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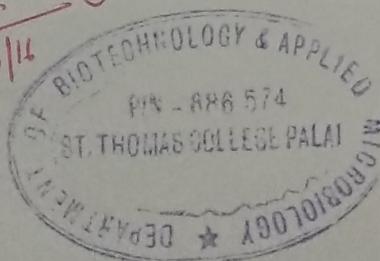
This is to certify that the dissertation entitled, *STUDIES ON BIOCONTROL ACTIVITY OF PLANT GROWTH PROMOTING RHIZOBACTERIA (PGPR)*, is an authentic work carried out by Miss. ANJANA MOHAN, as prescribed by Mahatma Gandhi University for the award of **Master of Science in Applied microbiology** during the academic year 2014-2016.

Date : 17/10/16

Teacher In-charge: Ms. Praveena George
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This is to certify that the bonafide report of the dissertation work entitled **“PROFILING OF ENZYME ACTIVITIES BY THE BACTERIA ISOLATED FROM DIFFERENT TISSUES OF GREEN MUSSEL (*Perna viridis*)”** is an authentic work carried out by **Anna J. Padamadan, Reg. No: 140011014735** in the Department of Applied microbiology & Biotechnology, St. Thomas College, Pala, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied microbiology during the academic year 2014-2016.

James Joseph
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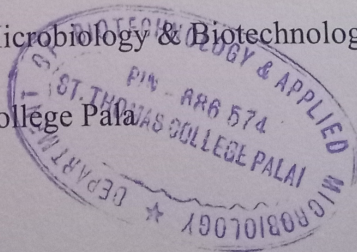
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Mr. Noby Mathew

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1. *Dr. Divya Sara Varghese*

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This is to certify that the dissertation entitled, "Screening and optimization of microbial strains for cellulase production and its application in Bioethanol production", is an authentic work carried out by Ms. ASHAMOL SHAJU, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied Microbiology during the academic year 2015-2016.

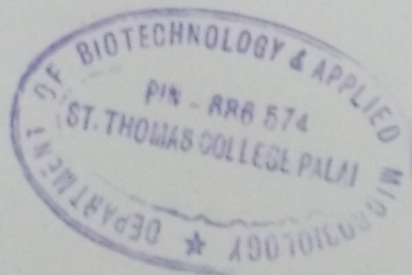
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This is to certify that the dissertation entitled, "**EXTRACELLULAR VIRULENCE FACTORS OF BACTERIAL PATHOGENS OF DISEASED ETROPLUS SURATENSIS**", is an authentic work carried out by Miss. ASWATHY CHANDRAN, Reg. No: 140011014738 as prescribed by Mahatma Gandhi University for the award of **Master of Science in Applied Microbiology** during the period July to September, 2016.

Prof. James Joseph

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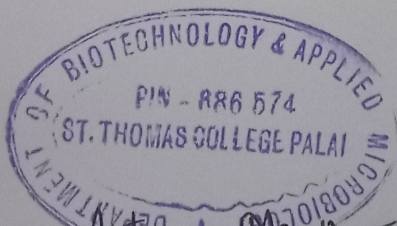
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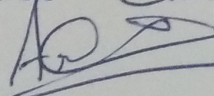
Name : BIBISHA S

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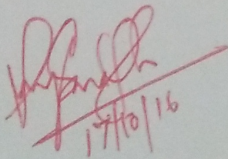
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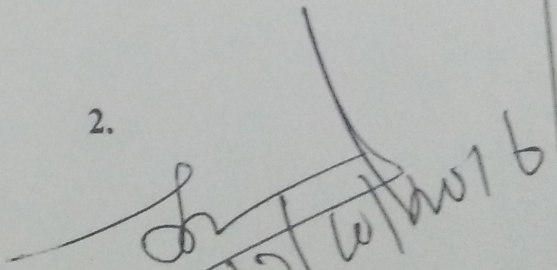
Archana Cheriyan


Examiners: 1.

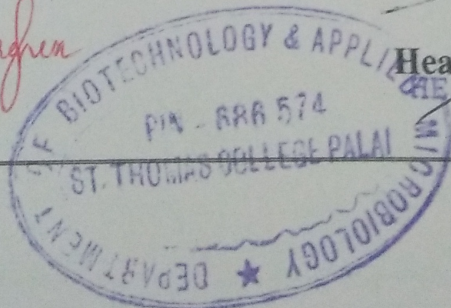

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Dr. Lincy Sara Vargha

2.


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Head of the Department



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This is to certify that the dissertation entitled, "Distribution of Antibiotic resistance and Biofilm formation properties Among bacterial isolates from diseased *Etropus suratensis*", is an authentic work carried out by Miss. Chinnu Benny, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied Microbiology during the period July- September 2016.

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This is certify that the bonafide report of the project work entitled "PHYTOCHEMICAL ANALYSIS AND INVITRO ANTIBACTERIAL ACTIVITY OF COCOS NUCIFERA ROOT EXTRACT AGAINST MULTIDRUG RESISTANT DENTAL CARIES CAUSING STREPTOCOCCUS MUTANS" Carried out by Miss. **DANYMOL DAYI**, Reg. No:140011014741 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the guidance of Mr. **NOBY MATHEW** during the academic year 2014- 2016 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied Microbiology under Mahatma Gandhi University.

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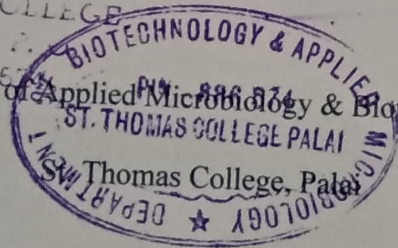
Certified that this is a bonafide report of the project work entitled "OIL DEGRADATION ASSESSMENT OF LIPASE PRODUCING MICROORGANISM" carried out by Ms. DEENAMOL JOSEPH, Reg. No:140011014742 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the guidance of Dr. SUNITHA POULOSE during the academic year 2014- 2016 towards the partial fulfillment of the requirement for the award of Master Degree in Biotechnology under Mahatma Gandhi University.

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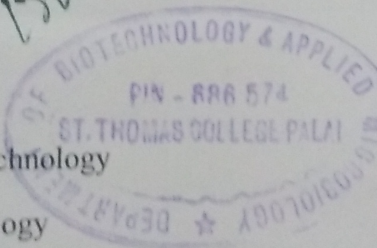
This is to certify that the dissertation entitled, "RELATIVE PREVALENCE OF MOTILE AEROMONADS IN FISH AND MEAT SAMPLE FROM RETAIL MARKETS AROUND COCHIN", is an authentic work carried out by **Miss. DIVYA JOHN**, Reg. No: 140011014743 as prescribed by Mahatma Gandhi University for the award of **Master of Science in Applied Microbiology** during the period July to September, 2016.

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Certified that this is a bonafide report of the project work entitled "INVITRO ANTIOXIDANT, ANTIBACTERIAL, AND ANTIFUNGAL ACTIVITY OF CINNAMOMUM VERUM BARK EXTRACT AGAINST FOOD BORNE SPOILAGE ORGANISMS" carried out by DIVYAMOL ABRAHAM Reg. No: 140011014744 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the guidance of Mr. NOBY MATHEW during the academic year 2013- 2015 towards the partial fulfillment of the requirement for the award of Master Degree in APPLIED MICROBIOLOGY under Mahatma Gandhi University.

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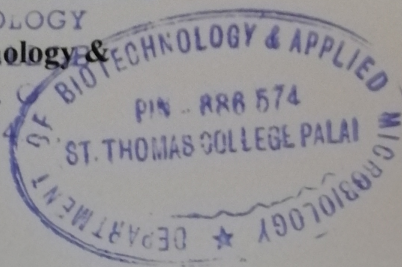
Name : GREESHMA R

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This is to certify that the dissertation entitled, A STUDY ON EFFECTIVE MICROORGANISM (EM) TECHNOLOGY IN HOME WASTE MANAGEMENT AND IN UNFERTILE SOIL, is an authentic work carried out by Ms.GREESHMA R, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied microbiology during the academic year 2014-2016.

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Name : K. R. VIDYA

Reg. No : 140011014747

This is to certify that the dissertation entitled, *Transgressive Segregation For Disease Resistance to Two Major Fungal Pathogens of Rubber: Phytophthora meadii and Corynespora cassiicola in An Interspecific cross Between Hevea brasiliensis and H. benthamiana*, is an authentic work carried out by K. R. Vidya as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied Microbiology during the period July to September, 2016.

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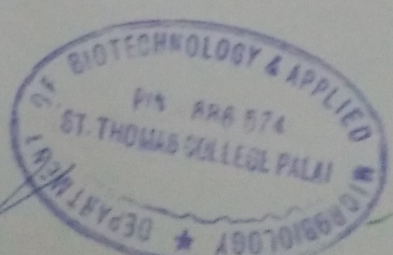
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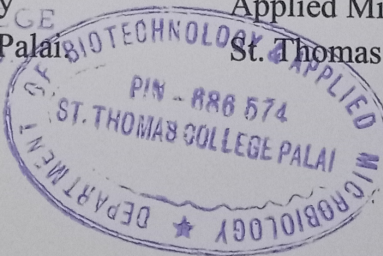
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2. Dr. Marya Antony Marya
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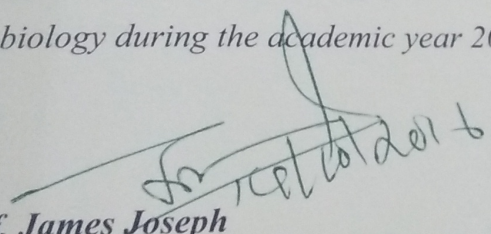


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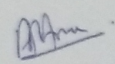
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This is to certify that the bonafide report of the dissertation work entitled "IN-VITRO SCREENING OF BACTERIA ISOLATED FROM DIFFERENT TISSUES OF GREEN MUSSEL (PERNA VIRIDIS) FOR THEIR ANTAGONISTIC AND BIOREMEDIATION POTENTIAL" is an authentic work carried out by **Manjari j Naik, Reg. No: 140011014749** in the Department of Applied microbiology & Biotechnology, St. Thomas College, Pala, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied microbiology during the academic year 2014-2016.


Prof. James Joseph

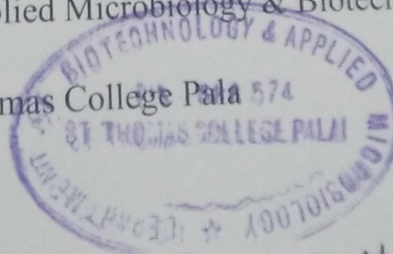
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Mrs. Anupama K. S.

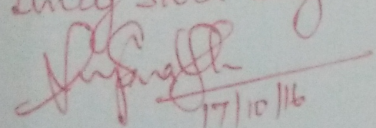
Faculty Member

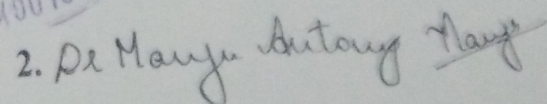
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This is to certify that the dissertation entitled, *ISOLATION AND ANTIMICROBIAL SENSITIVITY PATTERN OF SALMONELLA FROM SEAFOODS*, is an authentic work carried out by Miss. NAVAMI KRISHNA, as prescribed by Mahatma Gandhi University for the award of **Master of Science in Applied Microbiology** during the period July- September 2016.

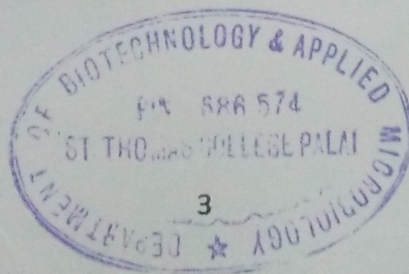
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Certified that this is a bonafide report of the project work entitled "The phytochemical evaluation, antioxidant assay and in vitro antibacterial activity of *Moringa oleifera* against multi-drug resistant *Staphylococcus aureus* isolated from wounds of diabetic patients" carried out by Miss. NISHA JAMES, Reg. No:140011014751 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the guidance of Mr. NOBY MATHEW during the academic year 2013- 2015 towards the partial fulfillment of the requirement for the award of Master Degree in Applied Microbiology under Mahatma Gandhi University.

Prof. James Joseph

Prof. JAMES JOSEPH

HEAD, DEPT. OF BIOTECHNOLOGY &
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Course Coordinator

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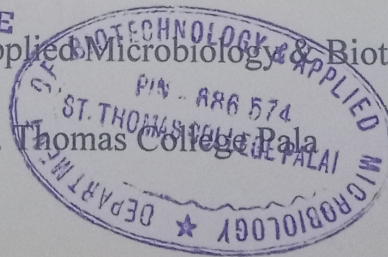
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Lucy Sara Varghese
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Mayya Antony



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Certificate

Name : RINI MOHAN

Reg. No: 140011014752

This is to certify that the dissertation entitled, "*DISEASES OF IMMATURE AND MATURE PINEAPPLE AND PASSION FRUITS AND THEIR CONTROL MEASURES*", is an authentic work carried out by Miss. RINI MOHAN, Reg. No: 140011014752 as prescribed by Mahatma Gandhi University for the award of **Master of Science in Applied Microbiology** during the period July to September, 2016.

Prof. James Joseph

Prof. JAMES JOSEPH
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Ms. Simi Jacob

Internal Guide, Lecturer

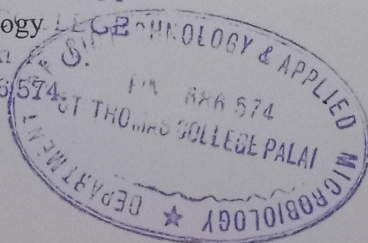
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Name : SHRUTHI P K

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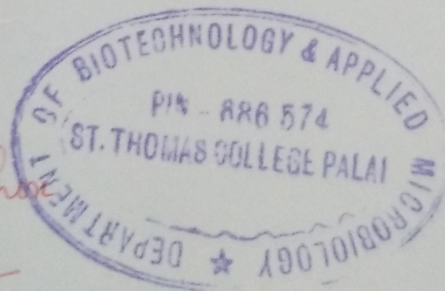
This is to certify that the dissertation entitled, *ISOLATION AND CHARACTERISATION OF POLYHYDROXYALKANOATES (PHA) PRODUCING BACTERIA FROM ENVIRONMENT*, is an authentic work carried out by Miss. SHRUTHI P K, as prescribed by Mahatma Gandhi University for the award of Master of Science in Applied microbiology during the academic year 2014-2016.

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Prof. James Joseph

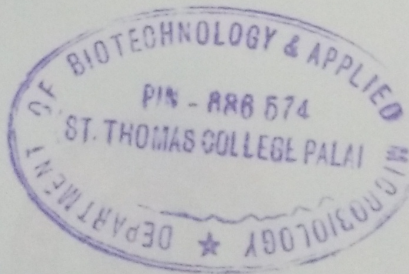
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Certified that this is a bonafide report of the project work entitled "BIOETHANOL PRODUCTION FROM CHEAP SUBSTRATE" carried out by Miss. THARA SREENIVASAN, Reg. No:140011014755 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the guidance of Dr. SUNITHA POULOSE during the academic year 2014- 2016 towards the partial fulfillment of the requirement for the award of Master Degree in Biotechnology under Mahatma Gandhi University.

Prof. James Joseph

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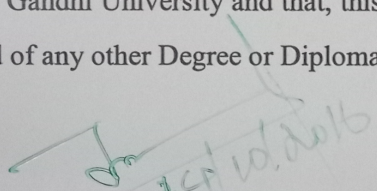


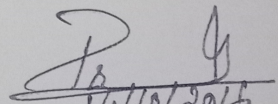
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UGC APPROVED COLLEGE WITH POTTENTIAL FOR EXCELLENCE
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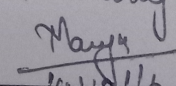
CERTIFICATE

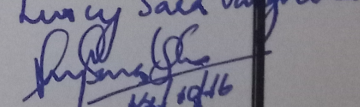
Certified that this is a bonafide report of the project work entitled "**Molecular taxonomic identification & *in vitro* evaluation of antioxidant, antiulcer & antimicrobial properties of *Musa paradisiaca***" carried out by **Mr. Vipin E.V**, Reg. No: 140011014756 in the Department of Biotechnology And Applied Microbiology, St. Thomas college, Palai under the internal guidance of **Ms. Praveena George**, during the academic year 2014-2016 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University and that, this research work has not formed the basis for the award of any other Degree or Diploma earlier.


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Mayra
14/10/16

2. **Dr. Lucy Saca Varghese**

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14/10/16