



JSS MAHAVIDYAPEETHA

JSS ACADEMY OF TECHNICAL EDUCATION

Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka, INDIA

Approved by All India Council for Technical Education, New Delhi

UG programs accredited by NBA: ECE, CSE, ISE, CIVIL, MECHANICAL, IEM, E & IE



Department of Mathematics

Academic year 2020-21 Even semester

ACTIVITY

TITLE: APPLICATION OF NUMERICAL METHODS TO TRAFFIC FLOW

Name of the student with USN:

1. 1JS20CS039 Ashutosh Chauhan
2. 1JS20CS040 Babitha Rani B
3. 1JS20CS031 Anshika Singh
4. 1JS20CS032 Anusha R Mulge
5. 1JS20CS062 Gopesh Gaurav
6. 1JS20CS030 Aniket Tiwari

Branch and Section : Computer Science and Engineering 'A'

Semester : II

Name of the Faculty : Shalini M Patil

Marks secured:	
In figures:	In words:

Signature of Faculty(s):

Remarks if any:



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Contents in Activity (Page-2 onwards)

- Title
- Course outcome of the module
- Aim
- Introduction
- Summary of the activity
- Conclusion/Outcome
- References/source/...

General Instructions:

1. The group of 4 to 6 students depending on class strength is formed by the faculty.
2. The group consist of good, average and slow learners.
3. The group can select the application/topic from the enclosed list or any other after duly consulting the faculty.
4. Submission and finalization of the activity one week before the end of the semester.



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Applications List

Vector Calculus:

- Applications on Force, Torque and Velocity.
- Military usage.
- Projectile
- In Gaming
- Designing Roller coaster
- In cricket
- Avoiding crosswind

Ordinary Differential Equations:

- Classical Physics
- Motion of a charged particle
- Motion of a Binary system
- Disturbed Kepler Motion and Delaunay Elements
- Coupled Pendulum
- Application in Electronic circuit
- The inverted Pendulum

Partial Differential equation:

- Heat Conduction Analysis
- Transverse Vibration of Cable structures
- Applications of non-linear PDE in real life
- Medical field
- Manufacturing system



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- Transmission line equation
- PDE in Economics.

INFINITE SERIES and POWER SERIES SOLUTIONS

- Applications in Physics
- Applications in Computer science
- Applications in Finance
- Applications of Bessel's differential equations
- Applications of Legendre's differential equations
- Legendre polynomials and its applications to neutron transport equation in slab geometry
- Dual Euler–Rodrigue's parameters in the numerical solution of the inverse-displacement problem

NUMERICAL METHODS

- Photography
- Digital computer
- Computer graphics
- Fluid mechanics
- Optimization
- Traffic flow
- Estimation of ocean current