



Moodlakatte Institute of Technology

(A Unit of Moodlakatte Nagarathna Bhujanga Shetty Trust (R.))

(Approved by AICTE, New Delhi & Affiliated to VTU, Belagavi)

Moodlakatte - 576 217, Kundapura Taluk, Udupi District, Karnataka

PROBLEM SOLVING LEARNING METHODS

Student centric Problem Solving learning methods used to enhance the learning experience

- ASSIGNMENTS
- IDEATHON AND HACKATHON
- PROJECT WORK

Principal

Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Udupi Dist, Karnataka



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ASSIGNMENTS

The primary objective of engineering assignments is to build up the analytical and problem solving skills in a student. Assignments include questions mapping to higher order of thinking skills. After completion of each module of syllabus, students are given one assignment. In total, every student writes five assignments which help him/her in better understanding of the course and develops ability to go beyond the huddles and thereby inculcate lifelong learning. It promotes the problem solving based learning experience among the students.

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Moodlakatte, Kundapura - 576217

Udupi Dist, Karnataka

ASSIGNMENT-02

4) Expand $\log(1+\sin x)$ using Maclaurin's Series upto x^4

$$y(x) = y(0) + \frac{x}{1!} y_1(0) + \frac{x^2}{2!} y_2(0) + \frac{x^3}{3!} y_3(0) + \frac{x^4}{4!} y_4(0) + \dots$$

Consider $y = \log(1+\sin x)$

$$y(x) = \frac{\cos x}{1+\sin x}$$

$$y(0) = 0$$

$$y_1(0) = 1$$

$$y_2(0) = -1$$

$$y_3(0) = 1$$

$$y_4(0) = -2$$

$$y_2(x) = \frac{(1+\sin x)(-\sin x) - \cos x(\cos x)}{(1+\sin x)^2}$$

$$= \frac{-\sin x - \sin^2 x - \cos^2 x}{(1+\sin x)^2}$$

$$= \frac{-\sin x - (\sin^2 x + \cos^2 x)}{(1+\sin x)^2}$$

$$= \frac{-\sin x - 1}{(1+\sin x)^2} \Rightarrow \frac{1}{-(1+\sin x)}$$

$$y_3(x) = \frac{-(1+\sin x)(0) - (-\cos x)}{(1+\sin x)^2} = \frac{\cos x}{(1+\sin x)^2}$$

$$y_4(x) = \frac{(1+\sin x)^2(-\sin x) - 2(1+\sin x)\cos x(\cos x)}{(1+\sin x)^4}$$

$$y(x) = y(0) + \frac{x}{1!} y_1(0) + \frac{x^2}{2!} y_2(0) + \frac{x^3}{3!} y_3(0) + \frac{x^4}{4!} y_4(0)$$

$$= 0 + \frac{x}{1} (1) + \frac{x^2}{2} (-1) + \frac{x^3}{6} (1) + \frac{x^4}{24} (-2)$$

$$\log(1+\sin x) = x + \left(-\frac{x^2}{2}\right) + \frac{x^3}{6} + \left(-\frac{x^4}{12}\right)$$

$$\log(1+\sin x) = x - \frac{x^2}{2} + \frac{x^3}{6} - \frac{x^4}{12}$$

$$\rightarrow \text{Find } \lim_{x \rightarrow 0} \left(\frac{a^x + b^x + c^x}{3} \right)^{1/n}$$

$$k = \lim_{x \rightarrow 0} \left[\frac{a^x + b^x + c^x}{3} \right]^{1/n}$$

Take log on both sides.

$$\log k = \lim_{x \rightarrow 0} \log \left(\frac{a^x + b^x + c^x}{3} \right)^{1/n}$$

$$\log k = \lim_{x \rightarrow 0} \frac{1}{n} \log \left(\frac{a^x + b^x + c^x}{3} \right)$$

$$\log k = \lim_{x \rightarrow 0} \frac{\log(a^x + b^x + c^x) - \log 3}{x}$$

Apply L' Hospital Rule)

$$\log k = \lim_{x \rightarrow 0} \frac{1}{a^x + b^x + c^x} [a^x \log a + b^x \log b + c^x \log c - 0]$$

$$\log k = \lim_{x \rightarrow 0} \frac{a^x \log a + b^x \log b + c^x \log c}{a^x + b^x + c^x}$$

$$\log k = \frac{a^0 \log a + b^0 \log b + c^0 \log c}{a^0 + b^0 + c^0}$$

$$\log k = \frac{\log a + \log b + \log c}{3}$$

$$\log k = \frac{1}{3} \log(abc)$$

$$\log k = \log(abc)^{1/3}$$

$$k = (abc)^{1/3}$$

3) Find the extreme values of the function $f(x,y) = x^2 + y^2 + 6x - 12$

Soln :- gives

$$f(x,y) = x^2 + y^2 + 6x - 12$$

$$f_x = 2x + 0 + 6 = 0$$

$$f_x = 2x + 6 = 0 \rightarrow \textcircled{1}$$

$$f_y = 0 + 2y + 0$$

$$f_y = 2y = 0 \rightarrow \textcircled{2}$$

$$f_x = -3 \quad f_y = 0$$

Stationary points $(-3, 0)$

let $A = f_{xx}$

$B = f_{xy}$

$C = f_{yy}$

	$(-3, 0)$
$A = 2$	$2 > 0$
$B = 0$	0
$C = 2$	2
$AC - B^2$	$4 > 0$


Here $A > 0$ & $AC - B^2 > 0$

$$f(x,y) = x^2 + y^2 + 6x - 12$$

$$f(-3, 0) = (-3)^2 + 0^2 + 6(-3) - 12$$

$$= 9 - 18 - 12$$

$$= -21$$


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4) If $x = r \sin \theta \cos \phi$,
 $y = r \sin \theta \sin \phi$
 $z = r \cos \theta$

find $\frac{\partial(x, y, z)}{\partial(r, \theta, \phi)}$

Solu :- $x = r \sin \theta \cos \phi$

$y = r \sin \theta \sin \phi$

$z = r \cos \theta$

$$\frac{\partial(x, y, z)}{\partial(r, \theta, \phi)} = \begin{vmatrix} \frac{\partial x}{\partial r} & \frac{\partial x}{\partial \theta} & \frac{\partial x}{\partial \phi} \\ \frac{\partial y}{\partial r} & \frac{\partial y}{\partial \theta} & \frac{\partial y}{\partial \phi} \\ \frac{\partial z}{\partial r} & \frac{\partial z}{\partial \theta} & \frac{\partial z}{\partial \phi} \end{vmatrix}$$

$$= \begin{vmatrix} \sin \theta \cos \phi & r \cos \theta \cos \phi & r \sin \theta (-\sin \phi) \\ \sin \theta \sin \phi & r \cos \theta \sin \phi & r \sin \theta \cos \phi \\ \cos \theta & r(-\sin \theta) & 0 \end{vmatrix}$$

$$= \sin \theta \cos \phi (0 - (-r \sin \theta) r \sin \theta \cos \phi) - r \cos \theta \cos \phi$$

$$[0 - \cos \theta (r \sin \theta \cos \phi)] + r \sin \theta (-\sin \phi)$$

$$[-r \sin \theta (\sin \theta \cdot \sin \phi) - \cos \theta (r \cos \theta \sin \phi)]$$

$$= r^2 \sin^3 \theta \cos^2 \phi + r^2 \cos^2 \theta \cos^2 \phi \sin \theta + r^2 \sin^3 \theta \sin^2 \phi$$

$$+ r^2 \cos^2 \theta \sin \theta \sin^2 \phi$$

$$= r^2 \sin^3 \theta \cos^2 \phi + r^2 \sin^3 \theta \sin^2 \phi + r^2 \cos^2 \theta \cos^2 \phi \sin \theta + r^2 \cos^2 \theta \sin \theta \sin^2 \phi$$

$$= r^2 \sin^3 \theta (\cos^2 \phi + \sin^2 \phi) + r^2 \cos^2 \theta \sin \theta (\cos^2 \phi + \sin^2 \phi)$$

$$= r^2 \sin^3 \theta (1) + r^2 \cos^2 \theta \sin \theta (1)$$

$$= r^2 \sin \theta (\cos^2 \theta + \sin^2 \theta)$$

$$= r^2 \sin \theta (1)$$

$$= r^2 \sin \theta \quad , \text{ therefore } \frac{\partial(x, y, z)}{\partial(r, \theta, \phi)} = r^2 \sin \theta$$

5) Solve $\frac{dy}{dx} + \frac{y}{x} = y^2 x$

Soln :- Given :- $\frac{dy}{dx} + \frac{1}{x} \cdot y = x y^2 \rightarrow$ (1) is the Bernoulli's differential equation of the form

$$\frac{dy}{dx} + P y = Q y^n$$

where $P = \frac{1}{x}$ & $Q = x$

dividing eqn (1) throughout by y^2

$$\frac{1}{y^2} \frac{dy}{dx} + \frac{1}{x} \cdot \frac{y}{y^2} = x$$

$$\frac{1}{y^2} \frac{dy}{dx} + \frac{1}{x} \cdot \frac{1}{y} = x \rightarrow$$
 (2)

Put $\frac{1}{y} = t$

diff w.r to x

$$-\frac{1}{y^2} \frac{dy}{dx} = \frac{dt}{dx} \Rightarrow \frac{1}{y^2} \frac{dy}{dx} = -\frac{dt}{dx}$$

equation (2) becomes

$$-\frac{dt}{dx} + \frac{1}{x} \cdot t = x$$

multiply throughout by (-1)

$\frac{dt}{dx} - \frac{1}{x} \cdot t = -x$ is the linear differential equation of the form

$$\frac{dt}{dx} + P t = Q$$

where $P = \frac{1}{x}$ & $Q = -x$

Now I.F = $e^{\int P dx} = e^{\int (-1/x) dx} = e^{-\log x} = e^{\log x^{-1}} \Rightarrow$

I.F = $1/x$

The solution is

$$t e^{\int p dx} = \int (-x) e^{\int p dx} dx + C$$

$$t \frac{1}{u} = \int (-x) \frac{1}{x} dx + C$$

$$t \frac{1}{u} = \int (-1) dx + C$$

$$t \frac{1}{x} = -x + C$$

Resubstitute for $t = \frac{1}{y}$

$$\frac{1}{y} \frac{1}{x} = -x + C$$

$$\frac{1}{xy} = -x + C \quad \text{is the Required soln}$$

5) find orthogonal trajectories of $\frac{x^2}{a^2} + \frac{y^2}{b^2 + \lambda} = 1$

λ is parameter

Soln:- we have

$$\frac{x^2}{a^2} + \frac{y^2}{b^2 + \lambda} = 1 \rightarrow \textcircled{1}$$

diff w. r. to x

$$\frac{1}{a^2} 2x + \frac{1}{b^2 + \lambda} 2y \frac{dy}{dx} = 0$$

$$2 \left(\frac{x}{a^2} + \frac{y}{b^2 + \lambda} \frac{dy}{dx} \right) = 0$$

$$\frac{x}{a^2} + \frac{y}{b^2 + \lambda} \frac{dy}{dx} = 0$$

$$\frac{x}{a^2} = - \frac{y}{b^2 + \lambda} \frac{dy}{dx} \rightarrow \textcircled{2}$$

From equn ①

$$\frac{x^2}{a^2} - 1 = -\frac{y^2}{b^2 + \lambda}$$

$$\frac{x^2 - a^2}{a^2} = -\frac{y^2}{b^2 + \lambda} \rightarrow \textcircled{3}$$

dividing equn ② by ③

$$\frac{x}{a^2} = -\frac{y}{b^2 + \lambda} \frac{dy}{d\lambda}$$

$$\frac{x^2 - a^2}{a^2} = -\frac{y^2}{b^2 + \lambda}$$

$$\frac{x}{x^2 - a^2} = \frac{1}{y} \frac{dy}{d\lambda}$$

Replacing $\frac{dy}{dx}$ by $-\frac{d\lambda}{dy}$

$$\frac{x}{x^2 - a^2} = \frac{1}{y} \left(-\frac{d\lambda}{dy}\right)$$

$$y dy = -\frac{(x^2 - a^2)}{x} d\lambda$$

variables are separated

on integrating

$$\int y dy = -\int \left(\frac{x^2 - a^2}{x}\right) d\lambda + c$$

$$\int y dy + \int \left(\frac{x^2}{x} - \frac{a^2}{x}\right) d\lambda = c$$

$$\frac{y^2}{2} + \int x d\lambda - \int \frac{a^2}{x} d\lambda = c$$

$$\frac{y^2}{2} + \frac{x^2}{2} - a^2 \log x = c$$

multiply by 2

$y^2 + x^2 - 2a^2 \log x = k$ is the Required soln

$$7) \text{ Solve } p^2 + 2py \cot x - y^2 = 0$$

$$\text{Soln. given } p^2 + 2py \cot x - y^2 = 0$$

$$p^2 + (2y \cot x) p - y^2 = 0$$

$$p = \frac{-2y \cot x \pm \sqrt{4y^2 \cot^2 x - 4 \cdot 1 \cdot (-y^2)}}{2 \cdot 1}$$

$$p = \frac{-2y \cot x \pm \sqrt{4y^2 (\cot^2 x + 1)}}{2}$$

$$p = \frac{-2y \cot x \pm \sqrt{4y^2 \operatorname{cosec}^2 x}}{2}$$

$$p = \frac{-2y \cot x \pm 2y \operatorname{cosec} x}{2}$$

$$p = \frac{2y (-\cot x \pm \operatorname{cosec} x)}{2}$$

$$p = y (-\cot x \pm \operatorname{cosec} x)$$

$$p = y (-\cot x + \operatorname{cosec} x)$$

$$\frac{dy}{du} = y (-\cot x + \operatorname{cosec} x)$$

$$\frac{dy}{du} = (-\cot x + \operatorname{cosec} x) du \rightarrow \textcircled{1}$$

$$p = y (-\cot x - \operatorname{cosec} x)$$

$$\frac{dy}{du} = y (-\cot x - \operatorname{cosec} x)$$

$$\frac{dy}{du} = (-\cot x - \operatorname{cosec} x) du \rightarrow \textcircled{2}$$

on integrating equⁿ ①

$$\int \frac{dy}{y} = \int -\cot x \, du + \int \operatorname{cosec} x \, du$$

$$\log y = -\log (\sin x) + \log (\operatorname{cosec} x - \cot x) + \log c$$

$$\log y = \log (\operatorname{cosec} x - \cot x) - \log (\sin x) + \log c$$

$$\log y = \log \left(\frac{1}{\sin x} - \frac{\cos x}{\sin x} \right) - \log (\sin x) + \log c$$

$$\log y = \log \left(\frac{1 - \cos x}{\sin x} \right) - \log (\sin x) + \log c$$

$$\log y = \log \left(\frac{2 \sin^2 x/2}{2 \sin x/2 \cos x/2} \right) - \log (\sin x) + \log c$$

$$\log y = \log (\tan x/2) - \log (\sin x) + \log c$$

$$\log y = \log \left[\frac{\tan x/2}{\sin x} \right] + \log c$$

$$\log y = \log \left[\frac{\tan x/2}{\sin x} \right] + \log c$$

$$\log \left[\frac{y}{\frac{\tan x/2}{\sin x}} \right] = \log c$$

$$y \sin x = c$$

$$y \sin x - c \tan x/2 = 0$$

On integrating

$$\int \frac{dy}{y} = \int -\cot u \, du - \int \operatorname{cosec} x \, dx$$

$$\log y = -\log (\sin x) - \log (\operatorname{cosec} x - \cot x) + \log c$$

$$\log y = -(\log (\sin x)) + \log (\operatorname{cosec} x - \cot x) + \log c$$

$$\log y = \log [\sin x (\operatorname{cosec} x - \cot x)] + \log c$$

$$\log y = \log [\sin x \operatorname{cosec} x - \sin x \cot x] + \log c$$

$$\log y = -\log (1 - \cos x) + \log c$$

$$\log y = -\log (2 \sin^2 x/2) + \log c$$

$$\log y + \log (2 \sin^2 x/2) = \log c$$

$$\log \left[\frac{y}{2 \sin^2 x/2} \right] = \log c$$



$$2y \sin^2 x/2 = C$$

$$2y \sin^2 x/2 - C = 0$$

The General solution is

$$(y \sin x - C \tan x/2) (2y \sin^2 x/2 - C) = 0$$

8) Solve $(x^2 + y^2 + x) dx + xy dy = 0$

Given, $(x^2 + y^2 + x) dx + xy dy = 0 \rightarrow \textcircled{1}$

$$M = x^2 + y^2 + x$$

$$N = xy$$

$$\frac{\partial M}{\partial y} = 2y$$

$$\frac{\partial N}{\partial x} = y$$

$$\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x}$$

$$\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} = 2y - y$$

$$= y \text{ nearer to } N$$

Consider, $\frac{1}{N} \left(\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x} \right) = \frac{1}{xy} (y) \Rightarrow \frac{1}{x} \Rightarrow f(x)$

$$\text{I.F.} = e^{\int f(x) dx} = e^{\int (1/x) dx} = e^{\log x} = x$$

multiply eqn $\textcircled{1}$ by x

$$(x^3 + xy^2 + x^2) dx + x^2y dy = 0$$

$$M = x^3 + xy^2 + x^2$$

$$N = x^2y$$

$$\frac{\partial M}{\partial y} = 2xy$$

$$\frac{\partial N}{\partial x} = 2xy$$

$$\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$$

The solution is

$$\int M dx + \int N(y) dy = C$$

$$\int (x^3 + xy^2 + x^2) dx + \int 0 dy = C$$

$$\frac{x^4}{4} + \frac{x^2}{2} y^2 + \frac{x^3}{3} = C$$

$$\frac{x^4}{4} + y^2 \frac{x^2}{2} + \frac{x^3}{3} = C \text{ is the Required soln}$$

9) Find least positive value of x such that

i) $71 \equiv x \pmod{8}$

$$8) \begin{array}{r} 71 \\ 64 \\ \hline 7 \end{array}$$

$$8 \mid 71 = 7$$

$$71 = 7 \pmod{8}$$

$$\therefore x = \underline{7}$$

ii) $78 + x \equiv 3 \pmod{5}$

$$5 \mid 78 + x - 3$$

$$78 + x - 3 = 5k$$

$$k \in \mathbb{Z}$$

$$75 + x = 5k$$

$$75 + 5 = 80$$

(80 is multiple of 5)

$$x = 5$$

iii) $89 \equiv (x+3) \pmod{4}$

$$89 - x - 3 = 4n \quad n \in \mathbb{Z}$$

$$86 - x = 4n$$

$$\text{let } x = 2 \quad 86 - 2 = 84 \text{ is a multiple of 4}$$

\therefore least value of x

10) find the Remainder when the number 2^{1000} is divided by 13

$$2^6 = 64 \equiv -1 \pmod{13}$$

$$(2^6)^{166} \equiv (-1)^{166} \pmod{13}$$

$$2^{996} \equiv 1 \pmod{13} \rightarrow \textcircled{1}$$


$$\text{but } 2^4 = 16 \equiv 3 \pmod{13} \rightarrow \textcircled{2}$$

multiply eqn $\textcircled{1}$ & $\textcircled{2}$

$$2^{996} \cdot 2^4 \equiv 3 \pmod{13}$$

$$2^{1000} \equiv 3 \pmod{13}$$

Remainder is 3


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HACKATHON

Participation in Hackathon, students can improve their problem-solving based learning. It helps students in exploring new technologies, driving business innovation, sourcing incubation programs and creating potential startups.

SHRI MADHWA VADIRAJA INSTITUTE OF TECHNOLOGY AND MANAGEMENT

CodeTroopers
SMVITM

HACKOTHSAVA-2023

niveas KAYBALA CEIWM

CERTIFICATE OF PARTICIPATION

This is to certify that Sibi Sebastian, a member of team Digital Dream from Moodlakatte Institute of Technology has participated under the TRANSFORMATIVE EDUCATION theme in Hackothsava-2023 held at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal on the 2nd & 3rd of June, 2023.

Sri G
Coordinators
Hackothsava-2023

Dr. Thirumaleshwara Bhat
Principal, SMVITM

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SHRI MADHWA VADIRAJA INSTITUTE OF TECHNOLOGY AND
MANAGEMENT




HACKOTHSAVA-2023




CERTIFICATE OF PARTICIPATION

This is to certify that Prathyusha, a member of team Digital Dream from Moodlakatte Institute of Technology has participated under the TRANSFORMATIVE EDUCATION theme in Hackothsava-2023 held at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal on the 2nd & 3rd of June, 2023.


Coordinators
Hackothsava-2023




Dr. Thirumaleshwara Bhat
Principal, SMVITM


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PROJECT WORK

Students develop mini projects and major projects in the engineering programme. Its main objective is to strengthen the understanding of fundamentals through effective application of theoretical concepts practically. It is a team-based activity and by working on project students develop abilities to work in and as a team. Projects also help students to boost skills and widen their horizon of thinking. It promotes the problem solving based learning experience among the students.

Number of students who have worked on Major Project (AY 2022-23)

Sl. No	Branch	AY 2022- 23
1	Computer Science and Engineering	61
2	Electronics and Communication Engineering	31
3	Civil Engineering	25
4	Mechanical Engineering	14
5	Master of Business Administration	21

Principal

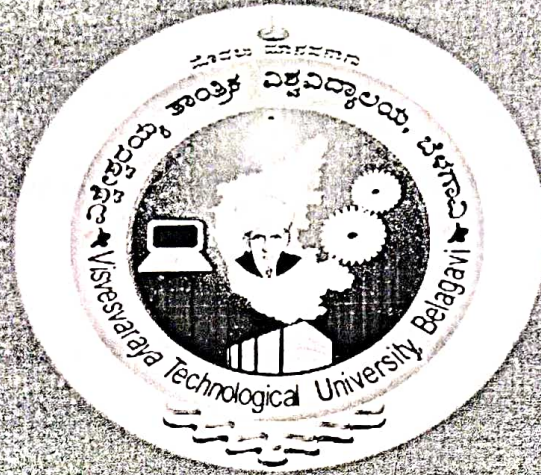
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VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA", BELAGAVI -590018, KARNATAKA



**A PROJECT REPORT
ON**

"TRANSFORMER HEALTH MONITORING SYSTEM"

Submitted in partial fulfillment of the requirement as part of the VIII Semester
Project Report

**BACHELOR OF ENGINEERING
IN**

ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

Mr. PRATHAM RAJESH RAYKAR

4MK19EC017

Mr. RAGHU B NAYKAR

4MK19EC019

Mr. SUMAAN KHAN R BAGEWADI

4MK19EC023

Mr. VEERENDRA P GOUDAR

4MK19EC027

UNDER THE GUIDANCE OF

Prof. AKSHATHA NAIK B.E., M.Tech

Assistant Professor (Sr.)

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION
ENGINEERING**



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Principal

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A WIDE
HORIZON
OPPORTUNITIES

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
"JNANA SANGAMA" BELAGAVI- 590018, KARNATAKA



A PROJECT REPORT ON
"TRANSFORMER HEALTH MONITORING SYSTEM"

Submitted in partial fulfillment of the requirement as part of the VIII Semester

Project Report

BACHELOR OF ENGINEERING
IN
ELECTRONICS AND COMMUNICATION ENGINEERING
Submitted by

PRATHAM RAJESH RAYKAR	(4MK19EC017)
SUMAAN KHAN R BAGEWADI	(4MK19EC023)
VEERENDRA P GOUDAR	(4MK19EC027)
RAGHU B NAYKAR	(4MK19EC019)

UNDER THE GUIDANCE OF

Prof. AKSHATHA NAIK B.E., M.Tech
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING

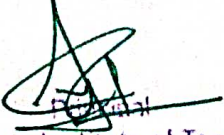


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2022-23

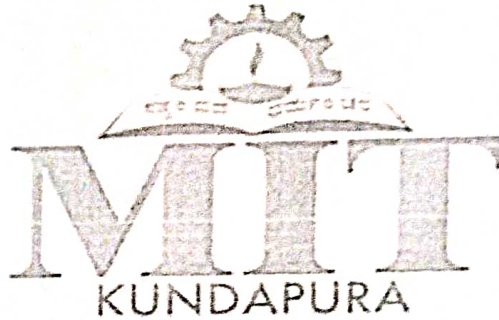
A WIDE
HORIZON
of
OPPORTUNITIES


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING CERTIFICATE

This is to certify that Mr. PRATHAM RAJESH RAYKAR (4MK19EC017), Mr. SUMAAN KHAN R BAGEWADI (4MK19EC023), Mr. VEERENDRA P GOUDAR (4MK19EC027) and Mr. RAGHU B NAYKAR (4MK19EC019) are satisfactorily completed the Project report prescribed by Visvesvaraya Technological University, Belagavi for the VIII Semester, in partial fulfillment of the requirements for the course of Bachelor of Engineering in Electronics and communication Engineering during the Academic Year 2022-2023

Guide

Prof. Akshatha Naik

Dept. of Electronics and
Communication Engineering

HOD

Prof. Balanageshwara S

Dept. of Electronics and
Communication Engineering

Principal

Dr. Abdul Kareem
MIT Kundapura

External Viva:

Name of Examiners

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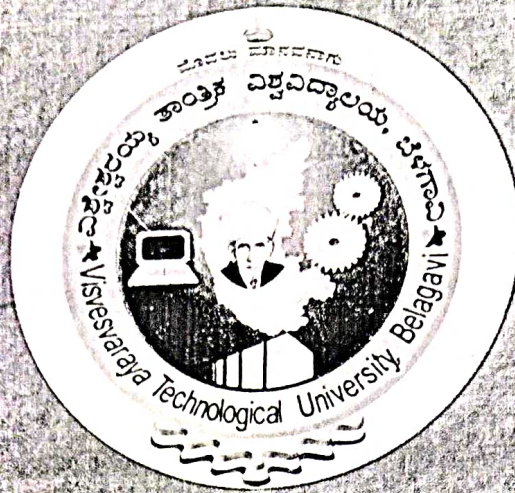
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1. 24/5/23

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Principal
Moodlakatte Institute of Technology
Moodlakatte, Kundapura - 576217
Hdupi Dist, Karnataka



A PROJECT REPORT

ON

AUTOMATIC WASTE SEGREGATION SYSTEM

Submitted in partial fulfillment of the requirement as part of the
Final Year Project (18ECP83)

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

By

MR. AMAR C BALAGANV

USN : 4MK19EC002

MR. ANIL N T

USN : 4MK20EC401

MR. CHANDAN KUMAR S NA

USN : 4MK19EC004

MR. VISHNUMOORTHY NAYAK

USN : 4MK19EC028

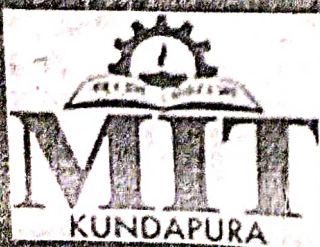
Under the guidance of

Prof. Varuna Kumara B.E, M.Tech (Ph.D)

Assistant Professor (Sr.)

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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING**



MOODLAKATTE INSTITUTE OF TECHNOLOGY KUNDAPURA

(Affiliated to VTU Belagavi, Approved by AICTE, New Delhi)

Moodlakatte 576217, Kundapura, Udupi District, Karnataka



VISVESVARAYA TECHNOLOGICAL UNIVERSITY
"JNANA SANGAMA" BELAGAVI- 590018, KARNATAKA



A PROJECT REPORT ON
"AUTOMATIC SOLID WASTE SEGREGATION SYSTEM"
Submitted in partial fulfillment of the requirement as part of the VIII Semester
Project Report
BACHELOR OF ENGINEERING
IN
ELECTRONICS AND COMMUNICATION ENGINEERING
Submitted by

Mr. AMAR C BALAGANV (4MK19EC002)
Mr. ANIL N T (4MK20EC401)
Mr. CHANDAN KUMAR C N (4MK19EC004)
Mr. VISHNUMOORTHY NAYAK (4MK19EC028)

UNDER THE GUIDANCE OF

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Assistant Professor (Sr.)
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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
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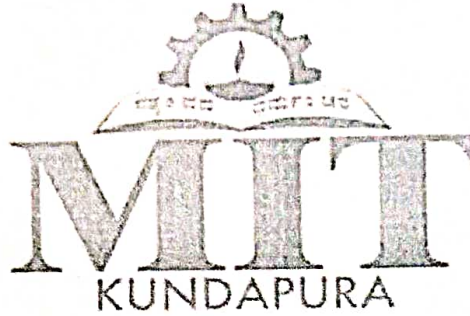
2022-23

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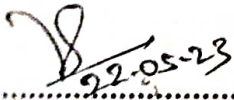
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This is to certify that Mr. AMAR C BALAGANV (4MK19EC002), Mr. ANIL N T (4MK20EC401), Mr. CHANDAN KUMAR C N (4MK19EC004) and Mr. VISIINUMOORTHY NAYAK (4MK19EC028) are satisfactorily completed the Project report prescribed by Visvesvaraya Technological University, Belagavi for the VIII Semester, in partial fulfillment of the requirements for the course of Bachelor of Engineering in Electronics and communication Engineering during the Academic Year 2022-2023


22.05.23

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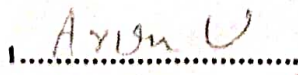
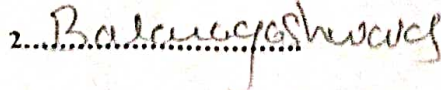


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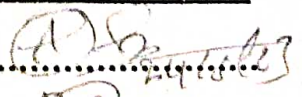

Dr. Abdul Kareem
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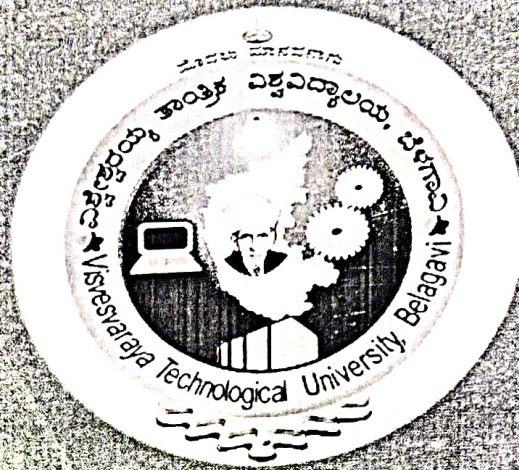
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VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA BELAGAVI 590018, KARNATAKA



**A PROJECT REPORT
ON**

TRANSFORMER HEALTH MONITORING SYSTEM

**Submitted in partial fulfillment of the requirement as part of the VIII Semester
Project Report**

**BACHELOR OF ENGINEERING
IN**

ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

Mr. PRATHAM RAJESH RAYKAR

4MK19EC017

Mr. RAGHU B NAYKAR

4MK19EC019

Mr. SUMAAN KHAN R BAGEWADI

4MK19EC023

Mr. VEERENDRA P GOUDAR

4MK19EC027

UNDER THE GUIDANCE OF

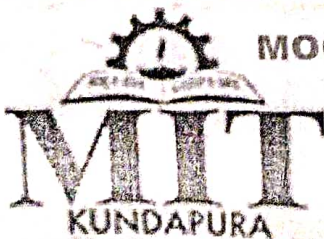
Prof. AKSHATHA NAIK B.E., M.Tech

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**A WIDE
HORIZON
OF
OPPORTUNITIES**

Udupi Dist. Admittance

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JNANA SANGAMA" BELAGAVI- 590018, KARNATAKA



A PROJECT REPORT ON

"TRANSFORMER HEALTH MONITORING SYSTEM"

Submitted in partial fulfillment of the requirement as part of the VIII Semester

Project Report

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by

PRATHAM RAJESH RAYKAR

(4MK19EC017)

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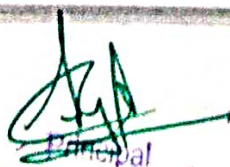
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2022-23

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This is to certify that **Mr. PRATHAM RAJESH RAYKAR (4MK19EC017)**, **Mr. SUMAAN KHAN R BAGEWADI (4MK19EC023)**, **Mr. VEERENDRA P GOUDAR (4MK19EC027)** and **Mr. RAGHU B NAYKAR (4MK19EC019)** are satisfactorily completed the **Project report** prescribed by Visvesvaraya Technological University, Belagavi for the **VIII Semester**, in partial fulfillment of the requirements for the course of **Bachelor of Engineering in Electronics and communication Engineering** during the **Academic Year 2022-2023**

Guide

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Prof. Balanageshwara S

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Moodlakatte Institute of Technology

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Udupi Dist, Karnataka