

REAL TIME AI POWERED IMPLEMENTATION PROJECTS

# JDNET TECHNOLOGIES CUDDALORE



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## FINAL YEAR PROJECTS

### PHYSICS

- ❖ MECHANICS AND CLASSICAL PHYSICS
- ❖ ELECTROMAGNETISM AND ELECTRONICS
- ❖ OPTICS AND LASER PHYSICS,
- ❖ MODERN AND NUCLEAR PHYSICS,
- ❖ SOLID STATE AND MATERIAL SCIENCE,
- ❖ ENERGY, ASTRONOMY, AND ENVIRONMENTAL PHYSICS.

100 %  
PLACEMENT  
ASSISTANCE

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(OPP DARLING ELECTRONICS)

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# **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

## **MECHANICS AND CLASSICAL PHYSICS**

1. A Study on the Motion of a Simple Pendulum
2. Determination of Gravitational Acceleration Using a Compound Pendulum
3. Study of the Coefficient of Restitution for Different Surfaces
4. Investigation of the Laws of Conservation of Momentum Using Collisions
5. Study on the Relationship Between Torque and Angular Acceleration
6. Verification of Hooke's Law Using a Spring System
7. Measurement of Moment of Inertia of a Flywheel
8. A Study on Projectile Motion and Range Variation
9. Determination of Young's Modulus of a Beam by Bending Method
10. Verification of Newton's Second Law Using an Atwood's Machine
11. Determination of Acceleration Due to Gravity Using Kater's Pendulum
12. Experimental Study of Damping in Harmonic Motion
13. Measurement of the Modulus of Rigidity of a Wire Using Torsional Oscillations
14. Study on the Effect of Friction on Inclined Plane Motion
15. Measurement of Frequency of a Tuning Fork by Melde's Experiment
16. Investigation of Energy Conversion in a Simple Pendulum
17. Study of Coupled Oscillations in a String System
18. Verification of Parallel Axis and Perpendicular Axis Theorems
19. Determination of the Elastic Constants of a Wire

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## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

20. Study of the Relation Between Centripetal Force and Angular Velocity
21. Verification of the Principle of Moments
22. Investigation of Ballistic Pendulum and Conservation of Energy
23. A Study on the Relationship Between Velocity and Acceleration in Uniform Motion
24. Determination of Velocity of Sound in Air Using Resonance Tube
25. Study of Rotational Motion Using a Rigid Disc
26. Determination of Acceleration Due to Gravity Using Bar Pendulum
27. Study of the Oscillations of a Helical Spring
28. Verification of Law of Conservation of Energy in Mechanical Systems
29. Determination of the Coefficient of Friction Between Two Surfaces
30. Study of Center of Gravity of Irregular Bodies
31. Study of Nonlinear Motion Using a Rubber Band Oscillator
32. Study of Rolling Friction on Inclined Planes
33. Study of Moment of Inertia of a Circular Disc
34. A Study on Projectile Range and Angle of Projection
35. Investigation of Terminal Velocity of a Falling Ball
36. Study of Viscosity of Liquids by Stoke's Method
37. Determination of Bulk Modulus of a Liquid by Acoustic Resonance
38. Study of Longitudinal Vibrations in Metal Rods

# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## **ELECTROMAGNETISM AND** **ELECTRONICS**

1. Verification of Ohm's Law and Determination of Resistance
2. Study of Series and Parallel Combination of Resistors
3. Verification of Kirchhoff's Laws in Electric Circuits
4. Measurement of Internal Resistance of a Cell Using Voltmeter Method
5. Study of Variation of Resistance with Temperature
6. Determination of Magnetic Field Along the Axis of a Circular Coil
7. Study on Capacitors in Series and Parallel Combinations
8. Determination of Frequency Response of an RC Circuit
9. Study of Resonance in an RLC Series Circuit
10. Measurement of Inductance Using Anderson's Bridge
11. Study of Characteristics of a Semiconductor Diode
12. Verification of Inverse Square Law of Magnetism
13. Study of the Hysteresis Curve of a Magnetic Material
14. Measurement of Magnetic Susceptibility of a Material
15. Study of the Characteristics of a Transistor in Common Base Configuration
16. Study of a Zener Diode as a Voltage Regulator
17. Study of Variation of Magnetic Field with Distance for Bar Magnet
18. Verification of the Laws of Electromagnetic Induction

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19. Study of Charging and Discharging of a Capacitor
20. Study of Transformer Efficiency and Energy Loss
21. Study of Frequency Response of an RL Circuit
22. Study of Logic Gates Using ICs
23. Construction and Study of Half-Wave and Full-Wave Rectifiers
24. Study of a Clipper and Clamper Circuit
25. Study of Characteristics of a Light-Dependent Resistor (LDR)
26. Study of Temperature Dependence of Semiconductor Resistance
27. Determination of E/M Ratio of Electron Using Magnetron Method
28. Study of Magnetic Field in Helmholtz Coil Arrangement
29. Construction of a Simple Transistor Amplifier
30. Study of Capacitor Charging and Time Constant
31. Study of Resonance Frequency of a Series RLC Circuit
32. Verification of Faraday's Law of Induction
33. Study of Self and Mutual Inductance of Coils
34. Measurement of Dielectric Constant of a Material
35. Study of Basic Logic Operations Using NAND and NOR Gates
36. Measurement of Low Resistance Using Carey-Foster Bridge
37. Study of Frequency Response of an RC Filter Circuit
38. Study of Capacitive Reactance in an AC Circuit

# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## OPTICS AND LASER PHYSICS

1. Determination of the Wavelength of Light Using Diffraction Grating
2. Study of Polarization of Light Using a Polarimeter
3. Determination of Focal Length of a Convex Lens by Optical Bench
4. Measurement of Refractive Index of a Liquid by Newton's Rings
5. Verification of Brewster's Law
6. Study of Interference Patterns in a Michelson Interferometer
7. Determination of Numerical Aperture of an Optical Fiber
8. Determination of Radius of Curvature of a Lens by Spherometer
9. Study of Fresnel Diffraction by a Straight Edge
10. Measurement of Wavelength Using Diffraction Grating Spectrometer
11. Determination of the Dispersive Power of a Prism
12. Study of the Resolving Power of a Telescope
13. Determination of Focal Length of Concave Mirror by Optical Bench
14. Study of Interference of Light Using Thin Films
15. Study of Diffraction Through a Double Slit
16. Determination of the Velocity of Light in Air
17. Study of Polarization by Reflection and Transmission
18. Determination of the Refractive Index of a Glass Slab
19. Study of Fringe Width Variation in Young's Double Slit Experiment

## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

20. Measurement of Beam Divergence of a Laser
21. Study of Coherence Length of Laser Light
22. Study of Reflection and Refraction Through Plane Surfaces
23. Determination of Wavelength of Laser Using Diffraction
24. Measurement of Angular Magnification of a Microscope
25. Study of Polarization Effects in Transparent Materials
26. Determination of Thickness of a Thin Wire by Diffraction
27. Study of Diffraction at Circular Apertures
28. Study of Spectral Lines of Mercury Lamp Using Spectrometer
29. Determination of Wavelength of Sodium Light Using Newton's Rings
30. Study of Holography and Interference Patterns
31. Determination of Grating Constant of a Diffraction Grating
32. Measurement of Refractive Index Using Brewster's Angle
33. Study of Light Intensity Distribution in Interference
34. Study of Focusing Properties of Convex and Concave Lenses
35. Determination of Energy Output of a Laser Diode
36. Study of Wavefront Division and Amplitude Division Interference
37. Study of Optical Fiber Losses and Transmission Efficiency
38. Study of Light Scattering Through Suspensions
39. Determination of Resolving Power of Grating

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# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## **MODERN AND NUCLEAR PHYSICS**

1. Study of the Characteristics of a GM (Geiger–Müller) Counter
2. Measurement of Half-Life of a Radioactive Source
3. Study of the Range of Alpha Particles in Air
4. Verification of Inverse Square Law Using Gamma Radiation
5. Determination of Planck's Constant Using Photoelectric Effect
6. Study of Compton Scattering and Photon Energy
7. Verification of the Laws of Radioactive Decay
8. Measurement of Electron Charge-to-Mass Ratio ( $e/m$ )
9. Determination of Energy Levels in Hydrogen Spectrum
10. Study of the Working Principle of a Scintillation Counter
11. Determination of Wavelength of X-rays Using Bragg's Law
12. A Study on the Magnetic Moment of Electron
13. Investigation of Nuclear Magnetic Resonance (NMR) Basics
14. Determination of Stopping Potential in Photoelectric Effect
15. Study of the Variation of Beta Particle Range with Absorber Thickness
16. A Study on Semiconductor Band Gap Using PN Junction
17. Verification of Einstein's Photoelectric Equation
18. A Study on Energy Quantization in Atomic Spectra
19. Study of Electron Diffraction and Wave Nature of Matter

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20. Determination of the Ionization Potential of Mercury
21. Study of the Zeeman Effect in Atomic Spectra
22. A Study on the Basic Principle of Cloud Chamber
23. Investigation of the Relation Between Energy and Mass ( $E = mc^2$  Concept)
24. Study of the Concept of Nuclear Binding Energy
25. A Study on the Detection of Radiation Using Solid-State Detectors
26. Measurement of X-Ray Absorption Coefficient of Materials
27. Study of Nuclear Models: Liquid Drop and Shell Model Comparison
28. A Study on the Working Principle of a Cyclotron
29. Determination of Threshold Frequency in Photoelectric Effect
30. Investigation of Pair Production Phenomenon
31. Study of Cosmic Ray Detection Using Cloud Chamber
32. A Study on Quantum Mechanical Tunneling Effect
33. Measurement of Wavelength of Electron Beam by Diffraction
34. Study of the Photoelectric Effect Using LED Sources
35. Determination of Band Gap Energy of a Semiconductor
36. Verification of Bohr's Theory Using Hydrogen Spectrum
37. Study of Neutron Diffusion in Different Materials
38. Measurement of Gamma-Ray Absorption by Materials
39. Determination of the Half-Value Layer of Lead for Gamma Rays

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# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## **SOLID-STATE PHYSICS AND MATERIAL SCIENCE**

1. Determination of Energy Band Gap of a Semiconductor
2. Study of the Temperature Dependence of Semiconductor Conductivity
3. Measurement of Hall Coefficient of a Semiconductor
4. Study of the Electrical Properties of Germanium Crystal
5. A Study on Crystal Structure Using X-Ray Diffraction (XRD) Data
6. Determination of Dielectric Constant of a Solid Material
7. Study of the Temperature Coefficient of Resistance for Metals
8. A Study on Magnetic Susceptibility of a Paramagnetic Salt
9. Determination of Lattice Constant of a Cubic Crystal
10. Study of the Electrical Conductivity of Metal Wires
11. Determination of Thermal Conductivity of a Material
12. Study of the V-I Characteristics of a Thermistor
13. Investigation of the Magnetic Hysteresis Loop for Ferromagnetic Material
14. Study of the Effect of Impurities on Semiconductor Conductivity
15. A Study on Hall Effect in Metals and Semiconductors
16. Determination of Crystal Defects Using Optical Methods
17. Study of Electrical Resistance of Alloys
18. A Study on Thin Film Deposition Techniques

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## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

19. Determination of Activation Energy in a Semiconductor
20. Study of the Variation of Resistivity with Temperature
21. Study of Superconductivity and Meissner Effect (Demonstration Model)
22. Determination of Band Structure Using Energy Gap Measurement
23. Study of Thermoelectric Effect in Bismuth and Copper Junction
24. Investigation of Magnetoresistance in Metallic Films
25. Study of the Effects of Doping on Silicon Conductivity
26. Determination of the Crystal Plane Spacing Using Bragg's Equation
27. Study of the Photoconductivity in Semiconductor Materials
28. Determination of Hardness of Crystals Using Micro-Indentation
29. Study of Semiconductor Diode Characteristics at Different Temperatures
30. Investigation of Thermoluminescence in Crystalline Solids
31. A Study on the Magnetic Properties of Ferrites
32. Study of Optical Absorption in Thin Films
33. Determination of Refractive Index of Crystals Using Polarimeter
34. Study of the Properties of Piezoelectric Materials
35. Measurement of Resistivity of Semiconductor Using Four-Probe Method
36. Study of Mechanical and Thermal Properties of Polymers
37. Determination of Carrier Concentration in Intrinsic Semiconductors
38. Study of Photovoltaic Effect in Solar Cells

# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## **ENERGY, ASTRONOMY, AND ENVIRONMENTAL PHYSICS**

1. Measurement of Solar Energy Using Pyranometer
2. Study of the Efficiency of Solar Panels Under Different Conditions
3. A Study on the Conversion of Solar Energy into Electricity
4. Investigation of Wind Energy Conversion Systems
5. A Study on the Energy Output of a Small-Scale Hydroelectric Generator
6. Study of the Variation of Solar Intensity with Time and Altitude
7. A Study on Renewable Energy Sources and Their Future Potential
8. Measurement of Thermal Energy Storage in Solar Collectors
9. Study of Energy Loss in Transmission Systems
10. Measurement of Radiation Intensity from the Sun
11. A Study on Greenhouse Effect and Climate Models
12. Analysis of Carbon Emission and Global Temperature Data
13. A Study on the Physics of Battery Efficiency
14. Investigation of the Efficiency of Different Insulating Materials
15. Study of the Relationship Between Energy and Environment
16. A Study on the Operation and Efficiency of LED Lights
17. Study of the Cooling Rate of Water in Different Containers
18. Determination of Heat Transfer Rate by Conduction

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## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

19. Measurement of Thermal Conductivity of Building Materials
20. Study of Renewable Energy Storage Methods
21. Analysis of the Motion of Planets Using Kepler's Laws
22. A Study on Phases of the Moon and Tidal Motion
23. Determination of Orbital Parameters Using Kepler's Third Law
24. Study of Spectral Classification of Stars
25. A Study on the Solar Spectrum and Blackbody Radiation
26. Measurement of Sunspot Activity and Solar Rotation
27. Study of the Relationship Between Light Intensity and Distance of Star
28. Study of Gravitational Effects of Celestial Bodies
29. A Study on the Expansion of the Universe (Hubble's Law Demonstration)
30. Determination of the Distance of a Star Using Parallax Method
31. Study of Lunar Crater Size and Impact Energy Relationship
32. A Study on the Earth's Magnetic Field Variation
33. Study of Satellite Orbits and Communication Principles
34. A Study on Cosmic Ray Detection Using Scintillators
35. Study of the Energy Distribution in Solar Radiation
36. Measurement of Infrared Radiation from the Earth's Surface
37. A Study on Planetary Motion Simulation Using Software Tools
38. Study of the Effect of Atmospheric Refraction on Star Position

# REAL TIME AI POWERED IMPLEMENTATION PROJECTS

## **EMBEDDED SYSTEM**

1. A Monitoring System For Water Level And Quality Using Iot Technology
2. A New Method For Automatic Vehicle License Plate Detection
3. A Novel Trolley For Shopping, Billing And Guidance In Supermarket Enhanced With Iot Technology
4. A Power Grid Selection From Multiple Power Source To Improve TheUsage Of Renewable Energy Source Enhanced With IotTechnology
5. A Real Time Street Lighting Monitoring And Control System Enhanced With Arm7
6. A Real Time Street Lighting Monitoring And Control System Enhanced With Arm7
7. A Traffic Light Management System For Emergency Vehicle Through Wireless Communication
8. Advanced Child Tracking System For Safety Measure Using Gps And Gsm
9. Agriculture Corps Monitoring Using Sensor In Embedded System
10. An Iot Based Smart Industrial Monitoring And Prior Intimation To The Humans
11. Anti-Theft Protection Of Vehicle By Gsm&Gps With Finger Print Verification
12. Automation Of Water Management And Efficient Distribution
13. Automatic Saline Fluid Control For Medical Application Using Microcontroller

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## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

14. Biometric Based Authentication System For Exam Paper Leakage Using Iot Technology
15. Condition Monitoring And Fault Diagnosis Of Induction Motor
16. Design And Implementation Of Vehicle Accident Avoidance
17. Design And Implementation Of Wireless Communication System For Toll Collection Using Lifi
18. Design Of Smart Led Streetlight System For Smart City With Web-Based Management System
19. Developing Portable Instrument Based On Internet Of Things For Air Quality Information System
20. Developing Of Online Water Level Monitoring And Control Used For Smart Phone
21. Fisherman Border Alerting Sensing System For Real-time Forecasting Using Iot
22. Gesture Based Communication In Home Automation And Dumb Assistive System
23. Hand Gesture Recognition System For Communication Between Blind And Deaf People Using ARDUINO
24. Hand Gesture To Voice Conversion And Home Appliance Control For Speech Impaired Person
25. Intelligent Agriculture Green House Environment Monitoring And Control System On Iot Technology
26. Intelligent Traffic Light Control System For Emergency Ambulance

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## **REAL TIME AI POWERED IMPLEMENTATION PROJECTS**

27. Intelligent Wireless Accident Detection And Ambulance Rescue System
28. Iot Based Integrated Home Security And Electrical Appliance Control System
29. Monitoring And Controlling Of Transformer And Generator Enhanced With Iot Technology
30. Real-Time Monitoring Of Environment Factors Enhanced With Iot Technology
31. WSN-Based Smart Sensor And Actuator For Power Management In Intelligent Buildings
32. Anti-Theft Protection of Vehicle by GSM & GPS with Fingerprint Verification
33. Intelligent Traffic Monitoring and Guidance System for Smart City
34. Implementing Intelligent Traffic Control System for Congestion Control, Ambulance Clearance, And Stolen Vehicle Detection
35. School Children Safety Transportation Using RFID with System GUI App
36. Design and Implementation of Remotely Located Energy Meter Monitoring with Load Control and Mobile Billing System through GSM
37. Dynamic Solid Waste Collection and Management System Based on Sensor, Elevator and GSM
38. Arduino Based Biometric Authentication Vehicle Door Locking System
39. Accidents and Disaster Management in Fireworks Industries
40. Agricultural Pest Monitoring and Control System
41. Helmet Operated Smart E-Bike (Smart Helmet Using Smart Vehicle)

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## REAL TIME AI POWERED IMPLEMENTATION PROJECTS

### Connect With Us

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