



VIGYAAN PROBLEM STATEMENTS

(Department Of Electronics and Telecommunication Engineering)

1. Sun Tracking Solar Panel

Abstract: As the non renewable energy resources are decreasing, use of renewable resources for producing electricity is increasing. Solar panels are becoming more popular day by day. The position of the Sun with respect to the solar panel is not fixed due to the rotation of the Earth. Hence, there is need of solar panel with efficient usage of the solar energy.

2. Automated Household Water Management System Using PIC

Abstract: Even though 70% of the Earth's surface is covered with water, 97% of that water is salt water. Fresh water percentage on Earth is about 1% of total water, with other 2% being glaciers. Hence, water management is very important task. This project should give an automated water management and distribution system in towns so that there is no wastage.

3. Image Processing Based Toll Automation

Abstract: As we know tolls are very time taking and also there is lots of traffic are at tolls that cause various problem. Students have to create an automatic toll payment system based on automatic number plate recognition in order to solve problems at tolls.

4. Bidirectional Visitor Counter

Abstract: Visitor counter is an important task in large gatherings, auditoriums, clubs, seminars etc. Manual counting will often result in errors. A microcontroller based bidirectional counter is proposed here. The system uses two sets of transmitter, receiver pair and the count is based on the interruption of the transmission of the IR signal.

5. Automatic Room Light Controller

Abstract: A microcontroller based light controller system is required, which helps in saving electricity. The system counts the density of area in which people are standing entering a room and switches ON or OFF the lights accordingly. It is useful in auditoriums and conference halls, where the lighting conditions of the room are adjusted automatically.

6. Auto Intensity Control of Street Lights

Abstract: Street lights are controlled manually in olden days. These days automation of street lights has emerged. But one can observe that there is no need of high intensity in peak hours i.e. when there is no traffic and even in early mornings. By reducing the intensity in these times, energy can be saved to some extent. Therefore it is required to design a system which can control street light intensity by calculating the peak hours.

7. Password Based Door Lock System

Abstract: As nowadays the mechanical locks are easily cracked so Password Based Door Lock System is a simple device where a secure password will act as a door unlocking system. This locking system should be efficient and feasible like mechanical locks.

8. Eyes Based Electric Wheel Chair Control System

Abstract: Eyes base Electric Wheel Chair Control EBEWC is controlled by human eyes only. Therefore disabled person can control the EBEWC by themselves. EBEWC can help disabled persons to become independent and free to do their own task.

9. Real Time Water Quality Measurement System based on GSM

Abstract: Since it's not feasible to take the water sample to the laboratory after every hour for measuring its quality. The conventional technique of measuring the quality of water is to gather the samples manually and send it laboratory for analysis, but this technique is time overwhelming and not economical. Therefore, there is requirement of water quality measuring system that can measure the essential qualities of water in real time. It should be able to endlessly measure the standard of water and to send the measured values to the watching centre at each predefined time.

10. ZigBee Based E-Menu Ordering System

Abstract: It's always not comfortable to give order to waiter as its time taking and you have to wait to make any changes in order. E-Menu ordering terminal applied to middle and small hotel. The development of the E-Menu ordering is based on the software-hardware. It has to be high performance-cost ratio, low power, high reliability and friendly user interface.

11. Classroom Attendance Using Face Detection

Abstract: Attendance for the students is an important task in class. When done manually it generally wastes a lot of productive time of the class. This proposed solution for the current problem is through automation of attendance system using face recognition. Face is the primary identification for any human. The system should automatically update the student's presence in the class to the student's database and sends message to guardians of absentees and also to Head of department. .

12. Intelligent Helmet for Coal Miners with Voice over and Environmental Monitoring

Abstract: In recent years, many miners lost their lives in mines due to lack of info about environment and lack of communication between them. Here we need smart new helmet, which enable the helmet as a mobile node of ZigBee wireless sensor networks, gathering parameters from underground timely and quickly. The helmet which is mobile sensor node will collect the temperature, humidity and illumination level of nearby environment and will alert the central management unit in case of abnormal condition. Also, the miners should be to communicate with control centers or with other miners through wireless speech communication.

13. Battery Powered Heating and Cooling Suit with Location Spotter

Abstract: Our soldiers perform their duties in extreme weather condition. We need an E-Uniform (suit) which gives better protection to the soldiers who are working in extreme weather conditions. This Uniform will make the soldier to work in any kind of environment. Here using Solar Panels to power up the internal circuitry of the E-uniform. A DC rechargeable battery and microcontroller is the heart of the circuit as it controls all the functions. The E-Uniform is operated in two modes, summer mode and winter mode. This helps the soldier to bear any kind of external environment.

14. Password Based Circuit Breaker

Abstract: Nowadays, electrical accidents to the line man are increasing, while repairing the electrical lines due to the lack of communication between the electrical substation and maintenance staff. Here, we need a solution to this problem to ensure line man safety. In this the control (ON/OFF) of the electrical lines lies with line man. Here this is arranged in such a way that maintenance staff or line man has to enter the password to ON/OFF the electrical line.

15. Voice and Gesture Based Wheelchair

Abstract: It's common that the elders and the physically challenged people find it hard to move the wheel chair without external aid. Here we need a home navigation system, which comprises of a wheelchair which works on the inputs such as gesture and voice commands via an android phone and navigates according to command. It can be used by an elderly or physically challenged person to move inside the home without any difficulty. By making use of HNS, elderly and the physically challenged can move to different locations in the particular house just by pronouncing the direction name or by making the movement of the android phone they will be provided with.

16. Density Based Traffic Signal with Remote Override in Emergency

Abstract: Now a day's traffic jam is the biggest problem mainly in the metro cities. Increasing usage of the cars, bikes and other vehicles, on roads are the primary cause for the traffic jam. Hence there is requirement of a density based operation of the traffic signal lights to avoid unnecessary waiting time at the junction.