



MANAKULA VINAYAGAR
INSTITUTE OF TECHNOLOGY



2019-2020
VOLUME 6
VISION & MISSION



DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING
ELECTROMAG

VISION

A DEPARTMENT ASPIRES TO PRODUCE DEXTEROUS PROFESSIONALS COMPETENT RESEARCHERS AND THE ENTREPRENEURIAL LEADERS FOR THE BENEVOLENCE OF THE SOCIETY

MISSION

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING IS COMMITTED.

HIGHER ORDER THINKING: TO INVOKE HIGHER ORDER OF THINKING AMONG THE STUDENTS BY MEANS OF COMPREHENSIVE TEACHING AND LEARNING PROCESS.

COMPETENCY: TO PROVIDE TRAINING AND CUTTING-EDGE TECHNOLOGIES TO IMPROVE THE COMPETENCY OF THE STUDENTS.

CONTINUOUS LEARNING : TO PROMOTE INNOVATION THROUGH PROVIDING STATE OF-ART FACILITIES AND ACTIVE INDUSTRY INSTITUTE INTERACTION.

ENTREPRENEURSHIP : TO FACILITATE THE STUDENTS TO IMPROVE THEIR LEADERSHIP AND ENTREPRENEURSHIP SKILLS WITH ETHICAL VALUES.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1: EMPLOYABILITY: OUR GRADUATES SHALL BE SUITABLY EMPLOYED IN ALLIED INDUSTRIES/SERVICES WITH PROFESSIONAL COMPETENCY AND KNOWLEDGE OF MODERN TOOLS.

PEO2: HIGHER EDUCATION: OUR GRADUATES SHALL BE CAPABLE TO PURSUE HIGHER STUDIES/RESEARCH IN THE FIELD OF ENGINEERING AND MANAGEMENT.

PEO3: ENTREPRENEURSHIP: OUR GRADUATES SHALL BE PREPARED FOR A SUCCESSFUL CAREER BY MEETING EVER INCREASING DEMANDS REQUIRED BY ELECTRONICS AND COMMUNICATION PROFESSION AND ENABLE THEM TO BECOME AN ENTREPRENEUR.

PEO4: ETHICAL: OUR GRADUATES CULTIVATE PROFESSIONAL AND ETHICAL ATTITUDES WITH EFFECTIVE COMMUNICATION SKILLS, TEAM WORK AND MULTIDISCIPLINARY APPROACH RELATED TO ENGINEERING

ISSUES.

PROGRAM OUTCOMES

PO1: ENGINEERING KNOWLEDGE: APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING FUNDAMENTALS, AND AN ENGINEERING SPECIALIZATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS.

PO2: PROBLEM ANALYSIS: IDENTIFY, FORMULATE, REVIEW RESEARCH LITERATURE, AND ANALYZE COMPLEX ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING FIRST PRINCIPLES OF MATHEMATICS, NATURAL SCIENCES, AND ENGINEERING SCIENCES.

PO3: DESIGN/DEVELOPMENT OF SOLUTIONS: DESIGN SOLUTIONS FOR COMPLEX ENGINEERING PROBLEMS AND DESIGN SYSTEM COMPONENTS OR PROCESSES THAT MEET THE SPECIFIED NEEDS WITH APPROPRIATE CONSIDERATION FOR THE PUBLIC HEALTH AND SAFETY, AND THE CULTURAL, SOCIETAL AND ENVIRONMENTAL CONSIDERATIONS.

PO4: CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS: USE RESEARCH-BASED KNOWLEDGE AND RESEARCH METHODS INCLUDING

DESIGN OF EXPERIMENTS, ANALYSIS AND INTERPRETATION OF DATA, AND SYNTHESIS OF THE INFORMATION TO PROVIDE VALID CONCLUSIONS.

PO5: MODERN TOOL USAGE: CREATE, SELECT, AND APPLY APPROPRIATE TECHNIQUES, RESOURCES, AND MODERN ENGINEERING AND IT TOOLS INCLUDING PREDICTION AND MODELING TO COMPLEX ENGINEERING ACTIVITIES WITH AN UNDERSTANDING OF THE LIMITATIONS.

PO6: THE ENGINEER AND SOCIETY: APPLY REASONING INFORMED BY THE CONTEXTUAL KNOWLEDGE TO ASSESS SOCIETAL, HEALTH, SAFETY, LEGAL AND CULTURAL ISSUES AND THE CONSEQUENT RESPONSIBILITIES RELEVANT TO THE PROFESSIONAL ENGINEERING PRACTICE.

PO7: ENVIRONMENT AND SUSTAINABILITY: UNDERSTAND THE IMPACT OF THE PROFESSIONAL ENGINEERING SOLUTIONS IN SOCIETAL AND ENVIRONMENTAL CONTEXTS, AND DEMONSTRATE THE KNOWLEDGE OF AND NEED FOR SUSTAINABLE DEVELOPMENT.

PO8: ETHICS: APPLY ETHICAL PRINCIPLES AND ADMIT TO PROFESSIONAL ETHICS AND RESPONSIBILITIES AND NORMS OF THE ENGINEERING PRACTICE.

PO9: INDIVIDUAL AND TEAM WORK: FUNCTION EFFECTIVELY AS AN INDIVIDUAL, AND AS A MEMBER OR LEADER IN DIVERSE TEAMS, AND IN MULTIDISCIPLINARY SETTINGS.

PO10: COMMUNICATION: COMMUNICATE EFFECTIVELY ON COMPLEX ENGINEERING ACTIVITIES WITH THE ENGINEERING COMMUNITY AND WITH SOCIETY AT LARGE, SUCH AS, BEING ABLE TO COMPREHEND AND WRITE EFFECTIVE REPORTS AND DESIGN DOCUMENTATION, MAKE EFFECTIVE PRESENTATIONS, AND GIVE AND RECEIVE CLEAR INSTRUCTIONS.

PO11: PROJECT MANAGEMENT AND FINANCE: DEMONSTRATE KNOWLEDGE AND UNDERSTANDING OF THE ENGINEERING AND MANAGEMENT PRINCIPLES AND APPLY THESE TO ONE'S OWN WORK, AS A MEMBER AND LEADER IN A TEAM, TO MANAGE PROJECTS AND IN MULTIDISCIPLINARY ENVIRONMENTS.

PO12: LIFE-LONG LEARNING: RECOGNIZE THE NEED FOR, AND HAVE THE PREPARATION AND ABILITY TO ENGAGE IN INDEPENDENT AND LIFE-LONG LEARNING IN THE BROADEST CONTEXT OF TECHNOLOGICAL CHANGE.

PROGRAM SPECIFIC OUTCOMES

PSO1: PRODUCTS DEVELOPMENT: USE MODERN TOOLS TO DESIGN SUBSYSTEMS FOR SIMPLE APPLICATIONS IN EMBEDDED SYSTEMS AND VLSI.

PSO2: DESIGN THINKING: APPLY ENGINEERING CONCEPTS TO FIND SOLUTIONS IN THE FIELDS OF COMMUNICATIONS, SIGNAL/IMAGE PROCESSING.

ABOUT THE DEPARTMENT

ACCREDITED BY NBA

THE DEPARTMENT WAS ESTABLISHED IN THE YEAR 2008 FOCUSING TO DEVELOP THE SKILLS OF MODERN YOUTH IN THE FIELD OF ELECTRONICS AND COMMUNICATION ENGINEERING. ADEQUATE EMPHASIS IS GIVEN TO ELECTRONIC



DESIGN USING MODERN TEACHING METHODOLOGIES. EMPHASIS IS ALSO GIVEN TO THE DEVELOPMENT OF SOFT AND HARD SKILLS. UTMOST CARE IS TAKEN IN THE PERSPECTIVE OF IMPARTING MORE PRACTICAL KNOWLEDGE TO THE STUDENTS COMMUNITY IN THE FIELD OF ELECTRONICS AND COMMUNICATION.



ROBOTS

A ROBOT IS A MACHINE ESPECIALLY ONE PROGRAMMABLE BY A COMPUTER CAPABLE OF CARRYING OUT A COMPLEX SERIES OF ACTIONS AUTOMATICALLY. ROBOTS CAN BE GUIDED BY AN EXTERNAL CONTROL DEVICE OR THE CONTROL MAY BE EMBEDDED WITHIN. ROBOTS MAY BE CONSTRUCTED ON THE LINES OF HUMAN FORM, BUT MOST ROBOTS ARE MACHINES DESIGNED TO PERFORM A TASK WITH NO REGARD TO THEIR AESTHETICS.

* MILITARY ROBOTS.

* INDUSTRIAL ROBOTS. ROBOTS ARE INCREASINGLY USED IN MANUFACTURING

* AGRICULTURAL ROBOTS THE USE OF ROBOTS IN AGRICULTURE IS CLOSELY LINKED TO THE CONCEPT OF AI-ASSISTED PRECISION AGRICULTURE AND DRONE USAGE. RESEARCH ALSO PROVED THAT ROBOTS CAN PERFORM A HERDING TASK.

* MEDICAL ROBOTS OF VARIOUS TYPES (SUCH AS DA VINCI SURGICAL SYSTEM)

THUS ROBOTS ARE THE FUTURE OF TECHNOLOGY



BIO-INSPIRED ROBOTS

BIO-INSPIRED ROBOTIC IS A FAIRLY NEW SUBCATEGORY OF BIO-INSPIRED DESIGN. IT IS ABOUT LEARNING CONCEPTS FROM NATURE AND APPLYING THEM TO THE DESIGN OF REAL-WORLD ENGINEERED SYSTEMS. MORE SPECIFICALLY, THIS FIELD IS ABOUT MAKING ROBOTS THAT ARE INSPIRED BY BIOLOGICAL SYSTEMS

BIO-INSPIRED ROBOTICISTS ARE USUALLY INTERESTED IN BIOSENSORS (E.G. EYE), BIOACTUATORS (E.G. MUSCLE), OR BIOMATERIALS (E.G. SPIDER SILK)



SMALL INSECT-LIKE ROBOTS, FOR EXAMPLE, USUALLY MAKE USE OF REFLEXIVE BEHAVIORS TO AVOID OBSTACLES DURING LOCOMOTION, WHEREAS LARGE BIPEDAL ROBOTS ARE DESIGNED TO CONTROL COMPLEX HUMAN-LIKE LEG FOR CLIMBING UP AND DOWN STAIRS.

BY USING THE IDEA OF THIS BIO INSPIRED ROBOTS I DEVELOPED SPIDER ROBOT

SPIDER ROBOT

NAMED ALSO A QUADRUPEDROBOT SINCE IT HAS FOUR LEGS AND MAKE ITS MOVEMENTS USING THESE LEGS, THE MOVMENT OF EACH LEG IS RELATED TO THE OTHER LEGS IN ORDER TO IDENTIFY THE ROBOTY BODY POSTION AND ALSO TO CONTROL THE ROBOT BODY BALANCE.

LEGGED ROBOTS HANDLE TERRAIN BETTER THAN THEIR WHEELED COUNTERPARTS AND MOVE IN VARIED AND ANIMALISTIC WAYS. SINCE IT IS BASED ON SERVO MOTORS OR STEPPER MOTORS AND BOTH ARE MORE EXPENSIVE THAN DC MOTORS THAT COULD BE USED IN WHEELED ROBOTS.

THE MAIN PURPOSE OF MOVING TO LEGGED ROBOTS IS THAT THEY CAN HANDLE IRREGULAR TERRAIN WITH EASE WHEN COMPARED WITH WHEELED ROBOTS.



IT CAN BE DONE BY IMPLEMENTING CRAWL GAIT (PATTERN OF MOVEMENT) IN WHICH ONE LEG WILL BE IN AIR AND REMAINING THREE

IT ALLOWS YOU TO CONNECT TO YOUR ROBOT THROUGH BLUETOOTH AND MAKE FORWARD AND BACKWARD MOVEMENTS AND LEFT RIGHT TURNINGS, IT ALLOWS YOU ALSO TO CONTROL THE ROBOT IN REAL TIME

THUS, A QUADRUPED ROBOT IS DESIGNED IN SUCH A WAY THAT HUMANS CAN INTERACT WITH IT USING ANDROID CHATBOT TO PERFORM SOME TASKS. THE MOVEMENT OF SERVOS IS ACHIEVED BY INVERSE KINEMATICS ALGORITHM.

THE ARDUINO QUADRUPED ROBOT WILL BE ABLE TO MOVE ON A GUIDED PATH SENSING THE BLACK LINE WITH ITS AUTOMATIC OBSTACLE AVOIDING FEATURE MAKES IT EFFICIENT TO REACH ANY DESTINATION AS DESIRED.



BY
SUHAS.E
3RD.B SEC

HAPPINESS HAS ITS NEW FORM

THERE HAS ALWAYS BEEN A DEBATE, "MONEY OR LOVE".

WHEN SPEAKING ABOUT MONEY, IT IS OBVIOUS THAT IT IS A PIECE OF PAPER WITH PICTURES AND NUMBERS ON IT AND WHICH HAS A VALUE TO BUY MERELY ANYTHING AT ALMOST ANY PART OF THE WORLD. WHAT IS THE OTHER THING? LOVE? THERE IS A MOST COMMON DIMENSION OF LOVE, WHICH IS KINDNESS. HOWEVER, WHILE CHOOSING BETWEEN MONEY AND LOVE, IT GETS ANOTHER DIMENSION, WHICH IS THE WILLINGNESS TO DO WHAT WE LIKE OR IN A SINGLE WORD "PASSION". THIS DEBATE PLAYS AN IMPORTANT ROLE IN ONE'S LIFE AS IT DEALS WITH HIS/HER CAREER. CHOOSING ONE OF THE TWO IS REALLY DIFFICULT AS WELL AS INDISPENSABLE BECAUSE THE CHOICE DECIDES THE REST OF ONE'S LIFE. IT IS OBVIOUS THAT NINE IN TEN PEOPLE CHOOSE MONEY OVER LOVE, NOT ONLY BECAUSE THEY REALLY WANT TO CHOOSE IT BUT BECAUSE THEY HAVE NO OTHER CHOICE DUE TO A VARIETY OF REASONS LIKE ETC RESPONSIBILITY, NECESSITY, LACK OF MONEY TO CHOOSE PASSION,



THIS IS HIGHLY SEEN AMONG THE ENGINEERING STUDENTS ABOUT. 80% OF THE ENGINEERING STUDENTS IN A CLASSROOM STUDIES ENGINEERING ONLY BECAUSE THEY COULD NOT GO FOR THEIR

PASSION, DUE TO ONE OR MORE OF THE ABOVE MENTIONED REASONS. THEY STUDY ENGINEERING, START TO WORK IN A MULTI-NATIONAL COMPANY LUCKILY AND EARN GOOD SUM. THOUGH, SOME ALWAYS FEEL LIKE LACKING SOMETHING WHICH IS WHY NOWADAYS, WE COULD SEE MOST OF THE OUTPERFORMING YOUTUBE STARS AND AGRICULTURISTS WHO ARE ENGINEERS ONCE WORKED IN MNCs. DO THEY NOT NEED MONEY NOW? THEY DO, BUT THEY CHOSE THEIR PASSION A LITTLE LATE FROM WHEN THEY SHOULD HAVE CHOSEN IT. WHY THIS HAPPENED? THEY SHOULD HAVE KNOWN BY NOW THAT HAPPINESS BEATS MONEY, THAT HAPPINESS IS A STATE OF MIND, AND THAT IT DOES NOT DEPEND ON THE AMOUNT OF MONEY ONE HAS. THEY COULD HAVE BEEN AT EVEN HIGHER HEIGHTS IF THEY CHOSE AGRICULTURE OR MEDIA NETWORKING OVER ENGINEERING AT THE BEGINNING. PASSION SHOULD BE ON THE TOP OF THE LIST OF PRIORITIES AT ANY POINT OF LIFE. I WISH EVERY GRADE XII STUDENT A LIFE OF PASSION AND HAPPINESS RIGHT FROM HIS/HER COLLEGE EDUCATION.



BY

RAMBABU.M

4TH. B



DO YOU REMEMBER THE WORST NIGHTMARE YOU EVER HAD? WELL MANY OF US DO REMEMBER. NOW, LET ME TAKE YOU TO A NIGHTMARE WHICH YOU NEVER WANT IN REALITY. IMAGINE YOURSELF DEEP INSIDE A SEWAGE GUTTER, TWO-THIRD OF YOUR BODY IS COVERED WITH FILTHY GRAYISH WATER AND YOUR NOSE IS SUFFOCATED WITH THE UNPLEASANT ODOR OF THE DRAINAGE. AT ANY LENGTH OF YOUR EYESIGHT ALL YOU COULD SEE IS PLASTIC BOTTLES, PLASTIC COVERS AND ALL NON-DECOMPOSABLE STUFFS. YOU COULD BARELY SEE THE THINGS AROUND YOU. SLOWLY A BUCKET IS DROPPED NEAR YOU WHICH SHOULD BE USED TO COLLECT THE PLASTIC WASTES. YOUR JOB IS TO COLLECT ALL THE PLASTIC BOTTLES AND BAGS WHICH COULD CLOG THE PIPES OF THE UNDERGROUND DRAINAGE SYSTEM. I BET THAT WE CAN'T HOLD ON THERE FOR ONE MINUTE. THE TOXIC GASES OF THE DRAINAGE WILL CAUSE CHEST TIGHTNESS, DIFFICULTY TO BREATHE AND COUGH. ISN'T IT THE WORST NIGHTMARE YOU COULD EVER HAVE? BUT THIS IS THE JOB OF AROUND 5 LAKH INDIANS. WE LOSE AROUND 150 WARRIORS EVERY YEAR. THEY ARE NOT THE WARRIORS WHO DIE IN A BATTLE WITH THEIR FELLOW HUMAN BEINGS. THEY ARE THE WARRIORS WHO FIGHT WITH THE TINIEST YET POWERFUL ENEMIES OF THE WORLD- VIRUSES AND BACTERIA. THEY ARE THE SO CALLED SEWAGE WORKERS, BUT CLEANERS AND MANUAL SCAVENGERS OF THE COUNTRY.



SEGREGATE THE WASTES YOU PRODUCE

கவிதை

உருவம் கொடுத்து
உயிர் கொடுத்தால் - தாய்

ஊக்கம் கொடுத்து
உல்லாசம் கொடுத்தால் - தந்தை

உண்மை கொடுத்து
உயர்வு கொடுத்தால் - ஆசிரியர்

உயிர் கொடுத்து
உதவிட தோல் கொடுத்தால் - நண்பன்

உன்னை கொடுத்து
என்னை கேட்டால் - காதலி

அடைக்கலம் கொடுத்து
அரவைனைத்தால் - மனவை

இருப்பதைக் கொடுத்து
உன்னை இன்புற செய்தால் - அது நான்

- சிரஞ்சீவி



காற்றில் கரும்கேங்கள் மிதக்க....

காக்ககைள் கா கா என்றுகரயை....

சிறு செடியில் இருக்கும் பெரும் பூக்கள் புன்னகைக்க....

மீன்கள் மகிழ்ச்சியில் துள்ளி துள்ளி ஓட....

மணவாசம் கண்டு மண்பழுக்கள் எட்டிப்பார்க்க....

நெற்கதிர்கள் அங்கும் இங்கும் சாய்ந்தாட....

இயற்கை இனிமையாய் தாலாட்டுகிறது....

தனிமையில் வாடும் தாவரங்களை....

-புதுச்சேரி கார்த்திக்கா

IF ANY
IF THERE'S ANY GOD;
I'D PLEAD FOR ZEST,
THAT REMAINED SLUGGISH
IN DESOLATION FOR AEONS .

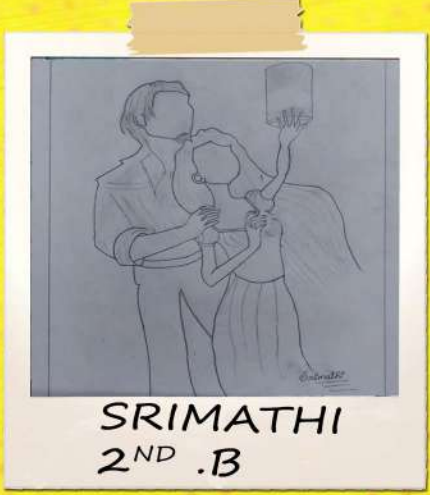
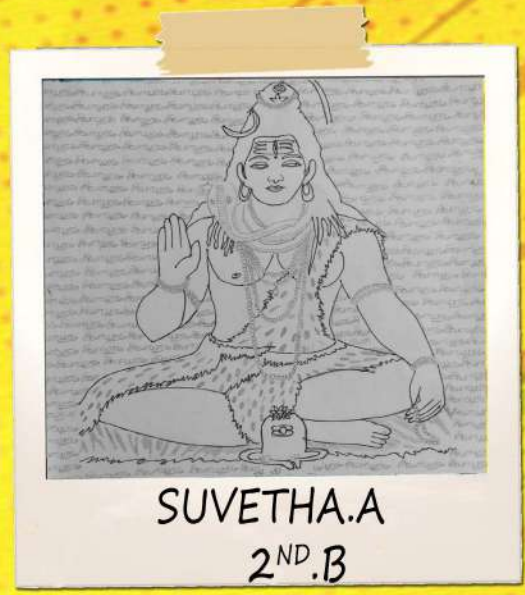
IF THERE'S ANY LORD;
I'D APPEAL FOR EMANCIPATION,
THAT LEFT UNLEASHED-
AMONG THE INFINITIVE EDGINESS.

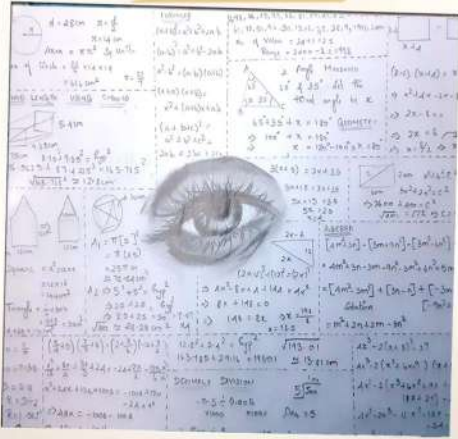
IF THERE'S ANY ALMIGHTY;
I'D PRAY FOR SOME TRANQUILITY,
THAT DECAMPED ME
IN THE THICK OF WRONGLES,

- KUSHAL
2ND.B

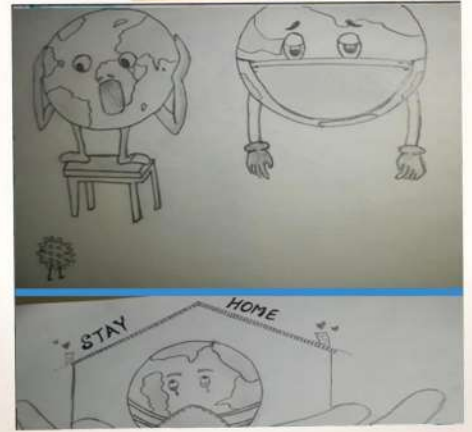


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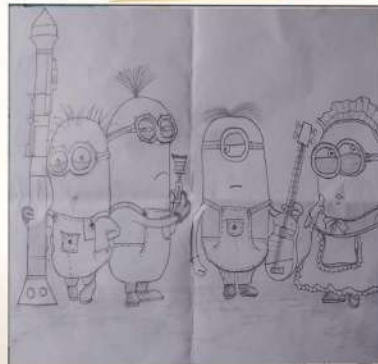




J.M.SHALINI DEVI
3RD.B



K.SUPRIYA
4TH.A



S,ABINAYA
2ND .B



P.BAVADHARANI
3RD.B



B.DHINESH KUMAR
2ND .B



PAINT

WORK



P. SRIMATHI
2ND.B



S.ARUNAA
4TH.B



LAVANYA
2ND.B



.M.VELPRASATH
3RD.B



V.NIVEDHA
3RD.B



S.ABINAYA
2ND.A



SUVETHA.A
2ND.B

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**PAPER
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C.SWABNA
2ND.B

[PHOTOGRAPHY]



SIRENJEEVI
3rd .B



.G.THAMIZH SELVAN
2nd .B



RAMBABU.M
4TH .B



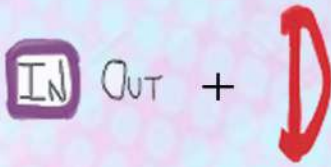
VIJAY BALAJI.R
3RD .B



CONNECTIONS



1.



2.



3.



4.



5.



6.

Answer in next page

ANSWERS:

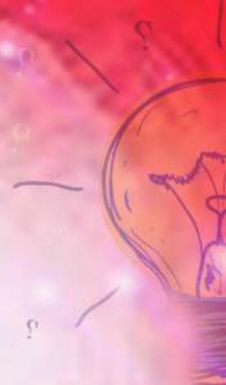
1. The one with the biggest head.
2. Yesterday, Today, and Tomorrow.
3. The riverbank.
4. A telephone.
5. A clock.

6. A mushroom.
7. The letter V.
8. It's a Shadow!
9. $888 + 88 + 8 + 8 + 8 = 1000$.
10. Queue.





RIDDLES



1. WHICH FOOTBALL PLAYER WEARS THE BIGGEST HELMET?
2. NAME THREE DAYS CONSECUTIVELY WHERE NONE OF THE SEVEN DAYS OF THE WEEK APPEAR?
3. WHAT BANK NEVER HAS ANY MONEY?
4. WHAT HAS MANY RINGS, BUT NO FINGERS?
5. WHAT HAS A FACE AND TWO HANDS BUT NO ARMS OR LEGS?
6. WHAT KIND OF ROOM HAS NO DOORS OR WINDOWS?
7. WHAT IS THE CENTER OF GRAVITY?
8. ONLY ONE COLOR, BUT NOT SIZE, STUCK AT THE BUTTOM, YET EASILY FLIES. PRESENT IN SUN, BUT NOT IN RAIN, DOING NO HARM, AND FEELING NO PAIN. WHAT IS IT?
9. CAN YOU WRITE DOWN EIGHT EIGHTS SO THAT THEY ADD UP TO ONE THOUSAND?
10. WHAT ENGLISH WORD RETAINS THE SAME PRONUNCIATION, EVEN AFTER YOU TAKE AWAY FOUR OF ITS FIVE LETTERS?

ANSWER :

6. BLUETOOTH
5. CALCULATOR
4. RANKING

3. FRIDAY
2. INDEPENDANCE DAY
1. WHATSAPP

Answer in previous page



Glimpse Of The Year



Students Volunteers Conducted One day workshop on "Arduino"



"Smart India Hackathon 2019" at NIT Trichy



Presentation Contest on "Technology for Rural India"



*Workshop on
"Basics Of Electronics"*



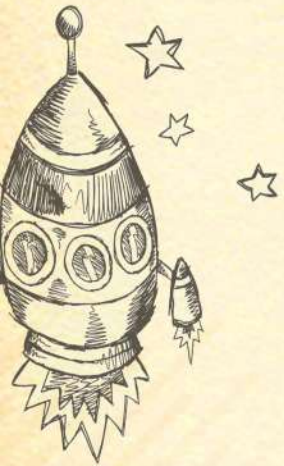
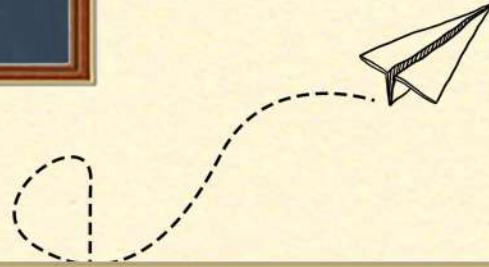
*Poster presentation on "Applications of
Electromagnetics" and "Advanced Processors"*



"Nss Activity"



"Mitronce 2K20"



Batch 2016-2020



IV.A



IV.B



"Every pain gives a Lesson
And Every Lesson Changes
A Person"
-a.p.j Abdul Kalam



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