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**100 Times Curious – Collection of Questions**

Released on the occasion of

**Science & Engineering Fair of Selected Projects**

At

The Institution of Engineers (India), Hyderabad on 29<sup>th</sup>, 30<sup>th</sup> & 31<sup>st</sup> January 2018

*Organised by* **Agastya International Foundation**

In support with **Synopsys**

# Contents

1. FOREWORD
2. LIST OF PROJECTS EXHIBITED IN THE FAIR
3. QUESTIONS



## FOREWORD

It is well established in neuroscience that the young brain is constantly completing a picture of the world, its objects, processes and relationships. How does it do so? By asking questions and going after what seem to be hidden mysteries. If curiosity is a trigger questions are its outcomes.

But not every child gets an opportunity to give a definite form to its questions or share its curiosities. In fact the poorer a child's economic circumstances are, the higher is the incidence of what we might call stimulus poverty- the lack of stimuli in his or her environment. Material poverty is but one reason for stimulus poverty. Children can grow stimulus-poor from any material circumstance.

Anveshana is one more platform Agastya International Foundation has created to address this problem. This event, now 7 years old in Bangalore, completed 5 years in Hyderabad and 3 years in NCR has a built in opportunity for children to get curious and ask question because it takes them far away from their regular environs thus providing a state of excitation from which questions will result.

Till now we had not created a process to verify if this questioning is happening while children and their guides engage in their projects. Anveshana 2015 set out to correct this.

What you see in this volume are the questions children asked while doing their projects. It is almost certain not all of them could have been answered. Equally, each is a first step in a voyage of discovery that the child has begun.

### AGASTYA INTERNATIONAL FOUNDATION



## 100 Times Curious – Anveshana Hyderabad

S.N	Project Title	College
1	Hybrid Energy (Solar-Wind Hydal) Generation for rural Electrification	Avanthi Institute of Engineering and Technology
2	Energy From Gash	G Narayanamma Institute of Technology and Science
3	Wireless Power Transmission For Portable Device Charging	Avanthi Institute of Engineering and Technology
4	Bio-Green Bloom-Energy	Sri Padmavathi Mahila University,Tirupathi
5	Pipeline Inspection and Borewell Rescue Robot	Marri Laxman Reddy Institute of Technology
6	IOT Based Water Management System	Jawaharlal Nehru Technological University College of Engineering
7	Waste Water Treatment and Re-use	Vaageswari College of Engineering, Karimnagar
8	Aquaponics	Marri Laxman Reddy Institute of Technology and Management
9	Efficient Garbage Management System for Smart Cities	Marri Laxman Reddy Institute of Technology
10	Garbage Monitoring System	ACE Engineering College
11	Simple Ways of Composting At Home	Princeton College of Engineering and Technology
12	Unique Way-Dosa Maker	Sree Vidyanikethan Engineering College, Tirupathi
13	E-Based Calorie and Nutrition Measurement From Food Image	Sri Padmavathi Mahila University,Tirupathi
14	Air Quality Monitor	Marri Laxman Reddy Institute of Technology
15	Railway Track Crack Detection Robot	Marri Laxman Reddy Institute of Technology
16	Adaptive Fire Fighting Robot	Marri Laxman Reddy Institute of Technology
17	Rectenna Application Wireless Mobile Charger Using Electromagnetic Power	Marri Laxman Reddy Institute of Technology



18	Virtual Wheel Chair	Marri Laxman Reddy Institute of Technology
19	Automatic Car Wash	Marri Laxman Reddy Institute of Technology
20	Automized Fruit Cutter	Marri Laxman Reddy Institute of Technology
21	Hidden Camera Detector	Marri Laxman Reddy Institute of Technology
22	Military Spy Robotic Dog	Muffakham Jah College of Engineering and Technology
23	Voice Controlled Prosthetic Arm for Physically Disabled	Muffakham Jah College of Engineering and Technology
24	Smart Health Chair	B.V. Raju Institute of Technology, Medak
25	Finger Print Based Anti-Theft Vehicle System	Sreenivasa Institute of Technology and Management Studies
26	Sensing Visitor Outside the Door & Sending Notification to the Owner-Home Automation	Matrusri Engineering College
27	Voice Control Robot using NI	Vardhaman College of Engineering
28	Hand Gestures Recognition System	B.V. Raju Institute of Technology, Medak
29	Voice Pen Plotter	Marri Laxman Reddy Institute of Technology

## SCIENCE & ENGINEERING FAIR



## Hybrid Energy (Solar Wind Hydal) Generation for Rural Electrification

1. What is solar energy?
2. What is wind energy?
3. What is hydal energy?
4. How the solar energy is converted into electrical energy?
5. How the wind energy is converted into electrical energy?
6. How the hydal energy is converted into electrical energy?
7. The solar panel consists of?
8. What is the output voltage of solar panel?
9. What is dc motor?
10. What is generator?
11. What is the working principle of motor?
12. What are the operating voltages of motor?
13. What a dc motor consist of?
14. What is the rpm of dc motor?
15. What is transformer?
16. What are the types of transformers?
17. What is the working principle of transformer?
18. What is mutual induction?
19. What is faraday's law of mutual induction?
20. What is the input voltage of transformer?
21. What is the output voltage of transformer?
22. What is the current rating of transformer?
23. What is rectifier?
24. What are the advantages of rectifier?
25. What is half-wave rectifier?
26. What is full-wave rectifier?
27. What is the output of rectifier?
28. What is bridge rectifier?
29. What is bridge rectifier IC number?
30. Define filter?
31. Why we use filter?
32. What is the value of filter?
33. Define regulator?
34. Why we use regulator?
35. What are the types of regulators?
36. What is the output of regulator?
37. What is regulator?
38. What is led?
39. What is PCB board?
40. What is microcontroller?
41. What are the specifications of microcontroller?
42. Pic stands for?
43. Define ldr?
44. Define sensor?
45. What is the internal resistance of ldr?
46. What are the battery specifications?
47. Which type of battery?
48. What is limit switch?
49. What is the working of limit switch?
50. What is motor driver?
51. What is motor driver ic number?
52. What is h-bridge?
53. What is the operating voltage of motor driver?
54. How many pins a motor driver consists of?
55. Define mosfet?
56. What is the inverter IC?
57. What is the inverter IC number?
58. Which type of waveform generator IC cd4047 is?
59. What is the time constant for waveform generator?
60. What is mean by of setup transformer?



61. Current rating of step-up transformer?
62. What is the use of tantalum capacitor?
63. How the solar power stored in battery?
64. How the wind power stored in battery?
65. How the hydal power stored in battery?
66. What is the input voltage of dc fan?
67. What is the price of transformer?
68. What is the price of rectifier?
69. What is the price of filter?
70. What is the price of regulator?
71. What is the price of resistor?
72. What is the price of solar pannel?
73. What is the price of wind turbine?
74. What is the price of dc motor?
75. What is the price of ldr?
76. What is the price of limit switch?
77. What is the price of microcontroller?
78. What is the price of led?
79. What is the price of motor driver?
80. What is the price of battery?
81. What is the price of inverter IC?
82. What is the price of mosfet?
83. What is the price of step-up transformer?
84. What is the price of tantalum capacitor?
85. What is the price of dc fan?
86. What is the price of LCD display?
87. What is the display capacity of LCD?
88. How many rows in LCD display?
89. How many columns in LCD display?
90. What is LCD driver?
91. What is mean by potentiometer?
92. What is the use of potentiometer?
93. How we can adjust the intensity of LCD display?
94. What is the operating voltage of LCD?
95. What is the operating voltage of microcontroller?
96. What is the operating voltage of led?
97. Which type of motor pump is used for water pumping?
98. What are the advantages of this project?
99. What are the applications of this project?
100. What is the cost of this project?



## ENERGY FROM GASH

1. What is meant by energy?
2. How can energy be produced?
3. What is law of conversation of energy?
4. What are kinds of waste?
5. What is meant by urban waste?
6. What is waste segregation?
7. What kind of material are involved in waste segregation?
8. What is waste management?
9. Do developing countries have efficient waste management technologies?
10. What is waste segregation plant?
11. How many steps are involved in the plant?
12. What is meant by input waste?
13. How many types of input wastes are taken?
14. How is water useful in this project?
15. What is centrifugal force?
16. What is the difference between centrifugal and centripetal force?
17. What kinds of materials are produced by plastic?
18. Why is conveyer belt used?
19. Is it working on AC power supply or DC power supply?
20. Difference between AC and DC power supply who are farmers? What is the major component used in step-1?
22. What different kinds of conveyor belts are there?
23. Why are general purpose threads more useful?
24. Does the maximum capacity of conveyor vary?
25. How long does a conveyor belt last?
26. How much maintenance does a conveyor belt need?
27. What makes conveyor belt move?
28. If a DC motor is to be selected for conveyors, which motor would be preferred?
29. What is the rpm of dc motor?
30. What are the kinds of motors?
31. What are the types of magnets and which type is used in here?
32. What is meant by permanent magnet?
33. Differentiate temporary, permanent and electromagnetic magnets?
34. What is the voltage of current used in the DC motor?
35. What kind of substances are attracted to a magnet?
36. When do magnets attract and repel each other?
37. What is conveyor drum?
38. How is the conveyor drum useful?
39. Speed of conveyor drum?
40. What is the material used to create this conveyor drum?
41. With what speed the waste is given into conveyor drum?
42. Why are spikes placed inside the conveyor drum?
43. How much input can conveyor drum take in one go?
44. What material is used for spikes?
45. Main reason for this step?
46. Is purification of waste necessary?
47. What makes the conveyor drum step more efficient?
48. How much time do we need to make waste rotate?
49. What is the supporting material used in the model for conveyor drum?
50. The end product of waste after the conveyor drum is in which form?
51. How are magnets used in this process?
52. How metals, bolts and all materials are separated by magnets?
53. Are metals used for electricity generation?
54. Does any type of force method is used in the type step?





55. What is the role of mechanical energy in generation of electricity?
56. How does a magnet effect electricity?
57. How do you generate electricity using magnets and wires?
58. Does any kind of force method is used in this step?
59. Why is fan used in this step?
60. Is it efficient enough to segregate the heavier and lighter materials using fan?
61. Which type of force is used in this process?
62. Plastics covers are segregated by which process or method??
63. Which component is mainly used in the segregation of plastic??
64. How much units of force or pressure is applied for segregation of plastic??
65. Which type of plastics is used for generation of electricity??
66. Does water play any role in segregation of plastic?
67. The collected plastics are further made to?
68. What is the use of hydraulic press?
69. Are there any alternative methods to divide plastics?
70. What percentage wastes do plastics constitute?
71. What are the sources of biomass?
72. Into how many forms of energy biomass can be converted?
73. What type of gas is produced by biomass when sent into digester?
74. List the advantages of Biogas?
75. State the principle of Biogas generation?
76. List the methods of extraction of energy from biomass?
77. Differentiate between Biogas and Biomass?
78. Is this energy produced used for electricity?
79. What actually Gash mean?
80. How many forms energy exists?
81. Are thermoplastics used for electricity generation?
82. What methods are involved to generate electricity from plastics?
83. How plastic covers are segregated?
84. Are plastic covers and materials light in nature?
85. What mainly water does in segregation of plastics from waste?
86. What is the role of mesh plated container in this process?
87. Does incineration plays a major role in this process?
88. What temperatures are involved in incineration?
89. Is incineration an effective method compared to recycling?
90. What are the methods employed to handle used plastic?
91. How is biomass used for generation of electricity?
92. What actually biomass consists of?
93. What is biomass?
94. How much time does biomass take to convert to energy?
95. What is the main objective of this process?
96. How many steps does waste take to convert into energy?
97. What are the uses of biomass?
98. Does biomass fuel used for electricity generation??
99. What is the main role of digester?
100. Is biomass digester practically possible in day to day life?



## Wireless Power Transmission for Portable Device Charging

1. Define power?
2. Define voltage?
3. Define current?
4. What is mean by wireless power?
5. What is the wireless power transmission principle?
6. Define emf?
7. Define rectifier?
8. What are the types of rectifiers?
9. Why rectifier is used?
10. What is half wave rectifier?
11. What is full wave rectifier?
12. What is bridge rectifier?
13. What is filter?
14. Why we use filter?
15. What is regulator?
16. Why we use regulator?
17. How much voltage is required to charge the mobile?
18. What is adapter?
19. What is the input voltage to adapter?
20. What is the output voltage of adapter?
21. What is copper coil?
22. How many turns in primary coil?
23. How many turns in secondary coil?
24. What is the turn's ratio of copper coil?
25. What is resistor?
26. What is MOSFET?
27. Why we use heat sink?
28. What is the use of MOSFET?
29. What is the operating voltage of MOSFET?
30. How MOSFET will works?
31. What is the price of copper coils?
32. What is the price of bridge rectifier?
33. What is the price of filter?
34. What is the price of regulator?
35. What is the price of MOSFET?
36. What is the price of resistor?
37. What is the price of adaptor?
38. How much distance the power is transmitted wirelessly?
39. What is the input voltage to charge the mobile?
40. What is the cost of the project?
41. What is the working principle of motor?
42. What are the operating voltages of motor?
43. What a dc motor consist of?
44. What is the rpm of dc motor?
45. What is transformer?
46. What is conductor?
47. What is insulator?
48. What is vector?
49. What is scalar quantity?
50. What is resistor?
51. Resistor colour coding?
52. What is resistance?
53. Unit of resistance?
54. What is resistivity?
55. Unit of resistivity?
56. What is current?
57. What is voltage?
58. What is potential difference?
59. What is an electron?



60. What is AC?
61. What is DC?
62. What are the types of renewable energy sources?
63. What are the types of AC?
64. What are the types of magnets?
65. What is meant by permanent magnet?
66. Differentiate temporary, permanent and electromagnetic magnets?
67. What is solar energy?
68. How solar power is converted into electrical energy?
69. How to convert AC to DC?
70. How to convert DC to AC?
71. What are the types of batteries?
72. Why do I need a D C power supply?
73. In varying power to these devices should I change the current or voltage?
74. Are the peltier devices purely resistive?
75. How closely can temp be controlled with thermoelectric technology?
76. What is controlling unit?
77. What does controlling unit consists?
78. Why this controlling unit is required?
79. What is the voltage range in 3-phase?
80. How much conductors used in 1-phase?
81. How much conductors used in 3-phase?
82. Unit of current?
83. Measuring instrument of current?
84. Measuring instrument of voltage?
85. Why ammeter connected in series?
86. Why voltmeter connected in parallel?
87. Why current remains same in series connection?
88. Why voltage remains same in series connection?
89. What is ideal voltage source?
90. What is ideal current source?
91. What is thermometer?
92. What is power?
93. Unit of power?
94. Unit of voltage?
95. What is ohm's law?
96. What is doping?
97. What is forward biasing?
98. What is reverse biasing?
99. What does the black wire indicate?
100. What does the red wire indicate?



## Bio Green Bloom-Energy

1. Why do we need to do this project?
2. In general Use of project?
3. What will we get by this project?
4. What comes under electronics?
5. What is the main aim of this project?
6. What is chemical formula involved in this project?
7. In general which process is used in this project?
8. What is photosynthesis?
9. What is photo dark reaction?
10. What is meant by respiration?
11. Which items involved in the photosynthesis?
12. What is meant by UV rays?
13. What is by chemical reaction?
14. Which energy involved in photo synthesis?
15. What is the species of plants?
16. What is meant by organic matter?
17. What's comes under organic matter?
18. What comes under bacteria?
19. What is meant by glucose?
20. Chemical formula for glucose?
21. Which ions are available in water?
22. What is meant bi-product?
23. Which bi-product produced in photosynthesis?
24. What is the chemical equation of photo synthesis?
25. What is meant by membrane?
26. Which material is used for membrane?
27. What is the purpose of vascular system in plant?
28. What percentage of oxygen in earth?
29. Percentage of carbon dioxide in earth?
30. Percentage of water available in the earth?
31. What are the trees comes under money plant?
32. What is meant by algae & fungi?
33. Where it is available?
34. What is meant by moss?
35. Where it is available?
36. What is meant by water content?
37. In which plant more water content available?
38. What is the tittle of the project?
39. What is meant by bloom?
40. Why we suggest that name?
41. What is energy?
42. What is efficiency?
43. How efficiency is calculated?
44. What is cation?
45. What is anion?
46. What is meant by cat list?
47. Which material used for cation?
48. Which material used for anion?
49. Which material used for cat-list?
50. Which sources are available for generation of electricity?
51. What is meant by electricity?
52. Difference between solar energy and wind energy?
53. What is fuel cell?
54. Difference between fuel cell and green energy
55. What is meant by conventional sources?
56. What is meant by non-conventional resources?
57. Difference between them?
58. What is potential difference?
59. What is current?
60. What is power?



61. What is battery?
62. What is sensor?
63. Which sensor is used in this project?
64. What is motor?
65. What are the units of power?
66. What is meant by work-done?
67. Energy units?
68. What is power booster?
69. What is meant by harvester?
70. Why we are using copper as anion?
71. Why we are using aluminium as cation?
72. Which material is used as membrane?
73. Working principle of motor?
74. Which parts are available in trees?
75. Electricity units?
76. What is meant earthen?
77. What is meant by conductivity?
78. Earth conductivity?
79. Application of this project?
80. What are the future benefits of this project?
81. What is meant by global warming?
82. Why it occur?
83. Advantage of this project?
84. Which circumstances are required for plant growth?
85. Where we are using this project?
86. Cost of the project?
87. What is meant by charge carrier?
88. What is chlorophyll?
89. What is meant by osmosis?
90. What is meant by reverse osmosis?
91. What is meant by transpiration?
92. What is meant by micro-organism?
93. Which electricity is produced in this project?
94. What is meant by dc current & dc voltage?
95. What is meant by ac current & ac voltage?
96. What is led?
97. Which principle is involved in this project?
98. How we are measuring the voltage?
99. What is meant by multi meter?
100. What is resistance?



## Pipeline Inspection and Borewell Rescue Robot

1. What is Electronics?
2. What is Resistor?
3. Why Resistors are colour Coded?
4. What are parts it involves?
5. What is RPM?
6. What is LED?
7. What is Capacitor?
8. What is Capacitance?
9. What Basic Components of Electronics?
10. What is the use of Resistors?
11. What is the use of Capacitors?
12. What is Switch?
13. What are the Clap Switch Components?
14. What is Relay?
15. What is the Number of Threaded rods used?
16. What is relay Design?
17. What is use of Relay?
18. Operation of Clap Switch in this Project?
19. Operation of Buzzer in this Project?
20. What is LDR?
21. What is Transformer?
22. What is Transistor?
23. What are terminals of Transistors?
24. What is Voltage?
25. What is the function of DC Motor?
26. What is LED?
27. What are the sensors used?
28. What is Ultrasonic Sensor?
29. What is the work of IR sensor?
30. What is Current?
31. What is Semi-conductor?
32. Number of Resistors used in Clap Switch?
33. Difference between Condenser mic and Normal mic?
34. Applications of this project?
35. Reasons for placing two-threaded Rods?
36. What is the Resistivity of Copper?
37. How do we fix Resistors?
38. Which formula shows a direct proportionality between power and voltage?
39. With 1 mA of current, what wattage rating should a 470 ohm resistor have?
40. How is a 3.9 k  $\Omega$  resistor color-coded?
41. What resistor type is found in SIPs and DIPs?
42. What are the two major categories for resistors?
43. How many connections does a potentiometer have?
44. What are the Basic forms of Energy?
45. What is Ohm's Law?
46. Power is defined as?
47. What is the most commonly used conductor in Electricity?
48. With Ohm's law, no change in resistance means that current and voltage will be?
49. A potentiometer has how many leads?
50. What is the ratio of 13 to 47 expressed in Percentage?
51. What happens to Current and Resistance if the Voltage Doubles?



52. One problem with mechanically variable resistors is noticeable in audio circuits as?
53. A colour code of orange, orange, orange is for what ohmic value?
54. A conductor's cross-sectional area in circular mils for  $\frac{1}{2}$  inch is:
55. Power is measured in units of:
56. How many basic types of resistors exist?
57. With a complex circuit, a supply source senses:
58. How many ohms of resistance allows a current of 720  $\mu$  A to flow when 3.6 kV is applied?
59. Which is the most important step utilized when measuring resistors?
60. Components designed to oppose the flow of current are called?
61. How many amps are used by a 100 watt, 120 volt light bulb?
62. The source is 24 volts and the load resistance is 100  $\Omega$ . What is the load current?
63. Resistors are identified as to wattage by?
64. What type of resistors has a tolerance rating of 5% or greater?
65. Resistor tolerance is either printed on the component, or is provided by?
66. How many connections does a rheostat have?
67. What are the parts of a rheostat?
68. The load resistance increases. How will the load current change?
69. What is the power dissipated by a 1.2 k  $\Omega$  resistor with 12 volts across it?
70. How many joules of energy will a 10 W lamp dissipate in one minute?
71. Which type of test equipment is used to measure resistors?
72. What is Resistance?
73. If resistance decreases, then current will:
74. A wire with a smaller cross-sectional area will produce?
75. A 22-gauge wire will have a diameter in mils of?
76. The word *work* means that?
77. A good fuse will have?
78. What property does an incandescent lamp possess?
79. One advantage of a carbon film resistor over a carbon composition resistor is?
80. If a metallic conductor has a positive temperature coefficient of resistance, then?
81. What value of a  $\pm 5\%$  1.3 k  $\Omega$  resistor as measured by a digital voltmeter would be considered within tolerance?
82. For  $P = V^2/R$ , a decrease in resistance should produce:
83. After a lamp is turned on, its filament resistance will change to become:
84. Wire wound resistors are usually used in circuits that have:
85. How is power dissipated in a resistor?
86. Resistance in a circuit is:
87. The unit designator for resistance value is the:
88. One ampere of current flowing through one ohm of resistance is equal to:
89. What is Insulator?
90. What are Good Insulators?
91. How Insulators can be used?
92. What are the applications of Insulators?
93. What is Diode?
94. How Diodes can be used?



95. What are the applications of diodes?
96. What is Semi-conductor?
97. Where Semi-conductors can be used?
98. What are the applications of Semi-conductors?
99. What is Rectifier?
100. Where can we use rectifiers?





## IOT Based Water Management System

1. Why do we need to do this Project?
2. In general Use of project?
3. What will we get by this project?
4. What comes under Electronics?
5. What is a Microcontroller?
6. Why you work over this type of Project?
7. Which microcontroller you have used in this project?
8. How many pins does your Microcontroller have?
9. What is the use of Program in controller?
10. How you write the Program?
11. How do you uploading the program into the Arduino Uno?
12. What is the software used?
13. Difference between Software and Hardware?
14. Which Electronic Elements and have used in this Project?
15. What is meant by Hardware?
16. What is meant IC?
17. What are the uses of IC?
18. What are the different types of nature of current?
19. What is Sensor and its function?
20. Which sensor used in this experiment?
21. What is the input of Hall sensor?
22. Which supply is used for working of Kit?
23. What happens if kit is connected to supply in our home?
24. What is meant by Ground?
25. What is meant by Reset?
26. What is meant by IoT?
27. What is meant by Wi-Fi module?
28. What is the need of Wireless Transmission of Data?
29. What is Website?
30. How many Pins does Hall Sensor have?
31. What is meant by Cables?
32. What is the use of Cables?
33. What is meant by Transmitting Data?
34. What is meant by Receiving of Data?
35. What do you mean by Data?
36. How many pins exist in Wi-Fi Module?
37. What is Battery?
38. Why do you need Battery in this Experiment?
39. How to send program to Arduino Uno?
40. What is Arduino Uno?
41. How many Input Pins present in Arduino Uno?
42. How many Output Pins present in Arduino Uno?
43. Is inputs are Analog or Digital?
44. What do you mean by Input?
45. What do you mean by Output?
46. What is Analog input?
47. What is Digital Input?
48. What is the range of Voltage must be given to the Kit?
49. What is RAM?
50. What is ROM?
51. Difference between RAM and ROM?
52. What is the Use of Memory?
53. What each pin indicates of Wi-Fi Module?



54. What each pin indicates of Arduino Uno?
55. Is Arduino Uno acts like a Calculator?
56. Is it Harmful for living Beings?
57. Where Hall Sensor is fixed in our Home appliances?
58. How it gives indication to us as it is Working or not?
59. Is Wi-Fi Module is Flexible or not?
60. How IC is made?
61. What will be there inside the IC Chip?
62. Full form of IC?
63. What are the different types of Wi-Fi Module?
64. What are Components present in Hall sensor?
65. What is meant by Turbine?
66. What is the overall output obtained?
67. What does output characteristics indicates?
68. What X-axis and Y-axis indicates on characteristics?
69. What is meant by Flow Rate?
70. What are the units of Flow Rate?
71. Which mathematical calculations are used to calculate flow rate?
72. Difference between Current flow rate and Overall flow rate?
73. Can anybody open the created Website?
74. How we open the Website?
75. Is program is Unique for different applications?
76. How data is connected to Wi-Fi Module using mobile data?
77. How it works?
78. Difference between voltage and current?
79. Is website can open in any place over the world?
80. What are the different applications of Arduino Uno?
81. What is the main disadvantage of Arduino Uno?
82. What is the life span of Arduino Uno?
83. Is it System needed always?
84. What is the main purpose of System?
85. What is the working of Arduino Uno?
86. What is the working of Wi-Fi Module?
87. What is the working of Hall sensor?
88. What is Data?
89. What is Error in a program?
90. How to create a Website?
91. What is the need to create a website?
92. Where we placed this kit on our home appliances?
93. What is meant by delay?
94. Is there any delay present to transfer the data to website?
95. What are the limits to operate this kit?
96. What happens if operate beyond operating limits?
97. What are the main Issues of this project in the Society?
98. Is it easy to operate or not?
99. Where it can be used?
100. What is the main motto of this model on present Generation?



## Waste Water Treatment and Re-use

1. Project name?
2. Cost of the project?
3. Output % of water?
4. Percentage of wastage?
5. Which salts are present in the waste water?
6. Which chemicals are used in the treatment process?
7. Why ferric sulphate used in the treatment process?
8. Why ferric chloride used in the treatment process?
9. How many chemicals are used in the treatment process?
10. At which temperature the treatment process will done?
11. Which process using in the treatment?
12. Treated water will affect the soil or not?
13. For which purpose you will use the treated water?
14. Treated water is suitable for drinking or not?
15. How much percentage of waste water you will get from the houses?
16. How much percentage of waste water you will get from the industries?
17. How much percentage of chemicals you need to add in the treatment process?
18. Waste water means?
19. How we are classifying the waste water?
20. How many types of waste water? And in this project you mix all types of waste water or not?
21. How the water will fill in the primary tank?
22. How the bacteria will die during this treatment process?
23. This treatment will effect on the environment or not?
24. Does it give accurate results or not?
25. Does it easy to operate or not?
26. What is the meaning of project name?
27. Why you are interested to do this project?
28. What is the innovation in your project?
29. What are the benefits in your project?
30. What is the scientific principle involved in your project?
31. Have you exhibit this project before else?
32. What are the major components used in the project?
33. Where will go the drainage water?
34. At which place you will place the pipelines to plant?
35. What is the disadvantage in project?
36. What are the treatment steps to treat the waste water?
37. What is the primary process?
38. What is the secondary process?
39. Fluctuation means?
40. Sedimentation means?
41. Sodium phosphate means?
42. What is the purpose of filter in this treatment process?
43. What is the aim of the project?
44. Which filter you is used in this project?
45. Why you didn't use the remaining filters?
46. Coagulation means?
47. Why you are shaking the water?
48. Where you should place the plant?
49. How this project useful to next generation?
50. How it is useful to present generation?
51. After completion of treatment where you send the treated water?
52. How you remove the oil from the water?
53. How you remove the dust particles?
54. During this process how many pipelines are required to this project?



55. By using this process the water will be purified or not?
56. By using this treatment process underground water level increase or not?
57. How dams are constructed?
58. What is the use of dams?
59. In way you need to construct the dam to increase efficiency and reduce the cost?
60. Which area you need to prefer to construct the dam?
61. What are the factors effecting while constructing the dams?
62. What is the meaning of corrosion?
63. How corrosion will effect the equipment's?
64. What are causes of corrosion?
65. How we control the corrosion effect?
66. How many types of water?
67. What is the meaning of hard water?
68. What is the meaning of soft water?
69. Which chemicals present in the hard water?
70. Hard water is harmful or not?
71. How we treat the hard water?
72. What is the meaning of pH
73. What is the pH value of drinking water?
74. What is the range of pH value?
75. Why we need to maintain pH value constant?
76. Which chemicals present in the waste water( clothes washing, cleaning, bathing water)
77. How above chemicals will effect to the human being?
78. What is the meaning of bacteria?
79. How bacteria effect to the environment and human being?
80. How we are removing the bacteria from water?
81. How many types of bacteria are present in the water?
82. What is the osmosis process?
83. What is the reverse osmosis process?
84. What is the advantage and disadvantage in the osmosis and reverse osmosis process?
85. Which chemicals we use in osmosis process?
86. Which information you give to the young learners?
87. How many industries releasing huge amount of waste water?
88. Which materials used for manufacturing the pipes?
89. How we connect the pipes from each house and industry to treatment plant?
90. Based on which factors we take chemicals quantity to remove salts in waste water?
91. How we are measuring the water?
92. Which measurement tool is used to check whether the water pure or not?
93. What is your business plan?
94. Which diseases we are getting while drinking polluted water?
95. What are the nutrients present in the water?
96. What is polymer?
97. What chemicals and bacteria are present in the rain water?
98. How much time takes to treat the polluted water?
99. Why water is colour less, odourless and tasteless?
100. What is meaning of TMC which is used for water measurement?



## Aquaponics

1. Why do we need to do this project?
2. In general Use of project?
3. What will we get by this project?
4. What comes under aquaculture?
5. What is aquaponics?
6. Why you did only this project?
7. Which method of agriculture you have used in this project?
8. How many systems does your agriculture method has?
9. What is the concept of energy transmission?
10. What kinds of fishes are used?
11. What is hydroponics?
12. What is the logic behind bringing aquaculture and hydroponics together?
13. Difference between soil based and non-soil based agriculture systems?
14. What are advantages of using clay pellets in the place of soil?
15. What does pump do between two systems?
16. What are clay pellets?
17. How it makes energy out of fish wastage?
18. Difference between normal agriculture and aquaponics?
19. What are advantages of aquaponics?
20. Why is oxygen supply necessary in aquariums?
21. Where was aquaponics brought to work first?
22. Which is the biggest aquaponic farm?
23. Is it faster or efficient then a regular soil garden?
24. How much trouble is it to maintain a aquaponic system?
25. What is the most important aspect?
26. What is the mode of power used?
27. How much power does it use?
28. Do you have many problems with the water or air pumps?
29. Discuss about the water pump problems if any?
30. Discuss about the air pump problems if any?
31. What kind of fishes do you recommend?
32. Where can I find fish?
33. Do I need green house?
34. Can I grow potatoes and carrots?
35. How do I prevent fishes from dying?
36. What happens when the electricity goes out?
37. How long the system turns to be effective without electricity usage?
38. Does the system work without electricity supply?
39. Should I have a backup battery or generator setup?
40. What happens if I get fish from uncleaned environment?
41. Is it normal for my water to turn green?
42. Should I use pesticide?
43. Where is your college?
44. Which branch is u from?
45. What do you mean by electronics?
46. Diff b/w electronics and electrical?
47. How many labs does u have?
48. What do u do in labs?
49. What do you mean by mechanics?



50. What is ammonia?
51. What is nitrate?
52. What is the best way to control bugs?
53. What are system requirements?
54. What is bio filter?
55. Explain the process of bio filtration?
56. How much voltage is used?
57. What are solid filters?
58. What is the feeding process?
59. What are different breeds of fishes used?
60. What crops can be grown?
61. What types of systems can be used?
62. Full form of NFT?
63. Explain float bed or raft system?
64. Explain Ebb or Flood?
65. Tips for growers?
66. Tips for good agriculture practice?
67. Can I grow different types of plants at the same time?
68. What are types of beneficial bacteria?
69. Is aquaponics organic?
70. What do I do if water in my system starts to smell?
71. Building the aquaponics system is expensive?
72. What are clay pellets?
73. How to make clay pellets?
74. At what temperature these clay pellets should heat?
75. Is aquaponics system takes larger area?
76. Is clay pellets will float on water?
77. What clay pellets exactly do's?
78. What are the major do's of expanded clay pellets?
79. What are the major don'ts of expanded clay pellets?
80. Should allow the clay pellets to ever dry out?
81. What happens if clay pellets are used without a dedicated source of water?
82. Can we reuse the clay pellets?
83. Is it necessary that clay pellets should sterilizing with peroxide while reusing?
84. What is the inside shape of clay pellets?
85. Are there any types of clay pellets?
86. Is this system works without electricity?
87. How do I get rid of the white build on the tank?
88. What type of fishes is used for augaponics?
89. Is it more efficient or faster than a regular soil garden?
90. How much trouble is it to maintain?
91. What is the most important aspect?
92. How much power does it use?
93. Do you have any problems with the water or air pumps?
94. Where can I find fish?
95. Fish food alternatives are available?
96. Advantages of this system?
97. Disadvantages of this system?
98. Prototype should be any type?
99. Is this system is moveable?
100. Is this system takes larger area?



## Efficient Garbage Management System for Smart Cities

1. IR stands for?
2. Sensor used for Garbage level Detection?
3. Main components of IR sensor
4. The controller used in this project
5. 8051 is how many bit controller
6. Data bus of 8051 is
7. Address bus of 8051 is
8. ROM in 8051 is
9. RAM in 8051 is
10. LED stands for
11. In this project Transmitter is placed at
12. In this project Receiver is placed at
13. Robotic motors operating voltage
14. Microcontroller pin output voltage
15. Driver IC used to control motors
16. How many pins are there in Driver IC
17. No of pins in 8051
18. Operating voltage of 8051
19. Operating frequency of 8051
20. No of ports in 8051
21. No of I/O pins in 8051
22. The device used to convert AC to DC is
23. Type of rectifier used in Power supply
24. Type of Filter used in Power supply
25. Purpose of Resister in front of LED IS
26. Motor speed is controlled by using
27. PWM stands for
28. Type of motors used as robot wheels
29. Type of motors used as robot hand
30. To follow line no of IR sensors required
31. Software used to write the program
32. IDE Stands for
33. The Type/format of file dumped in controller is
34. IC stands for
35. 8051 available in what package
36. unit of resistance
37. units of capacitance
38. Resistor value is calculate using
39. Resistors are identified as to wattage by
40. What type of resistors have a tolerance rating of 5% or greater
41. The load resistance increases. How will the load current change
42. What is the power dissipated by a  $1.2\text{ k}\Omega$  resistor with 12 volts across it
43. How many joules of energy will a 10 W lamp dissipate in one minute
44. Which type of test equipment is used to measure resistors?
45. What is Resistance?
46. Electrical equipment is protected against excessive current by an
47. ohms law equation
48. For  $P = V^2/R$ , a decrease in resistance should produce:
49. After a lamp is turned on, its filament resistance will change to become
50. Wire wound resistors are usually used in circuits that have
51. How is power dissipated in a resistor?



52. In capacitor long led indicates what terminal
53. Resistance in a circuit is:
54. The unit designator for resistance value is the:
55. One ampere of current flowing through one ohm of resistance is equal to:
56. Regulator IC used to get 5V is
57. Regulator IC used to get 12V is
58. In LED long led indicates what terminal
59. no of terminals in P-N diode
60. Bridge Rectifier consists of ----- diodes
61. In Motors view RPM stands for
62. A good fuse will have:
63. 8051 is ---bit controller
64. no of timers in 8051
65. the size of timers in 8051
66. In which mode timer acts as Auto-reload
67. In serial communication no. of bits transmitted per second is called
68. Maximum memory supported by 8051 is
69. Energy gap of conductor is
70. Silicon has----- valence electrons.
71. A Semiconductor has -----Temperature coefficient of resistance
72. The most commonly used semiconductors are
73. The leakage current in a pn junction is in order of
74. A pn junction/Diode is a
75. A semiconductor material is formed by
76. The forbidden energy gap between valance band and conduction band in semiconductor material is about
77. N-type extrinsic semiconductor is obtained by adding
78. When Semiconductor materials is heated its resistance
79. The majority carrier in P-type extrinsic semiconductor material is
80. Conduction electrons have more mobility than holes because they
81. Electron mobility is defined as
82. The majority carrier in P-type extrinsic semiconductor material is
83. Power is measured in units of
84. Components designed to oppose the flow of current are called:
85. The program code of project written in -language
86. Purpose of Keil IDE in project is
87. Compiling means
88. Which formula shows a direct proportionality between power and voltage?
89. How do fixed resistors usually fail?
90. With Ohm's law, if voltage increases and resistance stays the same:
91. If a Resistor has orange, white, red, gold colours the resistance is
92. What are the two major categories for resistors?
93. How many connections does a potentiometer have?
94. In project transmitter and receiver communicated through what
95. 8051 microcontroller operating voltage
96. The size of ALU in 8051 is
97. ALU stands for
98. In 8051 which port don't have pull up logic
99. In 8051Special functions are present in which port?
100. What is Infra-red?





## Garbage Monitoring System

1. What is garbage?
2. Why it is needed to be monitored?
3. How garbage is monitored using garbage monitoring?
4. What are the components used in the circuit?
5. What are rules and regulations that guide garbage monitoring in India?
6. How collected garbage is furtherly utilized?
7. How many types of garbage's are there?
8. What is dry garbage?
9. What is meant by wet garbage?
10. How power is produced from this garbage?
11. What is aurdino?
12. What is aurdino uno?
13. How aurdino came into existence?
14. How aurdino is used in electronics?
15. Why ground pin is existed in aurdino?
16. How many pins exist in a aurdino uno board?
17. What are the basic circuitaries used in aurdino?
18. Why aurdino is used commonly?
19. How aurdino is programmed in?
20. What is meant by open source?
21. What is breadboard?
22. How breadboard is used?
23. Why bread board is only used to make connections?
24. How is a bread board divided?
25. How many lines exist on a bread board?
26. What is the internal connection of a bread board?
27. How connections are made on the bread board based on the vertical and horizontal line up?
28. Where power supplies are placed on bread board?
29. Where is the ground placed on the bread board?
30. How circuits are connected in bread board?
31. What are sensors?
32. How are they used?
33. Give any 3 basic sensors?
34. List the sensors that we use in our day to day life?
35. How sensors are used in knowing the temperature?
36. How soil moisture can be tested?
37. Can pollution be monitored using sensors?
38. How a sensor can control traffic flow?
39. How the data is stored?
40. List the sensors we most commonly use?
41. What are the ultrasonic sensors?
42. How are they used?
43. List of applications of ultrasonic sensors?
44. How does it function?
45. How ultra-sonic sensors play a major role in garbage monitoring?
46. What environmental condition affects ultrasonic sensors?
47. What is the speed of ultrasonic sensors?
48. Why ultrasonic sensors are faster than photoelectric sensors?
49. How to implement ultrasonic sensors for garbage monitoring?



50. Where do we use ultrasonic sensors in day to day applications?
51. What are resistors?
52. How are they used?
53. How are resistors classified?
54. What are passive elements?
55. What are active elements?
56. In which category does resistors falls in?
57. What is tolerance?
58. Why tolerance takes place in resistors?
59. What are 3 band resistors and 4 band resistors?
60. In which direction resistors can be placed why?
61. Why some amount of voltage drops occurs across the resistors?
62. What is module?
63. How module is needed?
64. How is module used?
65. What is GSM module?
66. How come GSM module is used in electronics?
67. What are applications of GSM module?
68. What are the merits of GSM module?
69. List 3 demerits of GSM module?
70. Where else does GSM module can be used in electronics?
71. What is a Wi-Fi module?
72. How Wi-Fi module is used?
73. Applications of Wi-Fi module?
74. What are the merits of Wi-Fi module?
75. List 3 demerits of Wi-Fi module?
76. How Wi-Fi module can be used in garbage system?
77. What languages are used to programme Wi-Fi and gsm module?
78. Can we use both gsm and Wi-Fi module in a single circuitry?
79. What are the advantages of Wi-Fi module over gsm?
80. What is the other kind of modules that exists?
81. What are coaxial cables?
82. How are coaxial cables uses?
83. How are cables used as connection between circuit and screen?
84. How are they made up of?
85. How banana and crocodile clips are used?
86. What is IOT?
87. Expand IOT?
88. When IOT does come into existence?
89. Applications of coaxial cables?
90. Why does IOT preferred in many of recent applications?
91. How IOT is used?
92. How data is managed to transfer using IOT?
93. How many devices can be connected at a time using IOT?
94. List some of the applications of IOT?
95. What are the IOT applications we see in our day to day life?
96. How cloud related with IOT?
97. How the signals are managed to send to the municipality?
98. How IOT is used in garbage monitoring?
99. Where the data does stored and who is going to monitor the data?
100. In what fields IoT can be used?



## Simple Ways of Composting at Home

1. How to compost at home?
2. How many ways are there to compost?
3. What is the aim of the project?
4. What is the definition of composting?
5. How is compost made?
6. What to compost?
7. What should I compost?
8. What is the basic method of composting?
9. What not to compost? Why.
10. What are the benefits of composting?
11. What are the planning tips for composting at home?
12. What are the storage tips for composting at home?
13. Do I need a bin to make compost?
14. What is the best place to put a compost pile?
15. What is easiest way to compose?
16. Can I compost in winter?
17. When is compose finished and safe to use?
18. Do I need to be sterilized or screened?
19. Do I need to fertilize if used to compost?
20. What if I make much to compost?
21. What if the pile has an odour?
22. Should I wear gloves to handle compost?
23. How can kitchen wastes be stored for later composting?
24. Should I add group of soil or fertilizer?
25. What if the compost pile doesn't heat up?
26. How do I compost with too many high carbon materials?
27. Which soil should be added to composting?
28. Which soil should be added to composting?
29. What are the ingredients required?
30. How many days are needed to compost at home?
31. What are the benefits of reducing wasted at home?
32. What are the ways to reduce wasted food?
33. What planning tips are for reducing of wasted food?
34. What the storage tips are for reducing of wasted food?
35. What are prep tips?
36. What are thriftiness tips?
37. What are the benefits of recycling waste materials?
38. How to make compost from kitchen waste?
39. How long does it take to make compost?
40. When is compost finished and ready to use?
41. What should I add to compost and what should I avoid?
42. How do I get started? I haven't made compost before.
43. Can I compost all year round?
44. What should I do in winter?
45. My compost smells bad, what should I do?
46. My compost pile is just sitting there & nothing seems to be happening. What should I do?
47. Can pine needles be composted? Rose pruning? Holly leaves? Rhododendron leaves?
48. How to determine compost mixture?
49. How to make compost a pile?
50. How and when to add finished compost to your garden?
51. How can I tell if my compost is ready to use?
52. What are good composing ingredients?
53. What is compost "Tumbler"?
54. What is Indoor "Vermi" (Worm) compost bins?
55. What is worm composting bin?
56. What is meant by homemade composting bins?
57. Which soil is used for composting?



58. How to use compost in our garden & yard?
59. What is meant by ashes?
60. Can you compost ashes?
61. What should be compost bin moisture level?
62. How to compost raw materials?
63. Why shouldn't organic material wastes go to landfill?
64. How large an area do you need to get finished compost?
65. Do I need to add fertilizer to my garden if I use compost?
66. How does compost effect the pH(acidity) of soils?
67. Will I have too much compost?
68. Can you recycle all your yard waste?
69. What can I do with all my composted grass clipping if I have a large garden?
70. What are the storage needs for composting in average yard
71. What can be done about a smelly pile?
72. Is it ok to garden in pure compost?
73. Is compost mixed with fill soil?
74. Do compost piles attract slugs?
75. How can I stop flies and another insects from becoming pests around the compost pile?
76. Can vacuum dust be composted?
77. Can yard wastes treat with chemical pesticides and herbicides to be put in compost? What happens to these in compost pile?
78. Can pet wastes be added to home from newspaper be compost?
79. Can fireplace and barbecue ash be used in compost?
80. Can any diseased plant be safely composted?
81. Can weeds be composted?
82. How do you know when you have the proper 30:1 Carbon to Nitrogen ratio (C-N) for fast composting?
83. How can wood or bark chips be used in compost?
84. Can wood chips be used in compost?
85. Can sawdust and wood shavings be used in compost?
86. Will mulching with wood chips or sawdust rob nitrogen from plants?
87. How do you gauge the proper moisture content for composting?
88. Do I need water to compost my pile?
89. Should compost piles be covered?
90. Do I need to use a shredder to make good compost?
91. How can compost reheated? Will nitrogen fertilizer help?
92. Should limestone to be added to compost?
93. Can grass clippings be composted alone without becoming matted and smelly?
94. Why can't dairy products, meat and fish scrap be composted?
95. Can coffee filters and teabags be composted?
96. Are bugs in my worm box OK?
97. Should sod be composted separately?
98. What tools can be used to chip woody wastes? How do you know what size to use?
99. Should compost "starters" or soil be added to compost piles?
100. Can limbs from trees with tent caterpillars be composted?



## Unique Way Dosa-Maker

1. Why do we need to do this project?
2. In general Use of project?
3. What will we get by this project?
4. What is the main aim of this project?
5. In general which process is used in this project?
6. What is the tittle of the project?
7. Why we suggest that name?
8. What is a Dosa maker?
9. What is product?
10. What is non-sticky?
11. Which materials used for Dosa Maker?
12. What is stainless steel?
13. How Dosa maker works?
14. What is a wing?
15. Main purpose of Dosa maker?
16. What is meant by electricity?
17. What is current?
18. What is power?
19. What is voltage?
20. What is frequency?
21. What are the units of voltage?
22. What are the units of frequency?
23. Difference between voltage & frequency?
24. What are the units of power?
25. What are the electricity units?
26. Which sources are available for dosa maker?
27. What is heat source?
28. What is temperature?
29. What are the units of temperature?
30. How temperature controls?
31. What is thermostat?
32. What is sensor?
33. How heat is produced?
34. Application of this project?
35. What are the future benefits of this project?
36. Advantage of this project?
37. Where we are using this project?
38. Cost of the project?
39. What is a consumer cost?
40. What is meant by dc current & dc voltage?
41. What is meant by ac current & ac voltage?
42. Which principle is involved in this project?
43. Which method is developed?
44. What is mechanism?
45. Which mechanism is used?
46. What is involute slider mechanism?
47. What is four slotted mechanism?
48. What is slider?
49. What is slotted?
50. Difference between the slider & slotted?
51. Difference between the involute & four slotted mechanism?
52. What is flour?
53. How much quantity of water is used?
54. What is batter mass?
55. How batter mass prepared?
56. How much time to take to prepare batter?
57. What is batter?
58. Where batter is placed?
59. What is lower plate?



60. What is upper plate?
61. What is plate?
62. Difference between upper & lower plate?
63. Where plates are placed?
64. What is machine?
65. What is input of this project?
66. What is output of this project?
67. What is tube?
68. How batter is prepared?
69. What is transferring process?
70. What are slider wings?
71. What is shape of dosa maker?
72. What is size of dosa maker?
73. What is the weight of dosa maker?
74. How much time it takes to prepare dosa?
75. What is automatic?
76. What is instant cooking?
77. What is the shape of dosa?
78. What is the meant by manual work?
79. Difference between manual & automatic work?



## E-Based Calorie and Nutrition Measurement from Food Image

1. What is the function of calorie?
2. What are the units of calorie?
3. How this project is helpful to society?
4. What is the meant by E-Based calorie and nutrition measurement system?
5. Give the classification of carbohydrates?
6. What is the unit of carbohydrates?
7. What is the function of carbohydrates?
8. What is the function of fiber?
9. Why we need to take vitamins?
10. Give the classification of vitamins?
11. What are different types of B vitamins?
12. What is the other name of a vitamin?
13. What is the other name of C vitamin?
14. What is the other name of B2 vitamin?
15. What is the other name of B9 vitamin?
16. What is the other name of B12 vitamin?
17. What is the use of minerals to our body?
18. What are the different types of minerals?
19. What is the function of protein?
20. Why we have to take Iron?
21. What is the function of Alpha linolenic acid?
22. What are the sources of calories?
23. What are the sources of the protein?
24. What are the sources of the carbohydrates?
25. What are the sources of the fiber?
26. What are the sources of the vitamin A?
27. What are the sources of the vitamin omega3?
28. What are the sources of the ascorbic acid?
29. What are the sources of the Beta-carotene?
30. What are the sources of the Iron?
31. What are the sources of the vitamin B12?
32. What are the sources of the vitamin B9?
33. What are the sources of the vitamin B2?
34. What are the sources of the vitamin B6?
35. What are the sources of the Niacin?
36. What are the sources of the Thiamine?
37. What is the function of the calcium?
38. What is the function of the magnesium?
39. What is the function of the sodium?
40. What is the function of the potassium?
41. What are the sources of the calcium?
42. What are the sources of the magnesium?
43. What are the sources of the sodium?
44. What are the sources of the potassium?
45. What is the function of the selenium?
46. What is the function of the Iodine?
47. What is the function of the copper?
48. What is the function of the fluoride?
49. What is the function of the Zinc?
50. What is the function of the phosphorus?
51. What is the function of the sulfur?
52. What are the sources of the selenium?
52. What are the sources of the Iodine?



53. What are the sources of the magnesium?
54. What are the sources of the sodium?
55. What are the sources of the potassium?
56. What are the sources of the copper?
57. What are the sources of the fluoride?
58. What are the sources of the Zinc?
59. What are the sources of the phosphorus?
60. What are the sources of the sulfur?
61. What are the affects due to deficiency of proteins?
62. What are the affects due to deficiency of fiber?
63. What are the examples of the protein deficiency diseases?
64. What are the examples of the vitamin deficiency diseases?
65. What is web page?
66. What is the purpose of web page?
67. How we are creating the web page?
68. What are the inputs to the web page?
69. What is the output from the web page?
70. Which type of language used in creating web page?
71. What is the abbreviation and use of the HTML?
72. What is INTERNET?
73. What is the abbreviation and use of PHP?
74. What are the advantages of web page?
75. What are advantages of PHP?
76. What is the use of java script?
77. Why we are using weight machine in this project?
78. What are the effects of diabetes?
79. What are the reasons for getting diabetes?
80. How we control the diabetes?
81. What are the effects of Hyper-Tension?
82. What are the reasons for getting Hyper-Tension?
83. How we control the Hyper-Tension?
84. What are the effects of Obesity?
85. What are the reasons for getting Obesity?
86. How we control the Obesity?
87. 1 calorie=\_\_\_\_\_
88. What is the meaning of sedentary work and give examples?
89. What is the meaning of modern work and give examples?
90. What is the meaning of heavy work and give examples?
91. How much calories and nutrients need for children (1-3, 4-6&7-9) years per day?
92. How much calories and nutrients need for boys and girls (10-12, 13-15&16-18) years per day?
93. How much calories and nutrients need for children (0-6&6-12) months per day?
94. How much calories and nutrients need for women (sedentary, moderate, heavy) work per day?
95. How much calories and nutrients need for men (sedentary, moderate, heavy) work per day?
96. How much calories and nutrients need for pregnant lady per day?
97. What is the abbreviation of RDA?
98. What is the abbreviation and use of Wi-Fi?
99. What are the advantages of this project?
100. Why we are using PHP, JAVA, HTML script languages in this project?





## Air Quality Monitor

1. According to EPA of USA, the following is not one of the six major pollutants?
2. The Pollution Standard Index (PSI) scale has span from
3. Which of the following is an organic gas?
4. Which of the following is/are inorganic gas (es)?
5. The major contributor of Carbon monoxide is
6. Fugitive emissions consist of
7. Ozone of found in
8. Ozone is formed in the upper atmosphere by a photochemical reaction with
9. The principal source of volatile organics (Hydrocarbons) is
10. The function of automobile catalytic converter is to control emissions of
11. The list of industrial sources of air pollution and their emissions are given. Match the following.
 

A. Ammonia	1. Carbon monoxide
B. Plating	2. Particulates
C. Fertilizers	3. Metal fumes

 The correct order is
12. The threshold concentration of sulphur dioxide in any industrial activity should not be permitted beyond
13. The threshold limit of benzene is
14. Which of the following is used as antiknock compound in gasoline?
15. Which of the following is a fermentation product of molasses?
16. The boiler flue gas is source of
17. What is the project?
18. What are the basic components required for a Project.
19. What are the Input devices?
20. What are the output devices?

21. What are the various hardware boards?
22. List the electronic components or devices?
23. What the devices used in any project.
24. Why a resistor is used in Project.
25. Why a capacitor is used in Project.
26. Why a diode is used in Project.
27. Why a transistor is used in Project.
28. Why an Integrated circuit (IC) is used in Project.
29. Why a transformer is used in Project.
30. Why a regulator IC (7805) is used in Project.
31. Why a relay is used in Project.
32. Discuss about various sensors.
33. Discuss various types of resistors.
34. What is difference between AC and DC voltages?
35. How a resistor value is identified.
36. What is colour code for 1k Ohm?
37. What is colour code for 220 Ohm?
38. If 60 J of energy are available for every 15 C of charge, what is the voltage?
39. An atom's atomic number is determined by the number of.
40. Voltage will influence current only if the circuit is:
41. List the latest technology modules.
42. Discuss about MQ135 Sensor.
43. What components used in your project.
44. What is need of Wi-Fi module.
45. Discuss about arduino Uno board.
46. What is importance of Arduino board?
47. What an arduino board consists.
48. Where did you get this idea?
49. What is an IOT?
50. What are the difference between software and hardware?



## Railway Track Crack Detection Robot

1. ----- is used for detecting cracks in the railway tracks.
  2. A sensor basically consists of ----- and ----- .
  3. IR LED emits -----
  4. ----- Resistance changes according to the amount of IR radiation falling on IR Sensor.
  5. ----- can sense the voltage change and generate the output accordingly.
  6. The internal RAM memory of the 8051 is: \_\_\_\_\_
  7. The 8051 has \_\_\_\_\_ 16-bit counter/timers.
  8. The address space of the 8051 is divided into \_\_\_\_\_ distinct areas.
  9. Data transfer from I/O to external data memory can only be done with the \_\_\_\_\_-command.
  10. The 8051 can handle \_\_\_\_\_ interrupt sources.
  11. ----- implemented the first C compiler designed from the ground up specifically for the 8051 microcontroller.
  12. Keil development tools offer a complete development environment for -----, ----- & ----- processor-based devices.
  13. The MDK Core contains all development tools including -----, ----- & -----.
- DK includes two ARM C/C++ ----- with assembler & linker.
14. Highly optimized run-time libraries that are tailored for optimum ----- & -----
  15. How many bit data bus does 8051 has?
  16. The 8-bit address bus allows access to an address range of:
  17. The number of data registers is:
  18. The I/O port that does not have a dual-purpose role is:
  19. To interface external EPROM memory for applications, it is necessary to demultiplex the \_\_\_\_\_ lines of the 8051.
  20. What does MOV A, @ R1 command will perform?
  21. A \_\_\_\_\_ is used to name a single line of code.
  22. Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an:
  23. 8051 has \_\_\_\_\_ bit program counter.
  24. When the 8051 is reset and the  $\overline{EA}$  line is HIGH, the program counter points to the first program instruction in the:
  25. ----- may be added any time to MDK-Core or DS-MDK.
  26. Use of sensor to interface the computer and embedded system meant for ----- & -----
  27. Testing, ----- & ----- still underway to enhance the robot.
  28. The motor driver used is -----
  29. The microcontroller used for crack detection is -----.
  30. The tool used to check the output of an embedded based program is -----.
  31. An alternate function of port pin P3.4 in the 8051 is:
  32. The I/O ports that are used as address and data for external memory are:



33. The 8051 has \_\_\_\_\_ parallel I/O ports.
34. The total external data memory that can be interfaced to the 8051 is:
35. The statement LCALL READ passes control to the line labelled:
36. 8051 has \_\_\_ I/O pins.
37. Abbreviation of SIM –
38. Wavelength of Infrared\_\_\_\_\_.
39. 8051 has \_\_\_ number of serial ports.
40. Number of general purpose registers :
41. GSM is abbreviated as:
42. GSM requires \_\_\_ to activate communication with network.
43. Frequency range of Infrared\_\_\_\_\_.
44. LCD stands for\_\_\_\_\_.
45. Processor Status Word (PSW) of 8051 has \_\_\_ bits.
46. The devices that provide the means for a computer to communicate with the user or other computers are referred to as:
47. The special function registers are maintained in the next 128 locations after the general-purpose data storage and\_\_\_\_\_.
48. \_\_\_\_\_ often have CPU, RAM and ROM.
49. Write the instruction to move the contents of register 3 to the accumulator?
50. 8051 follows which architecture? Harvard Architecture
51. What is the width of data bus?
52. What is the width of address bus?
53. How much total external data memory that can be interfaced to the 8051?
54. How many input output lines 8051 has\_?
55. On-chip RAM is also called \_\_\_\_\_ memory?
56. How Much on chip RAM is available?
57. 8051 micro controller is \_\_\_\_\_ pin IC?
58. GSM stands for\_\_\_\_\_?
59. ----- can be accessed only sequentially?
60. MICR stands for-----?
61. 8085 has --- sign flags. ?
62. IC (instruction cycle), FC (fetch cycle) and EC (executive cycle) are related as-----?
63. The size of cache memory in most microcomputers is about ---- ---?
64. ----- Computer memories is fastest?
65. During processing the instructions, data, intermediate results and final results in a computer are held in-----?
66. Z flag is ----- if an ALU operation results in 0. ?
67. The power requirements of a DRAM in active and stand by modes is about -----?
68. In a computer the instructions, data, intermediate and final results during processing are held in ALU.
69. The interface chip for 8086 and 16 bit ADC is -----?
70. The noise generated by a resistor depends upon-----?
71. In a super heterodyne receiver the ----- has better selectivity than RF stage?
72. The function of an AM detector circuit is to -----?
73. Most popular IF for receivers tuning to 540 to 1650 kHz is----- ?
74. -----has volatile memory?
75. In a broadcast ----- receiver mixer input must be tuned to the signal frequency?
76. A heterodyne frequency changer is called a -----?
77. PIR Sensor is abbreviated as -----?
78. A 256 x 4 EPROM has-----?



79. A Robot is a \_\_\_\_\_?
80. Drives are also known as \_\_\_\_\_?
82. List different types of passive components
83. List different types of active components
84. Define resistor.
85. Define capacitor.
86. Define inductor.
87. Define diode.
88. Diode allows electric current when it is \_\_\_\_\_?
89. Diode blocks electric current when it is \_\_\_\_\_?
90. Define transistor.
91. Who invented transistor.
92. Which types of materials are used to construct transistors?
93. Define integrated circuit (IC)
94. Who invented integrated circuit?
95. What is Oscillator?
96. What is an Integrated Circuit?
97. What is resistor?
98. What is inductor?
99. What is conductor?
100. What is a semi-conductor?



## Adaptive Fire Fighting Robot

1. Robot is derived from \_\_\_\_\_ word
2. What is a Robot?
3. What is the main objective(s) of Industrial robot
4. What is the Technology used in Robot and NC Machine?
5. What are the functions of Robot in this Project?
6. Drives are also known as?
7. Clockwise or Anti clockwise rotation about the vertical axis to the perpendicular arm is provided through
8. Radial movement (in & out) to the manipulator arm is provided by
9. Industrial Robots are generally designed to carry which of the following coordinate system(s).
10. The Robot designed with Cartesian coordinate systems has
11. The Robot designed with Polar coordinate systems has
12. The Robot designed with cylindrical coordinate systems has
13. Which of the following work is done by General purpose robot?
14. The following drive is used for lighter class of Robot.
15. Internal state sensors are used for measuring \_\_\_\_\_ of the end effector.
16. What are the sensors determines the relationship of the robot and its environment and the objects handled by it
17. Which of the following is not a programming language for computer controlled robot?
18. In which of the following operations Continuous Path System is used
19. Define electronic component.
20. List different types of electronic components?
21. Define passive component?
22. What are the characteristics of passive components?
23. What are the characteristics of active components?
24. Define active component.
25. List different types of passive components
26. List different types of active components
27. Define resistor.
28. Define capacitor.
29. Define inductor.
30. Define diode.
31. Diode allows electric current when it is
32. Diode blocks electric current when it is
33. Define transistor.
34. Who invented transistor.
35. Which types of materials are used to construct transistors?
36. Define integrated circuit (IC)
37. Who invented integrated circuit?
38. How many control lines are present in analog to digital converter in addition to reference voltage?
39. Find out the integrating type analog to digital converter?
40. Which type of ADC follow the conversion technique of changing the analog input signal to a linear function of frequency?
41. Which A/D converter is considered to be simplest, fastest and most expensive?
42. The flash type A/D converters are called as
43. What is the advantage of using flash type A/D converter?
44. The number of comparator required for flash type A/D converter
45. Drawback of counter type A/D converter
46. Calculate the conversion time of a 12-bit counter type ADC with



- 1MHz clock frequent to convert a full scale input?
47. In a servo tracking A/D converter, the input voltage is greater than the DAC output signal at this condition
  48. At what condition error occurs in the servo tracking A/D Converter?
  49. How many clock pulses do a successive approximation converter requires for obtaining a digital output.
  50. What is Electronic?
  51. What is communication?
  52. Different types of communications? Explain.
  53. What is sampling?
  54. State sampling theorem.
  55. What is cut-off frequency?
  56. What is pass band?
  57. What is stop band?
  58. Explain RF?
  59. What is modulation? And where it is utilized?
  60. What is demodulation?
  61. Name the modulation techniques.
  62. Explain AM and FM.
  63. Where do we use AM and FM?
  64. What is a base station?
  65. How many satellites are required to cover the earth?
  66. What is a repeater?
  67. What is an Amplifier?
  68. Example for negative feedback and positive feedback?
  69. What is Oscillator?
  70. What is an Integrated Circuit?
  71. What is crosstalk?
  72. What is resistor?
  73. What is inductor?
  74. What is conductor?
  75. What is a semi-conductor?
  76. What is diode?
  77. What is transistor?
  78. What is op-amp?
  79. What is a feedback?
  80. Advantages of negative feedback over positive feedback.
  81. What is a Barkhausen criterion?
  82. What is CDMA, TDMA, and FDMA?
  83. Explain different types of feedback
  84. What are the main divisions of power system?
  85. What is Instrumentation Amplifier (IA) and what are all the advantages?
  86. What is meant by impedance diagram?
  87. What is the need for load flow study?
  88. What is the need for base values?
  89. What are the sensors determines the relationship of the robot and its environment and the objects handled by it
  90. What is the advantage of using flash type A/D converter?
  91. What are the characteristics of passive components?
  92. What is the advantage of using flash type A/D converter?
  93. The Robot designed with Polar coordinate systems has
  94. The following is true for a Robot and NC Machine
  95. What is Oscillator?
  96. What is diode?
  97. How many clock pulses do a successive approximation converter requires for obtaining a digital output.
  98. Define integrated circuit (IC)
  99. Which drive is used for lighter class of Robot?



## Rectenna Application Wireless Mobile Charger using Electromagnetic Power

1. Wireless power transfer works on the ..... power transfer principle, as found in the conventional
2. The ..... package is universally preferred for all commercial-industrial applications at power dissipation levels to approximately 50 W
3. Objectives of electrical power transmission is/are
4. Which of the following statement is
5. What are the Primary Transmission and distribution voltages
6. Which of the following materials is not used for transmission and distribution of electrical power
7. Which of the following are the constants of the transmission lines?
8. The square root of the ratio of line impedance and shunt admittance is called the
9. High voltage transmission lines use
10. Multicore cables generally use
11. Which of the following relays is used on long transmission lines?
12. Which of the following characteristics should the line supports for transmission lines possess
13. For transmission of power over a distance of 200 km, the transmission voltage should be
14. Constant voltage transmission entails the following disadvantage
15. For transmission of power over a distance of 500 km, the transmission voltage should be in the range
16. Wireless charging is based on the principle of \_\_\_\_\_
17. Mains voltage is converted into
18. Current flowing within the receiver coil is converted into direct current
19. The high frequency alternating current, which is linked with
20. The Transmitter section of wireless charger circuit consists
21. The oscillator converts
22. The operating frequency of the oscillator is determined by the resonance
23. The equation for finding the inductance of a single layer air core coil is
24. Inductive Power Transfer (IPT) Technology is also called
25. According to EPA of USA, the following is not one of the six major pollutants
26. The Pollution Standard Index (PSI) scale has span from
27. Which of the following is an organic gas?
28. Which of the following is/are inorganic gas (es)?
29. The major contributor of Carbon monoxide is
30. Fugitive emissions consist of
31. Ozone of found in
32. Ozone is formed in the upper atmosphere by a photochemical reaction with
33. The principal source of volatile organics (Hydrocarbons) is
34. The function of automobile catalytic converter is to control emissions of
35. The list of industrial sources of air pollution and their emissions are given. Match the following.
 

A. Ammonia	1. Carbon monoxide
B. Plating	2. Particulates
C. Fertilizers	3. Metal fumes
36. The threshold concentration of sulphur dioxide in any industrial activity should not be permitted beyond
37. The threshold limit of benzene is
38. Which of the following is used as antiknock compound in gasoline?



39. Which of the following is a fermentation product of molasses?
40. What is the project?
41. What are the basic components required for a Project.
42. What are the Input devices?
43. What are the output devices?
44. What are the various hardware boards?
45. List the electronic components or devices?
46. What the devices used in any project.
47. Why a resistor is used in Project.
48. Why a capacitor is used in Project.
49. Why a diode is used in Project.
50. Why a transistor is used in Project.
51. Why an Integrated circuit (IC) is used in Project.) None
52. Why a transformer is used in Project.
53. Why a regulator IC (7805) is used in Project.
54. Why a relay is used in Project.
55. Discuss about various sensors.
56. Discuss various types of resistors.
57. What is difference between AC and DC voltages?
58. How a resistor value is identified.
59. What is colour code for 1k Ohm?
60. What is colour code for 220 Ohm?
61. If 60 J of energy are available for every 15 C of charge, what is the v voltage?
62. An atom's atomic number is determined by the number of
63. Voltage will influence current only if the circuit is:
64. List the latest technology modules.
65. Discuss about MQ135 Sensor.
66. What components used in your project.
67. What is need of Wi-Fi module?
68. Discuss about arduino Uno board.
69. What is importance of Arduino board?
70. What an arduino board consists.
71. What is an IOT?
72. What are the difference between software and hardware?
73. Driver IC used to control motors
74. How many pins are there in Driver IC
75. No of pins in 8051
76. Operating voltage of 8051
77. Operating frequency of 8051
78. No of ports in 8051
79. No of I/O pins in 8051
80. The device used to convert AC to DC is
81. Type of rectifier used in Power supply
82. Type of Filter used in Power supply
83. Purpose of Resister in front of LED is?
84. Define electronic component.
85. List different types of electronic components
86. Define passive component.
87. What are the characteristics of passive components?
88. What are the characteristics of active components?
89. Define active component.
91. List different types of active components
92. Define resistor.
93. Define capacitor.
94. Define inductor.
95. Define diode.
96. What is a repeater?
97. What is an Amplifier?
98. Example for negative feedback and positive feedback?
99. What is Oscillator?
100. What is an Integrated Circuit?





## Virtual Wheel Chair

1. Working principle of eye blink sensor?
2. What are the features of sensor?
3. What are the applications of sensor?
4. What is the working principle of sensor?
5. Why arduino board is used to design this project?
6. What are the specifications of arduino board?
7. Use of arduino?
8. What is arduino board?
9. Why arduino is better than controllers?
10. Features of the Arduino?
11. What is the programming language of arduino?
12. What is the use of motors?
13. What is the rpm of motor?
14. What is the voltage of motor?
15. What is the torque of motor?
16. What is the shaft diameter, length of motor?
17. What is the shaft brush type, weight of motor?
18. What is the supply voltage of motor driver?
19. What is the output, peak current of motor driver?
20. What are the specifications of motor driver?
21. What are the applications of motor driver?
22. Drives are also known as?
23. What is resistor?
24. What is inductor?
25. What is conductor?
26. What is a semi-conductor?
27. What is diode?
28. What is transistor?
29. What is 16x2 LCD?
30. What is LCD screen?
31. How does LCD screen work?
32. What is full form of LCD?
33. What is arduino of LCD?
34. What Liquid Crystal examples?
35. What is the use of Liquid Crystal?
36. What is the resolution of LCD?
37. What is the spatial performance of LCD?
38. What is the Temporal, performance of LCD?
39. What is the Colour performance of LCD?
40. What is the brightness and contrast ratio performance of LCD?
41. What are the advantages of LCD?
42. What are the Dis-advantages of LCD?
43. Which capacitors have the highest values of capacitance?
44. The basic capacitor is made up of?
45. How is a 3.9 k $\Omega$  resistor color-coded?
46. One problem with mechanically variable resistors is noticeable in audio circuits as?
47. A color code of orange, orange, orange is for what ohmic value?
48. A conductor's cross-sectional area in circular mils for  $\frac{1}{2}$  inch is?
49. If a variable resistor's resistance varies in a non-uniform manner as the shaft is moved, it is considered to be?
50. Power is measured in units of?
51. How many basic types of resistors exist?
52. With a complex circuit, a supply source senses?
53. How many joules of energy will a 10 W lamp dissipate in one minute?
51. Which type of test equipment is used to measure resistors?



52. What is Resistance?
53. Electrical equipment is protected against excessive current by?
54. If resistance decreases, then current will:
55. A wire with a smaller cross-sectional area will produce?
56. Define active component.
57. List different types of passive components
58. List different types of active components
59. Define resistor.
60. Define capacitor.
61. Define inductor.
62. Define diode.
63. Diode allows electric current when it is
64. Diode blocks electric current when it is
65. Define transistor.
66. Who invented transistor.
67. Which types of materials are used to construct transistors?
68. Define integrated circuit (IC)
69. Who invented integrated circuit?
70. How many control lines are present in analog to digital converter in addition to reference voltage?
71. Find out the integrating type analog to digital converter?
72. Which type of ADC follow the conversion technique of changing the analog input signal to a linear function of frequency?
73. What will be the cost of battery used?
74. What are conductors?
75. What are good conductors of heat?
76. What is solar energy?
77. What is solar panel?
78. What is solar panel made of?
79. How is solar energy transformed into electrical energy?
80. What is foldable solar panel?
81. What will be the cost of solar panel used?
82. What is micro controller?
83. What is Arduino?
84. How Arduino work?
85. Why Arduino is used?
86. What is LDR?
87. What helps LDR to give signal to Arduino?
88. What is LED?
89. What is temperature controller?
90. How much temperature we can control?
91. How Arduino helps to control temperature?
92. What is GPS?
93. What are GPS devices?
94. How does a GPS works?
95. What is IOT?
96. How IOT helps this project?
97. What is Bluetooth?
98. What are the Bluetooth devices?
99. How is jacket and smart phone connected by Bluetooth?
100. What is an android application?



## Automatic Car Wash

1. What is the size of 8051 micro controller?
2. Why intel8051 is called a 8-bit microcontroller?
3. What is a 16 bit microcontroller?
4. What is 8-bit micro controller
5. What is the use of bit addressable memory in microcontroller 8051?
6. What are the features of 8051?
7. Why is it called a microcontroller?
8. What is microcontroller 8051 definition?
9. What is microcontroller 8051 definition?
10. What is internal size of Rom in 8051?
11. What is stack in 8051?
12. What do you mean by 8 bit microcontroller?
13. What is bit addressable?
14. What is internal size of Rom in 8051?
15. How many 16 bit registers are available in 8051?
16. What is size of RAM and ROM in 8051 microcontroller?
17. What is the use of PIC microcontroller?
18. What is the use of timers in microcontrollers?
19. Why do we use 11.0592 Mhz in 8051?
20. Is the Arduino a microcontroller?
21. How does a microcontroller work?
22. What is microcontroller programming?
23. What would a relay be used for?
24. What a relay is used for?
25. How do you test a relay?
26. What is the difference between a circuit breaker and a relay?
27. Is a transistor the same as a relay?
28. What is a relay switch on a car?
29. What is the difference between a relay and a contactor?
30. What is a reset relay?
31. What is the power supply?
32. What are the different types of power supply?
33. What is the main purpose of the power supply?
34. How does the power supply work?
35. How many bit data bus does 8051 has?
36. The 8-bit address bus allows access to an address range of?
37. The number of data registers is?
38. The I/O port that does not have a dual-purpose role is?
39. To interface external EPROM memory for applications, it is necessary to demultiplex the \_\_\_\_\_ lines of the 8051.
40. A \_\_\_\_\_ is used to name a single line of code.
41. Device pins XTAL1 and XTAL2 for the 8051 are used for connections to -----
42. 8051 has \_\_\_\_\_ bit program counter.
43. When the 8051 is reset and the  $\overline{EA}$  line is HIGH, the program counter points to the first program instruction in the
44. Why a capacitor is used in Project?
45. Why a diode is used in Project.
46. Why a transistor is used in Project.
47. Why a Integrated circuit (IC) is used in Project.
48. Why a transformer is used in Project.
49. Why a regulator IC (7805) is used in Project.
50. Why a relay is used in Project.
51. Define resistor.



52. Define capacitor.
53. Define inductor.
54. Define diode.
55. What are the different types of power supply?
56. What is AC or DC power supply?
57. What is AC or DC power?
58. The device used to convert AC to DC is?
59. Type of rectifier used in Power supply is?
60. Type of Filter used in Power supply?
61. Electrical equipment is protected against excessive current by an
62. Ohms law equation?
63. For  $P = V^2/R$ , a decrease in resistance should produce?
64. 8051 is ---bit controller?
65. Number of timers in 8051?
66. the size of timers in 8051
67. In which mode timer acts as Auto-reload
68. In serial communication no. of bits transmitted per second is called
69. Maximum memory supported by 8051 is
70. N-type extrinsic semiconductor is obtained by adding
71. When Semiconductor materials is heated its resistance
72. The majority carrier in P-type extrinsic semiconductor material is
73. 8051 microcontroller operating voltage
74. The size of ALU in 8051 is
75. ALU stands for?
76. In 8051 which port don't have pull up logic
77. In 8051 Special functions are present in which port
78. Why a relay is used in Project.
79. The I/O ports that are used as address and data for external memory are?
80. The 8051 has how many parallel I/O ports?
81. The total external data memory that can be interfaced to the 8051 is?
82. The statement LCALL READ passes control to the line labelled
83. 8051 has \_\_\_ I/O pins?
84. What is microcontroller 8051 definition?
85. What is the difference between a relay and a contactor?
86. What a relay is used for?
87. Z flag is ----- if an ALU operation results in 0. ?
88. The power requirements of a DRAM in active and stand by modes are about?
89. In a computer the instructions, data, intermediate and final results during processing are held in ALU?
90. Why a relay is used in Project.
91. How many bit data bus does 8051 has?
92. Why a relay is used in Project.
93. Define resistor.
94. What is a diode and what is it used for?
95. How do you test a diode?
96. What is the use of a diode in a circuit?
97. How does the diode work?
98. How can we use diode as a switch?



## Automized Fruit Cutter

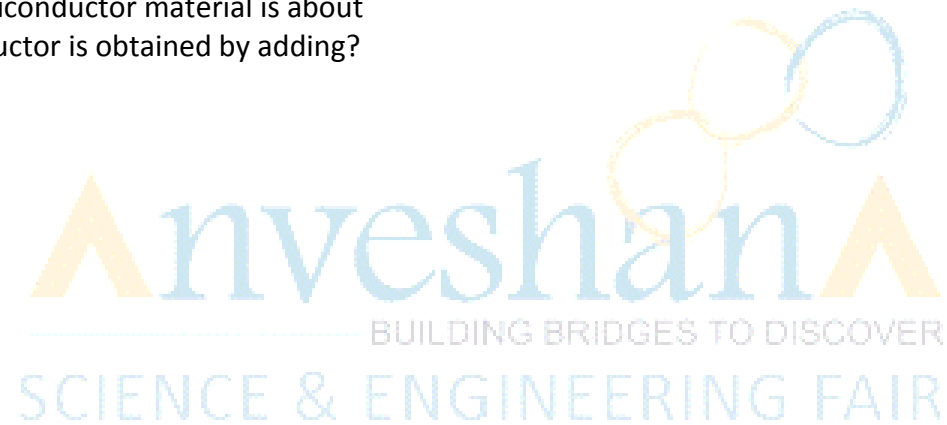
1. Which Capacitor has highest rate of Capacitance?
2. . The basic capacitor is made up of \_\_\_ that separates two conductive plates
3. A circuit whose output voltage is proportional to the rate of change of the input voltage is called a (n) \_\_\_\_\_ .
4. The term \_\_\_\_\_ is derived from a mathematical function in calculus.
5. . A capacitor takes \_\_\_ time constants to charge to 95% of its capacity.
6. The \_\_\_ of a capacitor affects the time it takes to charge and discharge
7. The \_\_\_\_\_ area of the plates, the greater the number of electrons and \_\_\_\_\_ that can be stored
8. A discharged capacitor has \_\_\_\_\_ charges on its plates
9. A \_\_\_ capacitor allows ac signals to pass while blocking dc signals.
10. The rate of charge or discharge of a capacitor is based on \_\_\_ function.
11. . The resistivity of copper is:
12. How do fixed resistors usually fail?
13. With Ohm's law, if voltage increases and resistance stays the same?
14. Which formula shows a direct proportionality between power and voltage?
15. With 1 mA of current, what wattage rating should a 470 ohm resistor have?
16. What resistor type is found in SIPs and DIPs?
17. What are the two major categories for resistors?
18. How many connections does a potentiometer have?
19. . What are the six basic forms of energy?
20. How much energy is stored if  $6.24 \times 10^{18}$  electrons are stored in 4 volts?
21. What is Ohm's Law?
22. . Power is defined as?
23. What is the most commonly used conductor in electronics?
24. With Ohm's law, no change in resistance means that current and voltage will be?
25. A potentiometer has how many leads?
26. What is the ratio of 13 to 47 expressed in percent?
27. What happens to current and resistance if the voltage doubles?
28. One problem with mechanically variable resistors is noticeable in audio circuits as?
29. A colour code of orange, orange, orange is for what ohmic value?
30. A conductor's cross-sectional area in circular mils for  $\frac{1}{2}$  inch is?
31. If a variable resistor's resistance varies in a non-uniform manner as the shaft is moved, it is considered to be?
32. Power is measured in units of?
33. How many basic types of resistors exist?
34. Is there any Difference between power and current?
35. What is Voltage?
36. With a complex circuit, a supply source senses?
37. How many ohms of resistance allows a current of 720  $\mu$  A to flow when 3.6 kV is applied?
38. Which is the most important step utilized when measuring resistors?
39. Components designed to oppose the flow of current are called?
40. How many amps are used by a 100 watt, 120 volt light bulb?



41. What is Amphere?
42. The source is 24 volts and the load resistance is  $100\ \Omega$ . What is the load current?
43. Resistors are identified as to wattage by?
44. What type of resistors has a tolerance rating of 5% or greater?
45. Resistor tolerance is either printed on the component, or is provided by?
46. How many connections does a rheostat have?
47. What are the parts of a rheostat?
48. The load resistance increases. How will the load current change?
49. What is the power dissipated by a  $1.2\ k\ \Omega$  resistor with 12 volts across it?
50. How many joules of energy will a 10 W lamp dissipate in one minute?
51. Which type of test equipment is used to measure resistors?
52. What is Resistance?
53. Electrical equipment is protected against excessive current by?
54. . A wire with a smaller cross-sectional area will produce?
55. What is Heat?
56. A 22-gauge wire will have a diameter in mils of?
57. The word *work* means that?
58. A good fuse will have?
59. What is Fuse?
60. Where do we use fuse?
61. What are the applications of fuse?
62. What property does an incandescent lamp possess?
63. One advantage of a carbon film resistor over a carbon composition resistor is?
64. If a metallic conductor has a positive temperature coefficient of resistance, then?
65. What value of a  $\pm 5\%$   $1.3\ k\ \Omega$  resistor as measured by a digital voltmeter would be considered within tolerance?
66. For  $P = V^2/R$ , a decrease in resistance should produce?
67. After a lamp is turned on, its filament resistance will change to become?
68. Wire wound resistors are usually used in circuits that have?
69. How is power dissipated in a resistor?
70. Resistance in a circuit is?
71. The unit designator for resistance value is the?
72. One ampere of current flowing through one ohm of resistance is equal to?
73. Good insulators?
74. What is Insulator?
75. Where we can use Insulator?
76. What are the applications of Insulator?
77. Special diodes designed to conduct in the reverse direction are called \_\_\_\_\_ diodes?
78. . \_\_\_ occurs when a *pn* junction is first formed?
79. . A pure semiconductor material \_\_\_ very well?
80. The small amount of ac signal present on the output of a filtering network for a dc power supply is known as \_\_\_\_\_?
81. A rectifier is a \_\_\_\_\_ device
82. Which rectifier is used widely?
83. \_\_\_\_\_rectifier has the lowest forward resistance?
84. A single-phase full wave rectifier is a??
85. How many terminal are present in diode device?
86. Which is the conversion of current done by diode?
87. What will happen if doping of an intrinsic semiconductor with pentavalent impurity atom?
88. Silicon has \_\_\_\_\_?
89. . Germanium has \_\_\_\_\_?



90. Energy gap of conductor is?
91. Why is silicon preferred than germanium?
92. Why holes are not created in a metal?
93. Which is the pair of acceptor elements?
94. A Semiconductor has a \_\_\_\_\_
95. The most commonly used semiconductor is?
96. The leakage current in a pn junction is in order of?
97. A pn junction/Diode is a/an \_\_\_\_\_ Component
98. A semiconductor material is formed by
99. The forbidden energy gap between valance band and conduction band in semiconductor material is about
100. N-type extrinsic semiconductor is obtained by adding?



## Hidden Camera Detector

- This project works on the principle of \_\_\_\_\_ which states that the light reflects back when it falls on the optical device.
- The minimum voltage required to drive the led is ranging in between \_\_\_\_ - \_\_\_\_ .
- \_\_\_\_\_ is the property of optical lenses which means that whenever a light is incident on camera lens it will reflect back in the same direction.
- In hidden camera detector we are using Spy scope internals to detect the \_\_\_\_\_.
- The main components of this project are \_\_\_\_\_.
- The other best alternative to do this project is possible with \_\_\_\_\_ sensors.
- Hidden cameras are found not only in trail rooms but also in \_\_\_\_\_ and \_\_\_\_\_.
- In this project 555 timer is working in \_\_\_\_\_ mode.
- In monostable mode there will be only \_\_\_\_\_ stable state.
- The input is given to the \_\_\_\_\_ pin in 555 timers.
- 555 timer has \_\_\_\_\_ terminals.
- Led light is to be incident on the \_\_\_\_\_ lenses.
- For better incidence of light on camera lens \_\_\_\_\_ light is to be used.
- The output is taken across the \_\_\_\_\_ terminal of the 555 timer.
- The \_\_\_\_\_ used in this project is used to nullify the fluctuations arise in the circuit.
- For switching we are using a \_\_\_\_\_ transistor in hidden camera detector.
- The 2N2222 is a common \_\_\_\_\_ bipolar junction transistor.
- The 2N2222 is commonly used for low \_\_\_\_\_ or switching applications.
- The 2N2222 can operate at \_\_\_\_\_ speeds.
- The hidden camera detector operates on sweeping the entire room through red lens in order to trace the location of \_\_\_\_\_.
- The lens through which we observe the reflected light are called \_\_\_\_\_.
- \_\_\_\_\_ lens is used to view the area closer, clear and to test the feasibility and accuracy of the detection signal.
- Number of \_\_\_\_\_ plays vital role in the convergence of light to make it a single strong beam which is further send to locate the position of lens.
- Hidden camera detector works by \_\_\_\_\_ an intense, pulsed beam of light from a series of red LED's.
- The modification consists of adding a \_\_\_\_\_ pulse circuit to the mini spy scopes internal red led.
- The 555 timer will pulse the red led on and off at around \_\_\_\_\_ times a second.
- It is also possible to detect some hidden cameras from the \_\_\_\_\_ signals they accidentally emit.
- The vcc supply is given to the \_\_\_\_\_ terminal of the 555 timer.
- 555 timer works over the range of power varying from \_\_\_\_\_volts to \_\_\_\_\_volts supply voltage.
- The output of a 555 timer can drive a \_\_\_\_\_ due to its high current output.
- It has a temperature stability of \_\_\_\_\_.
- The 555 generally operates in \_\_\_\_\_ modes.
- The modes are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.





34. This hidden camera detector not only detects the camera but also traces the \_\_\_\_\_ of camera.
35. In 555 timer \_\_\_\_\_ terminal is threshold which compares the voltage between the input voltages to the terminal with reference voltage  $2/3$  vcc.
36. The 1<sup>st</sup> terminal in the 555 timer is \_\_\_\_\_.
37. The trigger is responsible for the transition of \_\_\_\_\_ from set to reset.
38. Control voltage determines the \_\_\_\_\_ of the output.
39. \_\_\_\_\_ Pin of the 555 timer toggles the output from high to low when the voltage reaches  $2/3$  of the supply voltage.
40. The functional diagram of a 555 timer consists of \_\_\_\_\_ and \_\_\_\_\_ comparators, SR flip-flop, and a power amplifier.
41. Power amplifier is nothing but an \_\_\_\_\_.
42. A 555 timer in \_\_\_\_\_ mode is used to turn on a led for a specific duration.
43. A pushbutton is used as the \_\_\_\_\_ to output a high pulse when trigger pin is pulsed low.
44. The duration of time is dependent on the R and C values and can be calculated by:  $t =$  \_\_\_\_\_ seconds
45. Hidden cameras are used to capture \_\_\_\_\_ and \_\_\_\_\_.
46. A magnifying glass (called a hand lens in laboratory contexts) is a \_\_\_\_\_ that is used to produce a magnified image of an object.
47. The \_\_\_\_\_ of a magnifying glass depends upon where it is placed between the user's eye and the object being viewed, and the total distance between them.
48. The highest magnifying power is obtained by putting the lens very close to one eye and moving the eye and the lens together to obtain the best \_\_\_\_\_.
49. The \_\_\_\_\_ is the ratio of the sizes of the images formed on the user's retina with and without the lens.
50. The magnifying glass is commonly used as a symbolic representation for the ability to \_\_\_\_\_ or \_\_\_\_\_.
51. The term "laser" originated as an acronym for " \_\_\_\_\_".
52. A \_\_\_\_\_ is an electronic device that emits in order to sense some aspects of the surroundings.
53. An IR sensor can measure the \_\_\_\_\_ of an object as well as detects the motion  
Ir sensors measures only infrared radiation, rather than emitting it that is called as a \_\_\_\_\_
54. Infrared spectrum, all the objects radiate some form of \_\_\_\_\_.
55. IR photodiode is sensitive to \_\_\_\_\_
56. \_\_\_\_\_ IR transmitter and receiver pair is the main component of IR sensor
57. \_\_\_\_\_ of LM 339 is used as comparator circuit.
58. Output of the comparator goes \_\_\_\_\_, when the LED does not glow.
59. \_\_\_\_\_ is used for industrial temperature control.
60. \_\_\_\_\_ is used for automatic door opening system
61. \_\_\_\_\_ are used for distance measurement.
62. \_\_\_\_\_ are used to measure the temperature depend upon the temperature and the material of the object
63. IR sensors are used in \_\_\_\_\_ which use absorption characteristics of gases in the IR region.
64. Methods of gas analysers are \_\_\_\_\_ and \_\_\_\_\_.
65. \_\_\_\_\_ is the major applications of IR waves.
66. An electronic detector is cooled to low temperatures using \_\_\_\_\_



67. An Infrared light emitting diode ranging from \_\_\_\_\_ wavelength.
68. IR LEDs are usually made of \_\_\_\_\_.
69. An IR LED is a type of \_\_\_\_\_.
70. \_\_\_\_\_ employ reflective indirect incidence principle.
71. \_\_\_\_\_ makes the signal from IR LED stand out above the noise.
72. The emitter is a \_\_\_\_\_ and the detector is an \_\_\_\_\_.
73. \_\_\_\_\_ are capable of measuring the heat being emitted by an object and detecting motion.
74. IR sensors are used in \_\_\_\_\_.
75. Frequency range of IR sensors are \_\_\_\_\_ to \_\_\_\_\_.
76. \_\_\_\_\_ is the abbreviation of laser.
77. A laser is a device that emits light through a process of \_\_\_\_\_.
78. The first laser was built by \_\_\_\_\_.
79. \_\_\_\_\_ allows a laser to be focused to a tight spot.
80. Where lasers are used?
81. Laser is a device that emits a beam of \_\_\_\_\_.
82. Lasers emit nearly \_\_\_\_\_ light with a narrow wavelength spectrum.
83. laser is a device that creates a \_\_\_\_\_ and \_\_\_\_\_ of coherent light.
84. Temporal coherence can be used to produce pulses of light as short as a \_\_\_\_\_.
85. Lasers are characterized according to their \_\_\_\_\_ in a vacuum
86. laser uses feedback from an \_\_\_\_\_
87. For the gain medium to amplify light, it needs to be supplied with energy in a process called \_\_\_\_\_.
88. in laser ,the energy is typically supplied as an \_\_\_\_\_.
89. \_\_\_\_\_ is the process by which an incoming photon of a specific frequency can interact with an excited atomic electron causing it to drop to a lower energy level.
90. \_\_\_\_\_ is the process in which a quantum mechanical system transitions from an excited energy state to a lower energy state.
91. \_\_\_\_\_ Inversion occurs while a system exists in a state in which more members of the system are in higher, excited states than in lower, unexcited energy states.
92. Lasers depend on a beam whose output power is constant over time is known as \_\_\_\_\_.
93. The features affecting the beam properties of laser include \_\_\_\_\_ and \_\_\_\_\_.
94. The input is given to the \_\_\_\_\_ pin in 555 timer.
95. \_\_\_\_\_ are capable of measuring the heat being emitted by an object and detecting motion.
96. IR sensors are used in \_\_\_\_\_.
97. The 555 generally operates in \_\_\_\_\_ modes.
98. Infrared spectrum, all the objects radiate some form of \_\_\_\_\_.
99. IR photodiode is sensitive to \_\_\_\_\_.
100. \_\_\_\_\_ IR transmitter and receiver pair is the main component of IR sensor.



## Military Spy Robotic Dog

1. Current is measured in series or parallel?
2. Voltage is measured in series or parallel?
3. Device for measuring current?
4. Device for measuring voltage?
5. Device for measuring both voltage and current?
6. Unit of current?
7. Unit of voltage?
8. Is current added in series?
9. Is voltage added in series?
10. Is voltage same in series or parallel?
11. Give the relationship between current and voltage.
12. What is the net resistance when resistors are connected in series?
13. Define Ohms law.
14. What is power?
15. What are the units of power?
16. What happens to power when either voltage or current is increased?
17. Device for measuring power?
18. What is a conductor?
19. What is an insulator?
20. Give examples of conducting and insulating materials?
21. What constitutes current?
22. What is the direction of current with respect to the direction of electrons?
23. What is the unit of energy?
24. What is resistance?
25. What is the unit of resistance?
26. What is LED?
27. What is a sensor?
28. What is the difference between analog and digital?
29. Are the sensors you are using analog or digital?
30. What are semiconductors?
31. What is voltage rule?
32. What is current rule?
33. What is a multimeter?
34. How to convert AC to DC?
35. What is IOT?
36. Give some common used cloud services?
37. Give a daily application of IOT?
38. What is a processor?
39. When will the voltage influence current?
40. Which part of atom has no electrical charge?
41. What is ESP8266?
42. What is the significance of BLYNK App in your project?
43. What is Think speak?
44. What is Accelerometer and Gyroscope sensors used for? Give their application in our daily life.
45. What do you mean by GPS?
46. What is Robotic arm?
47. What do you mean by degrees of freedom? How many degrees of freedom are there in your robotic arm?
48. What type of battery are you using in your robot? Give its specifications.
49. Name few Electronics, Electrical and mechanical components used in your robot?
50. What is the use of MPU6050 in your project?
51. Why TIG Welding is used in your project?
52. Which end effector is used?
53. What is the Purpose of robotic arm?



54. What are a) Solid works and b) ANSYS?
55. What are the three Newton's laws of Motion?
56. What is force?
57. What is friction?
58. What is torque?
59. What is the difference between speed and velocity?
60. What is displacement?
61. What are the units used for measuring 1) Pressure and 2) Velocity?
62. What is sliding and rolling friction?
63. Which has more friction, sliding or rolling? Justify your answer.
64. What is Archimedes principle?
65. What is gravity?
66. What is gravitational pull of earth?
67. What is an Omni wheel?
68. What are different types of welding?
69. What are the different types of joint?
70. What are the advantages of legs over wheel?
71. What is pneumatic s?
72. What is piston?
73. What are the different types of motors? What is a DC Motor?
74. What is encoder motor?
75. What is end effector?
76. Why aluminium is used?
77. What are the different types of pressure gauges?
78. What is a Roll cage?
79. What is the capacity of your storage tank?
80. What are the different types of valves used in your robot?
81. What is the difference between double solenoid and single solenoid?
82. What are the advantages of piston over motors?
83. What do you mean by fabrication? Explain its different types.
84. What are the dimensions and weight of your robot?
85. How many pistons are used in your pneumatic quadruped robot?
86. What are the specifications of pistons used in your robot?
87. What processor are you using?
88. Explain the block diagram of your model.
89. What is the problem statement in your project?
90. What is your proposed solution?
91. What are the input devices your project?
92. Why IOT?
93. List the sensors used in your model.
94. How are you converting analog sensing devices into digital in your model?
95. What is the cloud platform used?
96. How is it coded?
97. How easily can your model be adapted into our daily lives?
98. What was your motivation in selecting this project?
99. How will you protect all the components from short circuit?
100. How do you protect various components from getting rundown by the environment?



## Voice Controlled Prosthetic Arm for Physically Disabled

1. What is human prosthesis?
2. What are the different types of prosthetic limbs?
3. what parts does a prosthetic limb contain in general?
4. what is a prosthetic arm?
5. How can one operate it on his/her own?
6. what material can a prosthetic arm be made of?
7. explain the working in brief about how the interaction between the user and arm takes place?
8. what is the initial cost of prosthetic arms?
9. Mention few limitations of human prosthesis?
10. Why is human prosthesis less in India?
11. What are the steps needed by one to avoid being a human prosthesis consumer?
12. What is a voice controlled prosthetic arm?
13. How can the voice be given to the arm?
14. How immune is the mic to noise?
15. What is a mic?
16. What is the efficiency using noise?
17. Why is only mic used in this?
18. What is this project made of?
19. What is 3d printing?
20. Why is 3d printing preferred?
21. Why is it costly?
22. What is the print material?
23. How does a 3DP work what are the components in a 3D printer?
24. What are operation temperatures of 3DP?
25. What are fish strings?
26. Purpose of fish strings in our project?
27. What is a motor?
28. What are different types of motor?
29. Why are we using servo motors in our project and not any dc motor?
30. How are fish strings attached how is it linked to servomotors?
31. How servo motor works?
32. State the specifications of the servo motor?
33. How is the locomotion carried out?
34. What are degrees of freedom?
35. How many degrees of freedom does a human hand have?
36. What is the degree of freedom of our project?
37. How much weight the hand can lift?
38. What is the power source of the hand?
39. What is a LiPo battery?
40. What are the specifications of the battery?
41. Which type of micro controller are you using?
42. What is the programming that is being used?
43. What are the specifications of the micro controller?
44. How is the micro controller giving signals to the servo motor?
45. (PWM)To which pins of the board are the servo motors connected?
46. Which speech processing board are you using?
47. How is the board connected to your arduino?
48. What is the intermediate processing software that is being used?
49. How do you train your voice shield?
50. What are the extreme angles of each finger?
51. What kinds of PCB are used in your circuitry?
52. What are the dimensions of your circuit board?



53. Where is the PCB being placed in your arm?
54. How many actions is the hand capable of imitating?
55. How many voices can the VR shield record?
56. What are the other features of the VR shield?
57. On what voltage is the whole system working?
58. What kind of voltage regulator are you using to step down the voltage?
59. What is the length of the mic?
60. How is the whole circuit resting in the arm?
61. How is the arm being packed and closed with every component and every circuit being stiff in their positions?
62. How responsive and attentive is the speech board (in terms of distance, pitch etc.)?
63. Where will be the ultimate end product resting?
64. How will you fix this arm to the harness?
65. What is the battery backup of the final product?
66. How much time will the arm take to charge to its maximum value?
67. What are the major and other means of charging the battery?
68. Is the end product safe enough for a physically impaired man?
69. How is the circuit being protected from any sort short circuits?
70. What are the safety precautions to be taken before wearing the harness?
71. How often should the circuit and other components be checked and replaced (if necessary)?
72. What if the prosthesis doesn't fit right?
73. How can the arm be extended in terms of technology?
74. How different is the arm orientation for left and right limbs?
75. What is the tensile strength of the fish string?
76. How to train the voice controller module?
77. Does the voice module recognize different voices simultaneously?
78. What are the alternatives if voice control?
79. What do you mean by voice training?
80. What is the duration of each command?
81. What is the effective response time of each command?
82. How close should the microphone be placed to the speaker?
83. Can the arm be dismantled with ease or does it require any complex tools?
84. What is the infill specification of the arm?
85. Why is ABS preferred over other materials?
86. Which printer was used in its making?
87. What is the approximate print time of the entire arm?
88. Why are 3d printed screws used over general metal screws?
89. Is the current load on the entire fingers servo's same?
90. What is the role of circular mount on the servo motor?
91. What is slack length of each string to achieve minimum motion translation?
92. How is the arduino different from other controller boards?
93. Why is grease applied at the wrist motor?
94. Why is the torque of the wrist motor greater than the rest?
95. What is torque?
96. What is the weight of the arm?
97. How can the grip of the palm be improved?
98. Why is lipo used over other power sources?
99. How is the pressure applied on the object determined?
100. What is the optimum pressure for smooth grip?



## Smart Health Chair

1. What is meant by health?
2. Did you ever visit a hospital in your village?
3. What did you observe in the hospital?
4. How far do the villagers travel to access healthcare?
5. How did you get the idea of Health Chair?
6. What can it do?
7. What are Vital Signs?
8. What is Blood Pressure?
9. How is BP measured?
10. What is the ideal Blood Pressure of a healthy person?
11. What is Sistol?
12. What is Diastol?
13. What are the methods to measure BP?
14. What is the range for low BP?
15. What is hypertension? What are the causes of it?
16. When do you call it Hypertension?
17. What is heart beat?
18. What is pulse rate?
19. How do you differentiate these two parameters?
20. How can heart rate be measured?
21. What is the heart rate of a normal person?
22. What are the units of heart rate?
23. What are the units of blood pressure?
24. How is blood pumped to the heart?
25. Why is blood red in colour?
26. What is haemoglobin?
27. What is an ideal haemoglobin count for a female and a male?
28. What are red blood cells?
29. What are white blood cells?
30. What are platelets?
31. How many red blood cells are present in human body?
32. How many white blood cells are present in human body?
33. How many platelets are present in human body?
34. What is respiration?
35. What do you mean by inhalation and exhalation?
36. What is the rate of respiration of a normal person?
37. What is the Pulse Rate of a normal person?
38. What are the units of pulse rate?
39. What is spo2?
40. Which device is used to measure it?
41. What is meant by standalone?
42. What is a processor?
43. What is a controller?
44. What is the difference between a processor and a controller?
45. What is the functionality of a processor?
46. What is voltage?
47. What do you mean by the term power?
48. What is current?
49. How a voltage can be measured?
50. What are the units of voltage?
51. What is a sensor?
52. What are the different microcontrollers available?
53. Famous micro-controllers used frequently?
54. What is Arduino?
55. What is Raspberry Pi?
56. Why can't we use Arduino in our project?
57. Why is a Raspberry Pi used?



58. How many input and output pins are available on the Raspberry Pi?
59. What are the different peripherals that are available on the Raspberry Pi board?
60. What is an ADC?
61. In our project, we used an ADC. What is the need?
62. What are Jumpers?
63. What is breadboard?
64. How is it used?
65. Explain the models of Raspberry Pi?
66. What are the modules present in a raspberry pi?
67. What are the sensors used in our project?
68. What is the software used for raspberry pi?
69. What do you mean by programming?
70. What are the different programming languages?
71. What is the programming language used in our project?
72. What is a code?
73. What are the basic languages used for coding?
74. What is a circuit?
75. What is a resistor?
76. What are the units of resistance?
77. What is temperature?
78. What is the normal temperature of a human body?
79. What are the units of temperature?
80. Which device is used to measure the temperature?
81. What is the Technology used in the project?
82. How is the data sent to the doctor?
83. How can a doctor receive the data from Health Chair?
84. What is a cloud?
85. What is a server?
86. What do you mean by IOT?
87. What is the IOT platform used in our project?
88. What is an ECG?
89. Is ECG different from EKG?
90. What is the use of measuring ECG?
91. In our project, which model of raspberry pi is used? Why?
92. What is the name of the temperature sensor used in our project?
93. What is the motto of our project?
94. How is our project different from others?
95. What are the existing systems?
96. What are the different sensors used in our project?
97. What are the steps involved in this project?
98. Which language is used for developing the software?
99. Is the device affordable to everyone?
100. What are the specifications of raspberry pi?





## Finger Print Based Anti-Theft Vehicle System

1. Where did you learn this project?
2. What did you understand about this project?
3. What is the principle based on which this project is constructed?
4. Which school/college are you from?
5. Which standard/course are you studying?
6. How did you feel when your team was shortlisted for Anveshana?
7. How are your mentors / project guide?
8. Would you like to be an engineer?
9. How is your experience in the school/college?
10. Do you know about Anveshana earlier?
11. Tell me something about Anveshana.
12. Why school children are involved in this competition?
13. Did you build any other project other than this?
14. Did you take this project to any other competition?
15. Did you win any prizes for this project at other place?
16. What is the necessity for this project?
17. Who will use this project?
18. Where did you find difficulty while learning this project?
19. How did you solve the difficulties/bottlenecks?
20. What will be the industrial impact by this project?
21. What do you mean by PCB?
22. How you can prepare the PCB board?
23. What is voltage regulator?
24. What are the different voltages coming out from the board?
25. How the components stick to that board?
26. What is IC? Acronym of IC I \_\_\_\_\_ C \_\_\_\_\_
27. How IC is made?
28. What will be there inside the IC chip?
29. What is Arduino?
30. What do you mean by open-source hardware?
31. How can I get an Arduino board?
32. Which are the official Arduino boards?
33. Identify Arduino Logo & Trademarks.
34. I want to design my own tailor-made Arduino board; what should I do?
35. What should I call my boards?
36. Can I build a commercial product based on Arduino?
37. Is Arduino Software program, called a sketch?
38. How can I run the Arduino IDE under Linux?
39. Can I program the Arduino board in C?
40. Can I use a different IDE to program the Arduino board?
41. Can I use an Arduino board without the Arduino software?
42. Can I program an Arduino board without the Arduino IDE?
43. Can I use the Arduino software with other AVR boards?
44. Where is the troubleshooting and help for Arduino coming from?
45. What is the need for power supply?
46. Which supply is given to this project AC or DC?
47. How much is the required voltage?
48. How to convert 230V to 9V?
49. What is ground in this board and which pin it is?
50. What is RAM?
51. What is ROM?
52. Difference between Ram and Rom?
53. What is the purpose of EPROM?



54. What is the name of the board in which components placed?
55. What is a microcontroller?
56. Which microcontroller you have used in this Arduino project?
57. How many pins does your microcontroller have?
58. How do you write the program?
59. How you transfer the finished program into motherboard?
60. Which electronic elements you have used in this project?
61. What is the difference between micro processor & micro controller?
62. What is Biometrics?
63. What are physiological characteristics of people?
64. How come 735 crores of people - all have different IRIS/ fingerprints?
65. What are behavioural characteristics?
66. What are different types of Biometrics?
67. Which is the most accurate type of Biometrics?
68. What is difference between Identification and Verification of fingerprint?
69. What is a sensor?
70. What are the different types of fingerprint sensors/readers?
71. What are Capacitive Sensors?
72. What are Optical Sensors?
73. What are Thermal Sensors?
74. What are Pressure Sensors?
75. What are RF Sensors?
76. What are Ultrasonic Sensors?
77. What is a Static Fingerprint Reader/Sensor?
78. What is a Swipe Fingerprint Reader/Sensor?
79. What are the Pros and Cons of a Swipe Fingerprint Reader/Sensor?
80. Mention the acronym of LED – Li \_\_\_\_\_ E \_\_\_\_\_ D \_\_\_\_\_
81. What is the main propose of LED?
82. When the LED will turn on?
83. What are the pins having power input in the board?
84. What are the pins connected to finger print sensor?
85. What are the pins connected to board output to LED?
86. What is an Internal Combustion SI Engine?
87. What is Spark plug in engine?
88. How Spark is created in the circuit?
89. How the ignition system of IC engine works?
90. What is the purpose of the ignition switch in a vehicle?
91. What is mean by relay?
92. What is a reed switch?
93. Why you did not use reed switch in this project
94. Where the output from LED, to relay will be connected to?
95. How this project envisages double protection against theft?
96. Suppose finger print out voltage is not given to the relay will the ignition work?
97. Advantages and Disadvantages of the project?
98. Any 5 applications of the project?
99. What is the cost of this project?
100. Offer your suggestions to further reduce the cost of the project.



## Sensing Visitor outside the Door & Sending Notification to the Owner-Home Automation

1. What is an IOT?
2. What are the difference between software and hardware?
3. What is Automation?
4. What is the main aim of a project?
5. What are the components used?
6. What is the input?
7. What is the output?
8. What is need of Wi-Fi module?
9. Discuss about arduino Uno board.
10. What is importance of Arduino board?
11. What an arduino board consists?
12. Do the arduino board need power?
13. How the Arduino Uno can be powered?
14. How many volts of limited power supply we use?
15. Can we use more than 20volts of power supply?
16. Why don't we use more than 20 volts?
17. What is the recommended voltage used for arduino models?
18. What is aim of 5v and 3.3v pins?
19. Why we use 5v and 3.3v pins?
20. from where the pins of analog read the signal?
21. What is the use of Analog pins?
22. What is the function of Digital pins?
23. What the acronym of PWM?
24. What is the Function of PWM?
25. What an AREF stands for?
26. What is the function of AREF?
27. What are TX and RX ?
28. What is IC?
29. What is the main function of voltage regulator?
30. What is the use of Power Led indicator?
31. How does the Reset button works?
32. Why a relay is used in Project.
33. What is the project?
34. What are the basic components required for a Project.
34. What are the various hardware boards?
35. Discuss about various sensors.
36. List the latest technology modules.
37. What is need of Wi-Fi module?
38. What type of Bluetooth module we use?
39. What is 4-channel relay board?
40. What is OS?
41. What is the full form of RTOS?
42. Define RTOS?
43. What are the examples of RTOS?
44. Is windows are a RTOS?
45. What is Raspberry Pi?
46. Can we implement our Project using Raspberry pi?
47. Difference between Raspberry pi and Arduino?
48. What is the microcontroller used in Raspberry pi?
49. is Raspberry pi microcontroller or microprocessor?
50. Which language is used in Raspberry pi
51. What language is used to program Arduino?
52. How does Arduino board work?
53. Can u program an Arduino with Java?
54. What Do You Want in Home Automation?
55. Where Should You Begin?
56. Do You Have to Build a New House to Enjoy Home Automation?



57. Will You Need to Replace Your Current Entertainment Equipment?
58. Will Home Automation Technology Be Difficult to Understand?
59. Will Home Automation Be More Costly to Use?
60. Is Home Automation Compatible With an Existing Security System?
61. Can You Access and Monitor Home Automation Features Remotely?
62. Will Home Automation Be a Major Lifestyle Adjustment?
63. Will Current Home Automation Systems Be Compatible With Future Technology?
64. Is Wi-Fi should be reliable?
65. What Is Home Automation Good For?
66. What are the elements of a Home automation system?
67. How reliable is a Home automation system?
68. What are the best home automation companies available today?
69. What are the top3 devices in home which Benefit from being integrated?
70. What wiring do I need for Home automation system?
71. What is available in high end security market?
72. Why would I need wired touch panel rather than ipad?
73. What is Light controlling system?
74. Do you recommend wireless lighting system?
75. When is the best time to install home automation?
76. Are Smart homes affordable?
77. Does Home automation increase Home value?
78. What are the different operating standards for Home automation System?
79. What are the benefits of Home automation?
80. What wiring do I need for Home automation?
81. Which devices are most commonly controlled in smart home?
82. I am building a new home, when should I call for home automation services?
83. How can I save energy with Home automation?
84. When I use Home automation, is my information secure?
85. Does smart home technology work for businesses?
86. Do I have to make my whole house smart?
87. Can I upgrade an older or existing home with smart home technology?
88. How long does it take to install smart home technology?
89. Is home automation worth it?
90. What home automation systems are available today?
91. How much will my long-term costs be?
92. Who Installs Building Automation?
93. What is a Jumper Wire?
94. What kind of jumper wires should I get for electronics and a breadboard?
95. What is the difference between male and female jumper wires?
96. How do you make a jumper wire on your own?
97. What is a male jumper wire?
98. What is a jumper in electrical terms?
99. What is Breadboard?
100. How do you use a breadboard?



## Voice Control Robot using NI

1. What is NI?
2. What is the main purpose of this project?
3. How do we give the commands to the robot?
4. What is the mediator between the voice and the robot car?
5. What is the future of modern society in terms of technical field?
6. How the voice is controlling the robot?
7. What are the components used in the robots?
8. How does this project help the people to realize the situation of technology?
9. How to bring the change in modern society particularly in villages?
10. What is the thing that controls the robot?
11. How can we make others to think best about this project?
12. Scope of this project in future and also at present?
13. How do we develop the technology in various fields?
14. How can we create awareness among the people about this project?
15. What could be the required components in this project?
16. What are the commands we are going to give to robot?
17. What is this National Instruments?
18. What is the purpose that we are indulging this software to create our project?
19. How can we modify the modern vehicle technology?
20. How the object tracking can be a part of this project?
21. Why this anveshana has been conducted?
22. How can we help the students to think about this project?
23. What is the agatstya international foundation?
24. To what extent this project can bring the change in technology?
25. What will be taught to society by school students and engineers?
26. What is the need to select the students?
27. What is the message given by project to the society?
28. Can we select any other devices rather than a robot?
29. Why only 2 students to create awareness among their mates and people?
30. Why only students of higher education and why not intermediate?
31. Can we give the different commands?
32. Why do we need to control the robot by only voice?
33. Why we have used only NI software?
34. Why agastya is conducting this event?
35. What type of components are best useful for this project?
36. What is the cost of this project?
37. How u write the program?
38. How you save the program in it?
39. Full form of NI?
40. What does commands do?
41. Are we people going to get benefited through this project?
42. Which college are you from?
43. Where is your college?
44. Which branch are u from?
45. What do u mean by electronics?
46. Diff b/w electronics and electrical?
47. How many labs do u have?
48. What do u do in labs?
49. What are the applications of this NI software?
50. Which kind of people is going to learn more about this project?
51. What is an arduino?
52. What is a raspberry pi?



53. What is LINUX?
54. What is a chase?
55. How do we give the connections?
56. How do we interface arduino with Lab view?
57. Why did you choose it?
58. What is agastya foundation?
59. Why did they establish it?
60. Can we control multiple bots at the same time?
61. Can we create awareness in people?
62. What is the reason behind making the project?
63. How does this project is going to show its impact on modern technical society?
64. What could be the application of this project in future?
65. How the certificates of this project help us in future?
66. What is the reason behind making this project?
67. What could be the budget of this project?
68. What could be the required components for making this project?
69. What is speech recognition?
70. What are the applications of speech recognition?
71. What kind of commands do we give to recognise the voice?
72. How this science fair is going to help the students to learn?
73. What are the main parts of this project?
74. How much supply does it need?
75. How to connect the pins of arduino?
76. What is an encoder?
77. What is the main theme of this project?
78. Why you are using arduino board why not other board?
79. Does it easy to operate or not?
80. What is the installation cost?
81. How can we dump program in arduino?
82. Can we be able to rectify the problem that occurs in this project?
83. What is the meaning of this project name?
84. Educational details of participants?
85. Why you are interested to do this project?
86. Have you exhibit this project before else?
87. How are you people in anveshana?
88. How is anveshana useful to you?
89. Why government school children are involved in this competition?
90. What are the advantages of our project?
91. What are the dis-advantages of our project?
92. What did u understand about this project?
93. Which school are you from?
94. Which standard are you studying?
95. Where did u feel difficulty while learning?
96. Tell me something about anveshana?
97. What are the roles of team members?
98. How did you solve the difficulties?
99. What do students learn through such competition?
100. How well is India receiving the modern technology?



## Hand Gestures Recognition System

1. Have you come across anybody who has problem in speaking?
2. How do they communicate?
3. What are speech disorders?
4. Is everybody who cannot hear speech impaired?
5. What is speech and hearing impairment?
6. How does a speech and hearing impaired communicate?
7. Do you know what a sign language is?
8. Is sign language different in different countries?
9. How do speech and hearing impaired kids go to school?
10. How do they talk to their teacher?
11. What is universal sign language?
12. What is speed?
13. What are the parameters that can affect speed?
14. Imagine you are riding a bike and have to travel 1 km, how will it affect the time if you travel at a lower speed and if you travel at a higher speed?
15. What is meant by velocity?
16. How is velocity different from speed?
17. If a car is travelling at 40 km/hr at a constant speed even though it has changed its direction firstly from north to north east and then to south, what is the speed and what is velocity in this case?
18. What is a scalar quantity and a vector quantity?
19. If you are sitting inside a bus and it takes a sharp turn towards your right, what will you experience?
20. What can be the reason of your above experience?
21. What is the English meaning of “Accelerate”? Where do you see accelerators?
22. What is acceleration then?
23. What is the difference between velocity and acceleration?
24. What are the 5 different sense organs in your body?
25. What is a sensor?
26. Can nose be called a sensor? Why?
27. Can humans design artificial sensors? Name some.
28. What is an accelerometer?
29. Is it a sensor?
30. What is a Cartesian coordinate system?
31. What types of accelerometers are used in this project?
32. In what range of voltages do accelerometers work?
33. What is meant by 3 dimensional axes?
34. How many axes did you use in the project?
35. What are the components used in the project?
36. What is charge?
37. What is current?
38. Mention different sources of current.
39. What is voltage?
40. What is a voltage regulator?
41. What is ground?
42. What is meant by analog?
43. What is digital?
44. What is Wi-Fi?
45. What is meant by client?
46. What is meant by server?
47. What is an IC?
48. What is a microcontroller?
49. What is meant by reset?
50. What is the meaning of software?
51. What is a code?



52. Why is code important for digital components?
53. What is the difference between a controller and a processor?
54. What is Arduino IDE?
55. How did you build the mobile application?
56. What is the purpose of a mobile application?
57. What is “Android”?
58. How does the controller communicate with the mobile?
59. How does the mobile recognize the hand gestures?
60. Is the app user friendly?
61. Will it work on all mobiles?
62. What is the form of output?
63. What do you mean by mapping?
64. How do you classify each movement of finger?
65. Will the app contain universal signs?
66. Can you change the voice in the app?
67. How many signs could it recognize?
68. How long will it take to recognize a sign?
69. What is a battery?
70. What are the problems faced in the project?
71. Is the innovation new?
72. What are the existing solutions?
73. What differs existing solutions to your project?
74. Is the design compact?
75. To whom is this project useful?
76. Is the project affordable by many?
77. How is the entire system powered?
78. Is it a one-time investment?
79. What is the future scope of the project?
80. What is the cost of the project?
81. What are the disadvantages of this project?
82. Where did you get the idea from?
83. Is this project as simple as it looks?
84. What is the cost for prototype making?
85. What is the real cost of this project?
86. How the speeches can impair benefit from this?
87. Is the project too heavy on hand?
88. What are the disadvantages of this project?
89. What’s the duration for working on the hardware?
90. What’s the duration for working on the software?
91. Is the glove durable?
92. Can this be used anywhere?
93. Does the size of the hand matter while doing gestures?
94. How did you choose the position of the accelerometers on the glove?
95. Why use digital accelerometers?
96. Difference between analog and digital accelerometers?
97. What if the speech impaired doesn’t know sign language?
98. Why can’t we use text to speech directly?
99. Can a similar device be made with much less cost? How?
100. What are the expectations of the organizers and the jury at Anveshana?





## Voice Pen Plotter

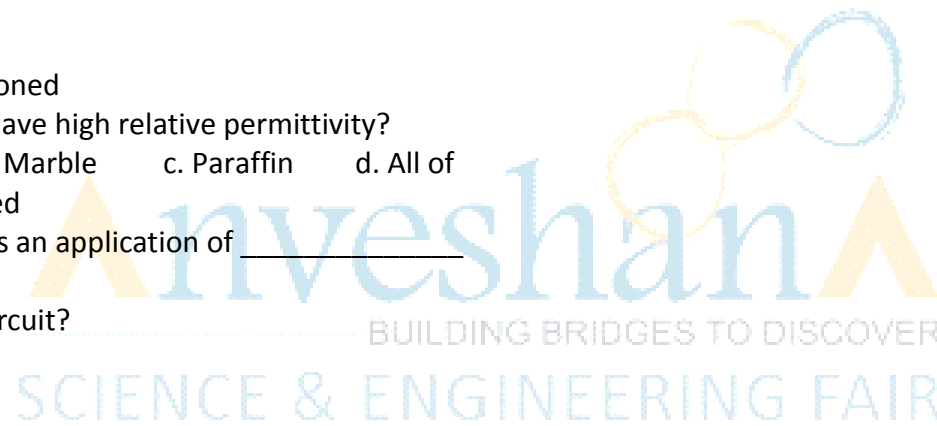
1. What is the dominant modality for communication between humans?
2. What kind of signal is used in speech recognition?
3. What is viewed as problem of probabilistic inference?
4. Which specifies the prior probability of each utterance?
5. What Is Lab VIEW?
6. What is RIO?
7. How can I connect sensors to NI myRIO?
8. What is an FPGA?
9. What programming languages can I use with NI myRIO?
10. Which model gives the probability of each word following each other word?
11. What is the study of how the language sounds?
12. What are periodic changes in pressure that propagate through the air?
13. What is called as the properties of the signal that extend over interval?
14. What are two panels used in Lab VIEW programming?
15. What is shift register? How it is implemented in Lab VIEW?
16. How mixed data types are combined and passed from one file or place to the other in Lab VIEW?
17. How do I make use of external libraries in Lab VIEW?
18. Is Lab VIEW a compiled programming language?
19. Does Lab VIEW VIs work with source code control providers?
20. How do I track the history of revisions to my Lab VIEW application?
21. Can I merge Lab VIEW VIs?
22. How can I determine what modifications were made to a VI?
23. How do I validate a Lab VIEW application?
24. Can I map requirements to Lab VIEW code?
25. How do I document graphical code?
26. How do I perform static code analysis on Lab VIEW VIs?
27. What devices are supported for Android Instant Apps?
28. What are the different types of Android APIs and functionality that instant apps can use?
29. Can users choose to install the app permanently?
30. How do permissions work in Android Instant Apps?
31. Who should use Lab VIEW object-oriented programming?
32. Who Invented Lab VIEW?
33. Who should not use Lab VIEW object-oriented programming?
34. Lab VIEW is a graphical programming language. True or false?
35. Applications developed in Lab VIEW are called \_\_\_\_\_
36. What is a VI
37. What is Front Panel?
38. What are controls and indicators?
39. What is Block diagram?
40. What do Code elements in Lab VIEW include?
41. What is a control Palette?
42. What is a Functions Palette?
43. Type of Filter used in Power supply
44. Purpose of Resister in front of LED IS
45. Motor speed is controlled by using
46. PWM stands for
47. Type of motors used as robot wheels
48. Type of motors used as robot hand
49. To follow line no of IR sensors required
50. IC stands for
51. unit of resistance



52. Regulator IC used to get 5V is
53. Regulator IC used to get 12V is
54. Units of capacitance
55. What is resistor?
56. What is inductor?
57. What is conductor?
58. What is a semi-conductor?
59. What is diode?
60. What is transistor?
61. List different types of passive components
62. List different types of active components
63. Define resistor.
64. Define capacitor.
65. Define inductor.
66. Define diode.
67. Diode allows electric current when it is \_\_\_\_\_?
68. Diode blocks electric current when it is \_\_\_\_\_?
69. Define transistor.
70. Who invented transistor.
71. Which types of materials are used to construct transistors?
72. Define integrated circuit (IC)
73. Who invented integrated circuit?
74. A variable reluctance stepper motor is constructed of \_\_\_\_\_ material with \_\_\_\_\_ salient poles?
75. Drives are also known as \_\_\_\_\_?
76. In a three-stack 12/8-pole VR motor, the rotor pole pitch is
77. A stepper motor having a resolution of 300 steps/rev and running at 2400 rpm has a pulse rate of- pps.
78. If a hybrid stepper motor has a rotor pitch of  $36^\circ$  and a step angle of  $9^\circ$ , the number of its phases must be
79. The rotor of a stepper motor has no
80. A stepping motor is a \_\_\_\_\_ device.
81. The rotational speed of a given stepper motor is determined solely by the
82. Which of the phase switching sequence represents half-step operation of a VR stepper motor ?
83. A stepper motor may be considered as a \_\_\_\_\_ converter.
84. What is the step angle of a permanent-magnet stepper motor having 8 stator poles and 4 rotor poles?
85. What is a motor driver?
86. How many pin motor driver is L293D?
87. What are PWM Signals?
88. What are pwm waves?
89. Capacitive transducers can be used by \_\_\_\_\_
90. Capacitive transducers cannot be used as strain gauges.
- a) True
- b) False
91. Which of the following is correct for capacitive transducer?
- a) Capacitive strain gauges
- b) Capacitive tachometers
- c) Capacitive pressure transducer
- d) All of the mentioned
92. For a material capacitance increases with \_\_\_\_\_
93. Which of the following is correct for moisture transducers?
- a) Dielectric constant of pure water greater than other materials
- b) Dielectric constant of pure water much less than other materials
- c) Dielectric constant of pure water and of other materials are equal



- d) None of the mentioned
94. Which of the following device is used for measuring relative humidity?
- a) Capacitive pressure transducer
  - b) Hygrometer
  - c) Capacitive strain transducer
  - d) Capacitive moisture transducer
95. Which of the following quantities cannot be measured by capacitive transducers?
- a) Displacement
  - b) Speed
  - c) Moisture
  - d) None of the mentioned
96. Which of the following have high relative permittivity?
- a) Bakelite
  - b) Marble
  - c) Paraffin
  - d. All of the mentioned
97. Capacitive microphone is an application of \_\_\_\_\_
98. What is Oscillator?
99. What is an Integrated Circuit?
100. What is crosstalk?



## Charge As-You-Talk

1. What is sound?
2. What is energy?
3. What is a transducer?
4. How to convert one form of energy to another?
5. How Sound waves are created?
6. How do Sound waves propagate?
7. What is an instrument?
8. Classify transducers?
9. Give an example of transducer?
10. What is primary transducer?
11. What is secondary transducer?
12. What is passive transducer?
13. What is active transducer?
14. What analog transducer?
15. How is loudness of sound measured?
16. What is oscillation?
17. What is amplitude?
18. How is pitch of sound measured?
19. What is a microphone?
20. What is hertz?
21. What is piezo electric crystal?
22. Factors responsible for selection of a transducer?
23. Define zero order transducer?
24. What are acoustics?
25. What is ultrasound?
26. What is in infrasonic?
27. What is a sound wave?
28. What are characteristic of sound waves?
29. What is frequency?
30. What is trough?
31. What is SI unit of sound?
32. SONAR stands for?
33. What are longitudinal and transverse waves?
34. What is the speed of sound?
35. What is loudness?
36. What is softness?
37. Uses of sound energy conversion?
38. What is propagation of sound?
39. What is audible range of hearing for human beings?
40. What is KHZ?
41. What is intensity of sound?
42. On what does Speed of sound depend?
43. What is the role of transducer?
44. What is resistive transducer?
45. What is a sensor?
46. What is a bio sensor?
47. What is a chemical sensor?
48. What is active sensor?
49. What is passive sensor?
50. What is a circuit?
51. What is an analog circuit?
52. What is digital circuit?
53. What is a resistor?



54. What is transistor?
55. What is a capacitor?
56. Where are sensors used?
57. Where are circuits used?
58. Where transistors are used?
59. Where capacitors are used?
60. Where resistors are used?
61. What is a mixed–signal circuit?
62. What is a breakout board?
63. What is a PCB?
64. What are different types of circuit boards?
65. How do sounds reach our ear?
66. What is integrated circuit?
67. Why should we use OPAMP?
68. What is the purpose of using Potentiometer?
69. What is the significance of UUC28600?
70. What is a bridge rectifier?
71. Why do we use rectifier?
72. Difference between AC and DC current?
73. What is the measure of current?
74. What is voltage required to charge a phone?
75. How are mobile phones charged currently?
76. Which type of battery is used in phone?
77. What is a USB?
78. What is the role of piezo electric material in this project?
79. How are crystals formed in Piezoelectric Material?
80. Can the heat generated from phone also be used to charge the phone?
81. What is a Multimeter?
82. How can we measure output current using Multimeter?
83. What is IC348?
84. Why do we use colour coding?
85. What is the colour code of 1Kohm resistor?
86. Why should we ground the circuit?
87. What is a ground?
88. What is a diode?
89. What is Emitter?
90. What is Collector?
91. What is a Base?
92. What is the difference between PNP and NPN Transistor?
93. What is Soldering?
94. Why do we use flux while soldering?
95. What is a Jumper wire?
96. How do we differentiate male and female jumper wires?
97. What is the direction of current flow?
98. Why do we use diode in our circuit?
99. How to connect piezoelectric materials in series?
100. How to connect piezoelectric materials in parallel?



## Road Cleaner (or) Waste Segregator

1. What is the use of ultrasonic sensor?
2. Why did you choose ultrasonic sensor?
3. How do ultrasonic sensors detect the presence of object?
4. How do they measure the distance?
5. Do they work at high temperatures and high pressures?
6. Do they work well thick foams or vapours?
7. Do they locate objects moving about in a large area?
8. How much distance can they measure?
9. Can they be designed for layer distances?
10. How do you select the right sensor range for your application?
11. What is the accuracy of the sensor?
12. Do this sensor affected by opaqueness?
13. What is the beam angle of ultrasonic wave and its shape?
14. Do the load audible noise affect the working of sensor?
15. What are the main parts of the sensor?
16. What is the minimum sensing distance of your sensor?
17. What is the frequency range of ultrasonic sensor you used?
18. What is the microcontroller you used?
19. Why did you choose it?
20. How much it costs for its maintenance?
21. Does the detection of object possible in curved paths?
22. How much power supply does it needs?
23. How does fill waste to dustbin?
24. Is there any problems to the passengers from this project?
25. What kind of valve used in this project?
26. What is the main theme of this project?
27. What is the use of atmega 328 microcontroller?
28. Specifications of atmega 328 microcontroller?
29. What is the difference between ultrasonic sensor and IR sensor?
30. What is efficiency of this project?
31. Does it give accurate values or not?
32. How much time does it takes to detect an object?
33. Does it works during rainy seasons?
34. At what temperature does it works?
35. Why you are using arduino board why not other board?
36. Does it easy to operate or not?
37. What kind of software you are used in this project?
38. How does fire really system works?
39. How does the sensor detects flammable objects?
40. Which servo is used in tilting the door?
41. What is the installation cost?
42. How you have written the code of a program in microcontroller?
43. How can dump program in microcontroller?
44. Can we able to rectify the problem occurs in this project?
45. Dust bin works properly?
46. What is the name of the project?
47. All the participants coming from which place?
48. What is the meaning of this project name?
49. Educational details of participants?
50. Why you are interested to do this project?
51. Have you exhibit this project before else?
52. How much cost for this project?
53. How does a motion sensor work?
54. What are the uses of pir sensors?
55. Why can't pir sensors be used instead of pir sensors?



57. Is there a way of making this sensor without the use of Arduino?
58. Instead of using all the connections with breadboard, a direct camera module can be used. Why didn't you do so?
59. Explain pir sensor.
60. This is a basic version of the rotational camera. How can a wireless camera be made?
61. Explain the connections made on the breadboard with respect to Arduino
62. What is the different type of motion sensors?
63. How can sensors be used differently in different devices?
64. What kind of other hardware-software is available in market today?
65. Why is a potentiometer used in servomotor?
66. What kind of motions is available in servomotor? Mention its types.
67. Difference between servo and ac/dc motor.
68. From where does the motor receive the power
69. Where does the motor transmit the signal to?
70. What is electroluminescence?
71. How many kinds of LEDs are available today?
72. Which semiconductor material is used in blue led?
73. Mention some applications of led.
74. Mention some limitations of breadboard.
75. Can we assign angles for servo motor using Arduino?
76. What is the use of capacitor?
77. Mention the colour coding for resistors.
78. List the applications of breadboard.
79. What is the value of resistor used?
80. What will happen if the resistor is removed?
81. Why can't the resistor be replaced by a capacitor or inductor?
82. Explain the breadboard connections.
83. Can led be used in 7 segment display?
84. What the electronic symbol is for led?
85. What is efficiency droop?
86. How to overcome this efficiency droop?
87. What is differential detection?
88. What kind of mirrors is used in pir to focus the infrared energy?
89. Can relay be used in the design of circuit?
90. What is the full form of LED?
91. What is the input and the expected output from the device?
92. Is your project reliable and efficient?
93. Is your device portable?
94. What is the reason/purpose behind this idea?
95. Can our project be further modified?
96. How economical is this project?
97. Does your project work on batteries or electricity?
98. What is the weight of your project?
99. What is a circuit?
100. Does Circuit board differ from circuit?





# Anveshan

BUILDING BRIDGES TO DISCOVER  
SCIENCE & ENGINEERING FAIR

