



CENTRE FOR RESEARCH  
ANNA UNIVERSITY, CHENNAI-600 025



CERTIFICATE

This is to certify that all corrections and suggestions pointed out by the Indian /Foreign Examiner(s) are incorporated in the Thesis titled " CROSS LAYER BASED ROUTING AND ADAPTIVE RATE ADJUSTMENT PROTOCOL USING FUZZY DECISION MODEL IN MANET " submitted by Mr. Narayanan.S

Signature of the Supervisor

Dr. Rani Thottungal, MA (ECO), M.E., Ph.D  
Professor & Head  
Department of EEE  
Kumaraguru College of Techno  
Coimbatore-641 049  
Tamilnadu, India

Place : Coimbatore

Date : 22/1/2017



# CENTRE FOR RESEARCH

ANNA UNIVERSITY, CHENNAI-600 025



iii

**Proceedings of the Ph.D. Viva-Voce Examination of Mr.Narayanan.S held at 10.00 AM on 23.01.2017 in B-Block Seminar Hall,Dept. of EEE, Kumaraguru College of Technology,Coimbatore**

The Ph.D. Viva-Voce Examination of Mr.Narayanan.S (Reg. No. 10900631064) on his/her Ph.D. Thesis Entitled " CROSS LAYER BASED ROUTING AND ADAPTIVE RATE ADJUSTMENT PROTOCOL USING FUZZY DECISION MODEL IN MANET " was conducted on **23.01.2017** at 10.00 AM in the B-Block Seminar Hall,Dept. of EEE, Kumaraguru College of Technology,Coimbatore.

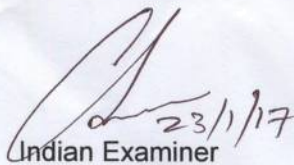
**The following Members of the Oral Examination Board were present:**

1. Dr. C.Saravanan,Assistant Professor,Computer Centre,National Institute of Technology ,Durgapur West Bengal 713 209 Indian Examiner
2. Dr. M S K Manikandan,Associate Professor,Department of Electronics and Communication Engineering,Thiagarajar College of Engineering,Madurai-625011 Subject Expert
3. Dr. Rani Thottungal.,Professor, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Supervisor & Convenor

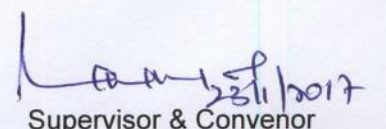
The research scholar, Mr. Narayanan.S presented the salient features of his/her Ph.D. work. This was followed by questions from the board members. The questions raised by the Foreign and Indian Examiners were also put to the scholar. The scholar answered the questions to the full satisfaction of the board members.

The corrections suggested by the Indian/Foreign examiner have been carried out and incorporated in the Thesis before the Oral examination.

Based on the scholars research work, his/her presentation and also the clarifications and answers by the scholar to the questions, the board recommends that Mr.Narayanan.S be awarded Ph.D. degree in the **Faculty of Information and Communication Engineering.**

  
Indian Examiner

  
Subject Expert

  
Supervisor & Convenor  
Dr. Rani Thottungal,MA (ECO),M.E. Ph.D  
Professor & Head  
Department of EEE  
Kumaraguru College of Technology  
Coimbatore-641 049  
Tamilnadu, India

**ANNA UNIVERSITY****CHENNAI 600 025****CERTIFICATE**

The research work embodied in the present Thesis entitled “**CROSS LAYER BASED ROUTING AND ADAPTIVE RATE ADJUSTMENT PROTOCOL USING FUZZY DECISION MODEL IN MANET**” has been carried out in the Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore. The work reported herein is original and does not from part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion or to any other scholar.

I understand the University’s policy on plagiarism and declare that the thesis and publications are my own work, except where specifically acknowledged and has not been copied from other sources or been previously submitted for award or assessment.

**NARAYANAN S**  
RESEARCH SCHOLAR

**Dr. RANI THOTTUNGAL**  
SUPERVISOR  
Professor  
Department of Electrical and  
Electronics Engineering  
Kumaraguru College of Technology  
Coimbatore 641049