledge. Complete program schedule and detailed budget is enclosed (with signature by the organizer) as Annexure 1 and Annexure 2 along with this. We confirm that the details in the annexures are true.

Signature of the Organizer With seal

Dr.A.A.BERT MARTIN RUBAN, M.E. M.D... Head of the Department Department of Electrical and Electronics Engineering, Kings College of Engineering, Punelkulam, Puduktottai - 613 383.

J. mare toma 12-18-12021.

Signature of the IEEE SB Counsellor With seal



Dr. J. Arputha Vijaya Selvi, B.E. M E., Ph.D., PROFESSOR / ECE Kings College of Engineering, Punalkulam, Gandarvakkottai 1k, Pudukkottai District - 613 300, Tomilnadu.



### Annexure 1

Date	Time	Торіс	Resource Person
8.11.2021	10.00 A.M to 12.30 P.M	Distributed Generation and Micro-Grids	Dr.M.Venkatakirthiga, Associate Professor/EEE National Institute of Technology, Trichy
8.11.2021	2.00 P.M to 4.00 P.M	Introduction to Artificial Intelligence	Dr.M.Meenalochani, AP/EEE
9.11.2021	10.00 A.M to 12.30 P.M	Optimization Techniques in Smart Grid	Kings College of Engineering Dr.S.Sivakumar Professor/EEE Kings College of Engineering
9.11.2021	2.00 P.M to 4.00 P.M	Hybrid algorithms for optimal DG generation	Dr.N.Kumarappan, Chair, IEEE Madras Section Professor/EEE Annamalai University

## Annexure 2

Budget Estimates (Online mode):

Head of expenditure	Amount(in Rupees)	
Honorarium to Resource persons	10000	

Å Signature of the Organizer



## Annexure 3

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List of IEEE student members in the institution:

S. No	Membership Number	Name
1.	96075602	Mr. S. Rajarajan
2.	97571204	Ms. S. Puvaneswari
3.	97583523	Ms. R. Suganthalakshmi
4.	92737814	Ms. R. Ponni
5.	93393158	Mr. T. Pasupathi
6.	94349595	Mr. P. Raja Pirian
7.	97506397	Mr. K. Sudarsanan
8.	97506372	Mr. S. Ramarajan
9.	97528470	Mr. R. Thandayuthapani
10.	94353184	Ms. S. Rajeswari
11.	93086892	Mr. R. Sundaramoorthi
12.	97520114	Mr. J. Arokkiaraj
13.	97528460	Mr. S.R. Karthikeyan
14.	93316102	Mr. P. Rajasekar
15.	90736553	Mr. S.V. Vijaya Karthik
16.	97583331	Ms. G. Suguna
17.	97530445	Ms. S. Aparnaa
18.	97591798	Ms. C.Srimathi
19.	97591918	Ms. V.Vishwabhararhy
20.	97591824	Ms. P.V.Vaishnavi
21.	97591880	Ms. R.Surya
22.	97593752	Ms. M.Vinotha
23.	97629652	Ms. P. Shobiga
24.	97567243	Ms. Tamil Elackiya K
25.	97574816	Ms. K.Aiswarya
26.	97574811	Ms. G.Divyabharathi
27.	97571245	Ms. J.FasilaAfreen
28.	97404848	Ms. J.Gayathri
29.	97574837	Mr. B.Gunaseelan
30.	97574845	Mr. E.Hariharan
31.	97574805	Ms. T.Selvarani
32.	97571213	Ms. S.Suruthi
33.	97574758	Mr. K.Varun
34.	97674719	Mr. A B Avudaiappan

Signature of the Organizer



List of IEEE Professional members in the institution:

S. No	Membership Number	Name
1	90234387	Dr. J. Arputha Vijaya Selvi
2	92569286	Dr. S. Sivakumar
3	96093278	Dr. A. Albert Martin Ruben
4	96098845	Dr. S.M. Uma
5	94222998	Dr. T. Shanthi
6	96099917	Dr. D. Sivakumar



# IEEE - Proposal - Financial Support - Faculty Development Programme - reg.,

**Joseph Gladwin** <josephgladwins@gmail.com> To: principal@kingsengg.edu.in Cc: Kumarappan N <kumarappan.ieee@gmail.com> Tue, Aug 17, 2021 at 7:55 AM

Dear Dr. J. Arputha Vijaya Selvi

Based on the active IEEE SB members in your college, IEEE MAS can financially support up to Rs. 10000/- (Rupees Ten Thousand only) two day FDP planned during 8-9 November, 2021.

This amount 10000/- is therefore approved for your proposal.

The amount can be claimed as Reimbursement upon submission of following documents:

- 1. Event reporting as per guidelines for IEEE MASLINK Newsletter
- 2. Utilization certificate signed both by IEEE SB Counsellor and Principal
- 3. Necessary bills in original. Initially scanned copies can be sent for processing payments.
- 4. Proper acknowledgement upon receipt of payment.

Regards,

**Dr. S. Joseph Gladwin M.E., Ph.D.,** Treasurer, IEEE Madras Section & Secretary, IEEE AP-S Madras Chapter

[Quoted text hidden]

From

Dr.M.Meenalochani Assistant Professor/EEE Kings College of Engineering Punalkulam

To The Principal Kings College of Engineering Punalkulam

Through HoD/EEE,

Respected Madam,

Sub: Seeking Permission for conducting three day IEEE MAS section sponsored FDP -reg

A three day Faculty Development Program on "Smart Grid-Trends and Future Perspective" is planned to be conducted by the department of Electrical and Electronics Engineering on 8.11.21 and 9.11.21. The FDP is approved by IEEE Madras section and a financial support of Rs. 10,000/- is sanctioned. In this regard, we request you to grant us permission for conducting the same.

Thanking you,

Punalkulam,

23.08.21

Yours Sincerely,

OD. COBSE

Submitted to the Ruineipal Allmm 23/8/21 J. 123/8/2021.







# A REPORT ON

# IEEE MAS SPONSORED FACULTY DEVELOPMENT PROGRAM TITLED

# "SMART GRID- TRENDS AND FUTURE PERSPECTIVE"

8<sup>th</sup> and 9<sup>th</sup> NOVEMBER 2021

Organized by

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

KINGS COLLEGE OF ENGINEERING, PUNALKULAM

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### INTRODUCTION

Department of Electrical and Electronics Engineering has organized a Faculty Development Program on **"SMART GRID- TRENDS AND FUTURE PERSPECTIVE"** on 8<sup>th</sup> and 9<sup>th</sup> November, 2021. Smart grid technology aims to bring utility electricity delivery systems into the 21st century, using computer-based remote control and automation. These systems are made possible by two-way communication technology and computer processing that has been used for decades in other industries. The rise of smart grid is a boon not only to society as a whole but to all who are involved in the electric power industry, its customers, and its many stakeholders. The aim of organizers is to bring up professional discussions on smart grid technologies and its trends to provide dissemination of the knowledge to the participants.

#### **OBJECTIVES**

- To educate the participants about the concept of smart grid, the rationale for smart grid technology and its characteristics
- To provide a detailed exposure to faculty members about the most recent innovations and trends in the field of smart grid

### **ABOUT THE FDP**

The FDP was planned to be conducted in virtual mode. Dr. A. Albert Martin Ruban, HOD/EEE was the convener and Dr.M.Meenalochani AP/EEE was the coordinator of the FDP. The registration link was created through Google forms and the link was circulated through social media websites and WhatsApp groups. Around 80 responses were received from various institutions. A confirmation mail was sent for all the registered participants. The registered participants were asked to join in the whatsapp group named "IEEE FDP on Smart Grid". Instructions for all the events were given to the participants through the respective whatsapp group. The meeting link was circulated to all the registered participants one day before the commencement of the FDP through their e-mail and also through the WhatsApp group.

#### **DETAILS OF RESOURCE PERSONS**

Day1- Session 1:Dr.M.Venkatakirthiga,Associate Professor/EEENational Institute of Technology, Trichy

2

Day1- Session 2:	Dr.M.Meenalochani
	Assistant Professor/EEE
	Kings College of Engineering
Day 2- Session 1:	Dr.R.Arulraj
	Assistant Professor/EEE
	Kings College of Engineering
Day 2- Session 2:	Dr.N.Kumarappan, Chair, IEEE Madras Section
	Professor/EEE
	Annamalai University

#### DAY 1(8.11.2021)

The FDP was inaugurated at 9.45 A.M on 8<sup>th</sup> November 2021. The Chief Guest to the session was Dr.N.Kumarappan, Chair, IEEE Madras Section. Dr.M.Meenalochani, coordinator of the FDP welcomed the dignitaries and participants. Dr.J.Arputha Vijaya Selvi, Principal of KCE delivered the Presidential Address. In her address, she highlighted the importance of smart grid and the role of smart grid in India. The inaugural address was given by Dr.N.Kumarappan. In his address, he appreciated Kings College of Engineering for organizing such a program and welcomed all the enthusiastic participants. He explained the emergence of different types of electric grids such as micro grids, nano grids, super grids and gave an introduction to smart grid technology. He also stated that success of an FDP lies in the dissemination of knowledge gained by faculty to their students in an efficient manner.

Then the session was handed over to the Resource person Dr.M.Venkatakirthiga ,Associate Professor/EEE, NIT, Trichy. She gave an introduction to distributed generation and microgrids. She also detailed about the architecture and modes of operation of microgrids. A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island-mode. She lectured on the concepts of smart grid, its components and a brief introduction to electric vehicles. The session ended at 12.30 P.M.

The next session was started at 2.00 P.M. The resource person for session 2 was Dr.M.Meenalochani, AP/EEE, Kings College of Engineering. The topic of her presentation was Artificial Intelligence (AI) in smart grid. She gave an overview of human intelligence and the concepts of AI. She highlighted the real time examples of AI applications used in websites such as Amazon, Facebook, Netflix etc. where the AI based systems give recommendations to human

beings based on their search. Then, she briefed her lecture on different AI techniques such as Artificial Neural Networks, fuzzy logic, computer vision, machine learning, deep learning etc. and detailed on fuzzy logic. She explained in detail about the basics of fuzzy logic, difference between fuzzy and conventional Boolean logic and the similarity between fuzzy logic and human reasoning. Finally, she concluded with the advantages and applications of fuzzy logic in real time. The session ended at 3.30 P.M.

#### Day 2(9.11.2021)

On the second day, the forenoon session was started at 10.00 A.M. The resource person for session 3 was Dr.R.Arulraj, AP/EEE, Kings College of Engineering. The topic of his presentation was optimization techniques. He lectured on the basics of optimization and how to solve any optimization problem. He explained real time applications of optimization problems and the methods for solving those problems. He detailed on the terminology in optimization such as objective function, decision variables, constraints etc. with examples. He provided an in-depth knowledge on formation of objective function for any optimization problem. He gave an introduction to genetic algorithm for solving an optimization problem. The session ended at 11.30 A.M.

The afternoon session started at 2.00 P.M. The resource person was Dr.N.Kumarappan, IEEE MAS Chair and Professor/EEE, Annamalai University. He delivered his lecture on grid to vehicle integration using hybrid optimization techniques. He clearly explained the bidirectional transfer of power in interconnected systems. The participants were taught about the basics of hybrid optimization algorithm used for vehicle to grid power transfer. The hybrid algorithm utilizes the benefits of Tabu search as well as binary Particle Swarm Optimization. The algorithm aims to reduce the operating cost and emissions and increase the reserving capacity of the vehicle. The session finally ended up at 3.30 P.M. Mr.T.Pasupathi, AP/ECE and IEEE SB In-charge, delivered **V**ote of thanks for the FDP.

#### **OUTCOMES**

- Participants are enhanced with the knowledge on smart grid and the latest innovations in Smart Grid
- The content knowledge of the participants in the respective domain is updated
- Faculty can be able to make the students aware in smart grid and guide them for doing projects in that area

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### Utilization Certificate

: STB16621

Name of the Institute

Branch Code

: Kings College of Engineering

Certified that out of the grant-in-aid of Rs. 10,000/- (Rupees Ten Thousand only) sanctioned by the IEEE Madras Section for organizing FDP on Smart Grid : Trends and Future Perspective during the Financial Year 2021-22 as per email dt. 17.08.2021, a sum of Rs. 10,000/- (Rupees Ten Thousand only) has been utilized for the purpose for which it was sanctioned, and the balance of Rs. 0.00/- remained unutilized at the end of the year 2021-22.

J. Moreter 12/11/2021

Signature of Student Branch Counselor Name: Dr. J. Arputha Vijaya Selvi Designation: Professor / ECE

IEEE 16621 SBC Kings College of Engineering Bunalkulam - 613 303.

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Signature of the Treasurer Name Dr. A. Albert Martin Ruban Assoc. Professor & Head / EEE

J. 10000 12/11/2021

Signature of Head of the Institute Name: Dr. J. Arputha Vijaya Selvi Designation: Principal

> PRINCIPAL Kings College of Engineering. PUNALKULAM - 613 303,

Date

Place : Punalkulam : 12.11.2021



# DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

IEEE sponsored FDP on "Smart Grid- Trends and Future Perspective"

Dates: 8.11.21 and 9.11.21

# **Details of Remuneration**

Resource Person details	Mode of Transfer	Amount
Dr.M.Venkatakirthiga, Assoc.Prof/EEE, NIT Trichy	Online Transfer	Rs.3,500/-
Dr.N.Kumarappan, Prof/EEE, Annamalai University	Online Transfer	- Rs.3,500/-
Dr.M.Meenalochani,AP/EEE, Kings College of Engineering	Cash-Voucher	Rs.1,500/-
Dr.R.Arulraj AP/EEE, Kings College of Engineering	Cash-Voucher	Rs.1,500/-
	Total	Rs. 10,000/-

15/11/2021,

Principal

cel. cobo 11/21 Cô-Ordinator



# தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்

TAMIL NADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY (Established by Government of Tamilnadu) Directorate of Technical Education Campus, Chennai – 600 025 Ph : 044-22301428, Telefax : 044-22301552 www.tanscst.nic.in

Dr.R.Srinivasan, M.Sc., Ph.D.,F.I.C.S., M.A.C.S.(USA)., Member Secretary

Lr.No.TNSCST/SPS/2021-2022/

To The Principal Kings College of Engineering Punalkulam, Pudukkottai-613303



Sir/Madam,

Sub: TNSCST -- Student Project Scheme (2021-2022) - approval intimation-grant release- reg.

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With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and seminar paper in time.

No	Guide Name and Institutional Address	Title of the Project	Students Name	Project Code	Amount
1	Mr.S.Desikan Assistant Professor, Dept. of Mechanical Engineering Kings College of Engg Pudukkottai-613303	Design and Fabrication of Automatic Urinal Flushing System	R.Karthikeyan D.Akashraja S.Fazilahamed M.Kailashkumar	EME-1040	7500/-
2	Ms.R.Buvaneshwari Assistant Professor, Department <sup>•</sup> of Civil Engineering Kings College of Engg Pudukkottai-613303	Comparative Study Of Normal Paver Block With Partial Replacement Of Sand by Saw Dust	A.Patrick Antony Samy, S.Chandru, A.Joshi	ECV-431	7500/-
¢.	Dr.R.Arulraj Assistant Professor, Dept. of EEE Kings College of Engg Pudukkottai-613303	Optimal distributed generation planning in distribution network using efficient evolutionary algorithm	S.Chandra kumar G.Santhosh G.Santhosh	EEE-1720	7500/-

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest.

Kindly send the utilisation certificate (format enclosed) and seminar paper (Ref.T&C-No.5&6) on completion of the project.

Thanking you,

Yours faithfully,

Member Secretary.

Encl: a) Terms & Conditions (T&C)

- b) Format of Utilisation Certificate (UC)
- c) Cheque for Rs. 22,500/- No: 207214 dt:11.03.2022

# Details of Amount Received from TNSCST

We have received a sum of Rs. 22,500/- towards student project TNSCST, Chennai as detailed below

		Purpose	Amount
From / Date	Dept.	ruipose	
/ Cheque No		Comparative study of normal paver block with	7500.00
TNSCST, Chennai 11.03.2022 207214 ~	EEE	partial replacement of sand by saw dust     Optimal distributed generation planning in     distribution network using efficient	7500.00
207214	MECH	evolutionary algorithm       Design and fabrication of automatic urinal	7500.00
- Carl		flushing system Total	22500.00

In this regard, we request you to kindly permit us to withdraw the amount from the SB account and disperse to the students.

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ŋ	Thank you,		J. Norute 25/3/202	2 102 13/2	
1	Regards,	No No			
	Almy 25/53/2022	25/2/	A Barriston		
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	- weing		अव	ा करें ₹ 22,5	500/-
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L	and a second	FOR MEMBER	SECRETARY, TAMILNADI	U STATE COUNCIL SCIEN	CE & TECHNOLOGY
		CBS Code: 0	1636	Dr	Burn

992000090

PAYABLE AT PAR AT ALL OUR BRANCHES

AUTHORISED SIGNATORY Please sign above

" 207214" 600019119: 31 135159

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# TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY DOTE CAMPUS, CHENNAI - 600 025

# STUDENT PROJECT SCHEME 2021-2022 UTILISATION CERTIFICATE

# (TWO COPIES)

 Name of the guide and address
Mr.S. Desikan, Assistant Professor, Department of Mechanical Engineering, Kings Cellege of Engineering, Punal Kulam - 613303
Name of the student(s)
R.Karthikeyan D: Akash raja S. Fasil ahmed M.Kailash Kumaq.
Title of the project
Design and Fabrication of automatic Uninal flushing System.

4. Project code

: EME 1040

It is certified that a sum of Rs.<u>1500/</u>. (Rupees Seven thousand & Five hundred . ) Sanctioned by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. .....<u>Crane</u>)......remaining unutilized is refunded.

Sp [D3.06.22 Signature of the guide T. Rulling 316/22 Signature of the HOD

J. 100000

Signature of the REGISTRAR/PRINCIPAL/DEAN With SEAL PRINCIPAL Kings College of Engineering. PUNALKULAM - 613 303.

# TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY DOTE CAMPUS, CHENNAL - 600 025

# STUDENT PROJECT SCHEME 2021 -202 7 UTILISATION CERTIFICATE

### (TWO COPIES)

1. Name of the guide and address

Mr. R. Basmissing Assa Processian DEPARTMENT of CIVIL ENGINE knows General of Laboute and PUSUKENTAL- EUL-S

2. Name of the student(s)

A PATRICE ANTINY CONT. S CHANDRU A - JOSHI CIV VE CIVIL) Comparities Sway of Nerral Kom

3. Title of the project

4. Project code

It is certified that a sum of Rs. 7.5 (Rupees Seven Thereads Add Sover Hundred by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. o/ - (ZERO) remaining unutilized is refunded.

ECV-431

\*Signature of the guide

Signature of the HOD

J. Terrathe Lallel 2020

Signature of the REGISTRAR/PRINCIPAL/DEAN With SEAL PRINCIPAL

Kings College of Engineering, PUNALKULAM - 613 303.

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY DOTE CAMPUS, CHENNAI - 600 025

### STUDENT PROJECT SCHEME 2021-2022 UTILISATION CERTIFICATE

#### (TWO COPIES)

1. Name of the guide and address

2. Name of the student(s)

Dr. R. Anuloraj, Ametant Professor, Department & EEE, Kings College of Engineering, Punalkulam - 613 303. S. Chardra Kumar, Gr. Santhosh, Gr. Santhosh. Optimal distributed generation planning in distribution network using efficient evolutionary algorithm.

3. Title of the project

4. Project code

: EEE-1720

It is certified that a sum of Rs. 7,500. (Rupees Seven ) Sanctioned by the council for carrying out above mentioned student project has been utilized for the purpose for which it was sanctioned and sum of Rs. 0/-

J- 100022

Signature of the REGISTRAR/PRINCIPAL/DEAN With SEAL

PRINCIPAL Kings College of Engineering, PUNALKULAM - 613 303.