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100 Times Curious – Collection of Questions

Released on the occasion of

Science & Engineering Fair of Selected Projects

at

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Organised by **Agastya International Foundation**

In support with **Synopsys**

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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



PROJECTS EXHIBITED IN THE FAIR

S.N	PROJECT CODE	PROJECT NAME	COLLEGE NAME/SCHOOL NAME
1	AS-D-E-01	Eco-Friendly Refrigerator	Mangalmay Institute of Engineering and Technology, Greater Noida
			Chetram Sharma Girls Inter College, Sec-45, Noida
2	AS-D-E-02	URJAVAAN - Regenerative Bike	IMS Engineering College, Ghaziabad
			Uppar Primary School, Dasna Gate, Ghaziabad
3	AS-D-E-03	Energy by Moving Train	IMS Engineering College, Ghaziabad
			Uppar Primary School, Dasna Gate, Ghaziabad
4	AS-D-E-04	Noise to Electricity Conversion	NIET, Greater Noida
			RSS International School, Setor -45, Noida
5	AS-D-WM-05	Waste Water as Fertilizers	NIET, Greater Noida
			Navjeevan Inter College, Bhangel, Noida
6	AS-D-WM-06	Latest Design of Chimney	NIET, Greater Noida
			Navjeevan Inter College, Bhangel, Noida
7	AS-D-WM-07	Automated Trashcan	Ajay Kumar Garg Engineering College, Ghaziabad
			Uppar Primary School, Kaila(Balak), Ghaziabad
8	AS-D-WM-08	Pervious Concrete	GL Bajaj Institute of Technology and Management
			RSS International School, Sector -45, Noida
9	AS-D-WM-09	Plasma Pyrolysis Technology	Sharda University
			RSS International School, Sector -45, Noida
10	AS-D-W-10	Farmer Support System	Ajay Kumar Garg Engineering College, Ghaziabad
			Kendriya Vidyalaya, Nehru Nagar, Ghaziabad
			P.C. Senior Secondary School, Ghaziabad
11	AS-D-W-11	MASVIK-1	GD Goenka University, Sohna Road, Gurgaon
			Govt Boys Sr Sec School, Dev Nagar, Delhi
12	AS-D-A-12	CLEARO Air Purifier	Ajay Kumar Garg Engineering College, Ghaziabad
			Uppar Primary School, Kaila(Balak), Ghaziabad



13	AS-D-G-13	VCR System Using Water Cooled	NIET, Greater Noida
			Navjeevan Inter College, Bhangel, Noida
14	AS-D-G-14	Weighing in Motion	NIET, Greater Noida
			Navjeevan Inter College, Bhangel, Noida
15	AS-D-G-15	Automatic Accident Avoiding Vehicle	Mangalmay Institute of Engineering and Technology, Greater Noida
			Chetram Sharma Girls Inter College, Sec-45, Noida
16	AS-D-G-16	Wheel Chair (by Voice Control)	Mangalmay Institute of Engineering and Technology, Greater Noida
			Chetram Sharma Girls Inter College, Sec-45, Noida
17	AS-D-G-17	Bio ATM	GL Bajaj Institute of Technology and Management
			RSS International School, Sector -45, Noida
18	AS-D-G-18	The SOSHELL	GL Bajaj Institute of Technology and Management
			RSS International School, Sector -45, Noida
19	AS-D-G-19	Trespassing Detector	Bharati Vidyapeeth's College of Engineering , Delhi
			Govt Co-Ed Senior Secondary School, Magolpur Kalan, Delhi
20	AS-D-G-20	Conserve Energy in Traffics	Bharati Vidyapeeth's College of Engineering , Delhi
			Govt Co-Ed Senior Secondary School, Magolpur Kalan, Delhi
21	AS-D-G-21	Smart Street Light	NIET, Greater Noida
			Navjeevan Inter College, Bhangel, Noida
22	AS-D-G-22	The Third Eye	KIIT College of Engineering, Gurgaon
			Govt Boys Sr Sec School, Dev Nagar, Delhi
23	AS-D-G-23	The Bionic Hand	Poornima College of Engineering, Jaipur
			Govt Senior Secondary School, Sanganer, Jaipur
24	AS-D-G-24	World Cloud for Events	GD Goenka University, Sohna Road, Gurgaon
			Govt Model Sanskriti Sr. Sec. School, Sushant Lok, Gurgaon
25	AS-D-G-25	Cabriolet VECHI-EEE	IMS Engineering College, Ghaziabad
			Uppar Primary School, Dasna Gate, Ghaziabad
26	AS-D-G-26	Automatic Refrigerator	IMS Engineering College, Ghaziabad
			Uppar Primary School, Dasna Gate, Ghaziabad



1. ECO-FRIENDLY REFRIGERATOR

1. What is refrigerator?
2. What is meant by evaporation?
3. How water get cools by evaporation?
4. What is meant by condensation?
5. Which device is used for condensation?
6. What is capillary device?
7. What is meant by refrigerant?
8. How any substance change its phase?
9. What is phase?
10. What is boiling point?
11. What is boiling point of water?
12. What is melting point?
13. What is melting point of water?
14. What are hydrocarbons?
15. What is full form of CFCs?
16. What is ozone layer?
17. What is ozone?
18. In which layer of atmosphere ozone layer presents?
19. What is refrigeration?
20. What is thermocouple?
21. What is see back effect?
22. What is Thomson effect?
23. What is peltier effect?
24. Why food does not contaminate inside refrigerator for some days?
25. Why amount of water increase after freezing?
26. Which type of bonds presents in ice?
27. Why does ice floats over water?
28. What is density?
29. What is density of water?
30. What is matter?
31. What is mass?
32. What is volume?
33. What is pressure?
34. What is atmospheric pressure?
35. What is value of atmospheric pressure?
36. What is current?
37. Why thermocol is fitted between walls of refrigerator?
38. Why heat affected devices are mostly coloured black?
39. How can we measure amount of refrigeration?
40. What is 1 tonne of refrigeration?
41. What is molecular mass of air?
42. Which gases are present in air?
43. Why hot air goes upwards?
44. What is eco-friendly mean?
45. Why eco-friendly refrigerator don't use refrigerant?
46. How eco-friendly refrigerator cools things without using electricity?
47. What is dry ice?
48. What is force?
49. What are states of matter?
50. Why the particles in solids do not move freely?
51. What is volatile mean?
52. What is inflammable substance?
53. What is throttling?
54. Which device is used for throttling in commercials refrigerators?
55. Why we feel cool when we put acetone on our palm?



56. What is acetone?
57. What is working principle of eco-friendly refrigerator?
58. How can we get electricity from sun?
59. Do solar energy systems need a lot of maintenance?
60. How are pumps useful?
61. What is difference between pump and compressors?
62. What is convection?
63. Which machine is used to charge a battery?
64. What is charge?
65. What is EMF?
66. What are the factors affecting boiling point?
67. What are the factors affecting evaporation?
68. Why are we focusing on solar energy?
69. Is the use of refrigerator is done elsewhere across the globe?
70. What are turbines?
71. What are compressors?
72. What are the types of currents?
73. What is difference between AC & DC currents?
74. What is frequency of DC current in India?
75. What is frequency?
76. How bar is related to pressure?
77. What is heat?
78. What are types of heat?
79. What is latent heat?
80. What is sensible heat?
81. What type of currents do we obtain in our homes?
82. Why can't we use a DC currents in homes?
83. How evaporation cause cooling at the ends?
84. Why we are using fan in our project?
85. What are the advantages of this project?
86. What are limitations of this project?
87. How can we increase the efficiency of this product?
88. Don't you think the water gets evaporated is wastage of water?
89. Will this fan run on a cloudy day by solar panel?
90. Why this eco-friendly refrigerator does not freeze ice?
91. Is it safe to put open substances inside it?
92. What is resource mean?
93. At what temperature water evaporates?
94. Why can we directly produce electricity by solar panels?
95. What is COP stands for?
96. What is approx. COP of eco-friendly refrigerator?
97. Why the COP does is greater than 1?
98. What is heat pump?
99. Has anyone else worked on it before?
100. What is the benefit by creating this project?



2. URJAVAAN - REGENERATIVE BIKE

1. What is solar energy?
2. What is the main benefit of solar energy?
3. What is solar panel?
4. What is solar cell?
5. How solar energy is trapped?
6. How solar panel works?
7. Do solar plants pollute the environment?
8. How much energy comes from solar panel?
9. What is wind energy?
10. What is the main benefit of wind energy?
11. What is wind turbine/fan?
12. What is speed of wind?
13. How wind energy is trapped?
14. How wind turbine/fan works?
15. Does wind turbine/fan pollute the environment?
16. How much energy comes from wind turbine/fan?
17. What is sound energy?
18. What is the main benefit of sound energy?
19. What is speaker membrane?
20. What is coil?
21. How sound energy is trapped?
22. How speaker works?
23. Does sound conversion pollute the Environment?
24. How much energy comes from sound conversion?
25. What is magnet?
26. What are the advantages of stationary armature and rotating field in an AC Generator?
27. What is the efficiency of a generator?
28. How much different is a motor from a generator?
29. How electricity is produced?
30. How it is stored in battery?
31. What is the difference between battery and cell?
32. Define charge.
33. What are the factors affecting energy conversion?
34. What parameters should be taken care of while using a alternator?
35. What is the role of commutator in DC generator?
36. What is the use of windings in the generators?
37. How does no. of windings affect the working of generators?
38. What is flux?
39. How can demagnetization be achieved?
40. On what basis are the brushes placed in a generator?
41. What is dynamo?
42. In a DC machine torque depends on what factors?
43. How is EMF induced in a generator?
44. What is suspension?
45. What is the ideal value of voltage for a device?
46. What is millimeter?
47. Is the EMF induced dynamic or static in generators?
48. Which machine is used to charge a battery?
49. How can the maximum EMF be induced in a generator?
50. What is the angle between the stator and the rotor field in a machine?
51. What is gearbox?
52. Can we use normal switch instead of MCB?
53. Why have we given our prime importance to regenerative energy?
54. Why are we focusing on solar energy?
55. Does this bike exist elsewhere across the globe?



56. Can't we use any other source of energy to run bike?
57. Why are we focusing solar rays?
58. Won't the bike be discharged?
59. Why four batteries are used?
60. Can this process be carried out anywhere?
61. Does the whole setup of bike feasible?
62. Can we use this process in other vehicles?
63. Can we focus the solar rays by any other means?
64. Why can't we use a lens for focusing these rays?
65. Which wire we are using?
66. Why can't we use a plain mirror for solar purpose?
67. What are different types of wires?
68. Why are not we using a convex mirror?
69. How is voltage and current related to watt?
70. What is conventional and non-conventional source of energy?
71. What are turbines?
72. At what pressure does the turbine begin to rotate?
73. What are types of motors?
74. What are the various types of generators?
75. What type of current do we obtain in our homes?
76. Why can't we use AC current?
77. What is the difference between a DC & AC current?
78. What are switches?
79. What are the various advantages of this product?
80. What are the disadvantages of this product?
81. How can we overcome these disadvantages?
82. How can we increase the efficiency of this product?
83. How we use the electricity that is generated?
84. Don't you think sound would further cause pollution?
85. How many people can ride this bike?
86. Can we use any other material instead of iron for frame?
87. What Is MCB switch?
88. Will this work on a cloudy day?
89. Are there any alternatives applicable on a cloudy day?
90. What is the speed of the bike?
91. What is ampere?
92. What is torque?
93. What is energy harnessing?
94. How is it different from conventional bikes?
95. Can we use any other renewable source of energy?
96. Why can't we attain 100% efficiency?
97. Has anyone else worked on it before?
98. Why can't we directly use electricity by solar panels, why we need to store it?
99. Why wire gets heated?
100. What is your benefit by creating this project?



5. WASTE WATER AS FERTILIZERS

1. What is Waste Water?
2. What are the type of waste water?
3. What is pollutant?
4. What is Municipal waste?
5. What is industrial waste?
6. What is domestic waste?
7. What is treatment Process?
8. What are the type of treatment process?
9. What is Domestic waste?
10. What is Industrial Waste?
11. What is Domestic waste water?
12. What is Industrial waste water?
13. What is Primary treatment?
14. What is secondary treatment?
15. What is tertiary treatment?
16. What are perforated pipes?
17. What is Sewage Treatment Plant?
18. What is Bio-reactor?
19. What is aeration?
20. What is sewage waste?
21. What is herbs?
22. What is Shrubs?
23. What is tress?
24. What is hydraulic retention?
25. What is suspended solids?
26. What is organisms?
27. What is Respiration process?
28. What is Reaction involve in respiration process?
29. What is the mineral weathering?
30. What is photosynthesis?
31. What is glucose?
32. What is molecular formula of glucose?
33. What is Nitrogen?
34. What is nitrogen fixation?
35. What is reaction involved in nitrogen fixation?
36. What is acidogenesis?
37. What is reaction in acidogenesis?
38. What is Methanogenesis?
39. What is reaction involve in Methanogenesis?
40. What is reaction involve mineral weathering?
41. What is Nitrification?
42. What is reaction involve in Nitrification?
43. What is Denitrification?
44. What is reaction involve in Denitrification?
45. What is Environmental Engineering?
46. What is biodegradable waste?
47. What is non- biodegradable waste?
48. What is organic waste?
49. What is Inorganic waste?
50. What is BOD?
51. What is COD?
52. What is pH test?
53. What is TDS?
54. What is TS?
55. What is TSS?
56. What is Carbonaceous BOD?
57. What is Nitrogenous BOD?
58. What are factor affect BOD?
59. What is Pathogen?



60. What is Total Coliform?
61. What is fecal coliform?
62. What is Discharge analysis?
63. What is mg/l?
64. What is oxidation?
65. What is reduction?
66. What is biologically active?
67. What is biologically inactive?
68. What is acid and base?
69. Which ion cause acidification?
70. Which ion cause alkalizations?
71. What is colloidal Solution?
72. What is Ammonia Nitrogen?
73. What is kjedhal nitrogen?
74. What is Phosphorus?
75. What is Dilution?
76. What is Nutrients?
77. What are macronutrients?
78. What are micronutrients?
79. What are types of macronutrients?
80. What are types of micronutrients?
81. What is Distillation?
82. What is Digestion?
83. What is Fertilizer?
84. What are the type of fertilizers?
85. How much domestic waste generated every day?
86. How much domestic waste get treated every day?
87. What is ASP?
88. What is Biomass?
89. What is Activated Sludge?
90. What is aeration tank?
91. What is autoclave?
92. What is titration?
93. What is Reflux in COD?
94. What is anaerobic digestion?
95. What is fermentation?
96. What is the composition of Biomass?
97. What is use of biomass?
98. How it help to charge ground water?
99. What is the minimum amount of nutrients required for soil?
100. What is ratio of Carbon and nitrogen for the growth of plant?



6. LATEST DESIGN OF CHIMNEY

1. What is the name of project?
2. Why do we name it latest design of chimney?
3. Why do we called that the filtration net what is its use?
4. Why do we cause some change in our project?
5. What is the general height of chimney?
6. How many net are use in the project?
7. Which elements are used in the composition of first net?
8. Which elements are used in the composition of second net?
9. In which part of chimney we use both the chimney net?
10. What is the difference between two net used in chimneys?
11. What is the height of 1st net above of chimney?
12. What is the height of 2nd net above chimney?
13. How many sensor are used in this project?
14. What is name of sensor?
15. All other component which are used in this project?
16. Why we use this sensor in our project?
17. Is it applicable in all type of application?
18. What is the process of the purifying the air?
19. Name the both net used in it and all its composition?
20. What is the process of getting wastage?
21. Name the compound present in wastage?
22. What is the chemical formula of urea?
23. What is the full form of DAP?
What is the chemical formula of DAP?
24. What is the full form of NPK?
25. What is the chemical formula of NPK?
26. Which compounds are used as fertilizer?
27. What is the melting point of urea?
28. What is the color of urea?
29. What is the melting point of DAP?
30. What is the color of DAP?
31. Name the gases comes from the chimney?
32. Separate the gases from its reactive and non-reactive nature?
33. What are main component are present in wastage gel and its uses?
34. Why we use wastage slider?
35. What is the use purified net?
36. What is name of black gel?
37. What is the use of black of gel?
38. On What principle does the chimney work?
39. What is the significant of this chimney?
40. Can we use this chimney in domestic purpose?
41. What is the working principal of sensor?
42. Why we use sensor?
43. Can we use this sensor in vehicle?
44. What are the applications of chimney?
45. What is the difference between purified net and mix element net?
46. What is the main use of sensor?
47. In which part of chimney we use sensor?
48. Why do we use this chimney?
49. What are the advantages of this chimney?
50. How is this chimney different of this chimney?
51. What are the applications of this chimney?
52. Is it only use for industrial purpose?
53. What are its industrial uses?
54. What happen if we don't use the sensor?
55. Is this chimney is environment friendly?
56. Can we any other source in this chimney?



57. If there is any disadvantages of this chimney?
58. If yes than how can we overcome this disadvantages?
59. Why cannot use ordinary net in this project?
60. What is the motive behind this project?
61. From where this idea is come?
62. How can we show this is more effective project than other?
63. Which gases are present in purified air?
64. Is N₂ and H₂ are present in air?
65. What are the ratios present in gases comes from combustion?
66. What the temperature present in chimney?
67. Name the component with which slider made of?
68. What can we do to remove the stuck element from the net?
69. if slider get decay What can we do?
70. What are the process to use it I bike silencer?
71. Which type of net is use in motorcycle silencer?
72. What is profit of use this of net it?
73. If net is full filled with mixture than what is the process to clean it?
74. What is its cost?
75. What is the cost of net in practical purpose?
76. Is all net are recyclable?
77. Tell me about of all element used in it?
78. What is the property of the given element?
79. In which type of the chimney these net are used?
80. Is this process not worked on single net? if not then why?
81. from where this idea is came
82. if there is any practical application of this project
83. Give the brief description of all wastage elements?
84. What is the use of that black type of gel?
85. From the wastage shall we get all pure fertilizer?
86. When purified net covered with all wastage than What should we do?
87. You says that it is also useful for home purpose so tell me in which type of net we use in home purpose?
88. What is the profit of use of mix element net in domestic purpose?
89. Melting point of cu?
90. Melting point of fe , mg and zn?
91. Why we use P and tungsten in the mix element net?
92. Is the fertilizer come from his process are directly useable in our field?
93. What's the ratio of gases present in chimney?
94. What is the ratio of gases present in atmosphere?
95. What is the ratio of element present in mix net?
96. What is the ratio of element present in purified net?
97. Brief explanation of your project?
98. Disadvantages of the project?



7. AUTOMATED TRASHCAN

1. What are the rules and regulations guiding waste management in India?
2. What is waste management?
3. What are the common methods of waste disposal?
4. What is aerobic composting?
5. What is anaerobic composting?
6. What is incineration?
7. What is a sanitary landfill?
8. How do I practice waste management at home?
9. What are the first few steps to initiate a waste management program in your apartment complex?
10. What are the different types of waste?
11. What are ways of storing the waste at homes?
12. How do I dispose my waste?
13. What is e-waste?
14. How do I manage my garden waste?
15. If you were to leave Waste Management, what would be the reason?
16. What would you suggest Waste Management do to prevent others from leaving for this reason?
17. Is waste management a union company?
18. How can I dispose of my old, used tires?
19. Is a solid waste permit required for the disposal or management of waste tires?
20. Someone business generates hazardous waste. Do he have to notify of hazardous waste generation?
21. If some company generates hazardous waste. Do it has to submit a Biennial Hazardous Waste Report?
22. How can I dispose of used oil?
23. Can I burn used oil in my shop stove?
24. What guidelines have to be followed during building demolition or renovation?
25. What are the requirements for removing asbestos floor tile and asphalt roofing material?
26. Can I dispose of my household generated medical waste with my household garbage?
27. Do I need a permit if I want to bury concrete rubble?
28. What are the common recyclable materials that I can recycle from my household garbage?
29. What type of recycling facilities are located in the area I live in?
30. I was cleaning out the barn and found some old pesticides. What should I do with them and is there anyone who can help me?
31. Aren't some pharmaceutical wastes considered hazardous waste?
32. Why is it that some people do not recycle?
33. What is made from recyclable materials?
34. What can be done with some difficult to recycle items that are found in the home?
35. Why is it so important to recycle?
36. Isn't there plenty of money to be made by recycling?
37. What does the recycling symbol with the three arrows represent?
38. What is composting?
39. What is source reduction?
40. Why is composting important?
41. How does composting work?
42. What can be done to stop the foul smell sometimes emitted by a compost pile?



43. Where can you put a compost pile?
44. What can the average person do to increase composting activities in their community?
45. What can you do with the final compost material?
46. Can earthworms help in the composting process?
47. What can people do to support source reduction?
48. Is source reduction good for the environment?
49. Why don't we have more industries doing source reduction?
50. What are some examples of source reduction?
51. What is an incinerator?
52. What is burned in an incinerator?
53. Is an incinerator good for the environment?
54. How does an incinerator work?
55. How can an incinerator help reduce pollution?
56. Are incinerators hazardous to plants, animals, and people?
57. Why do we need to burn garbage in incinerators?
58. How many incinerators are there in Mississippi?
59. How do they build an incinerator so it doesn't harm the environment?
60. What are household hazardous wastes?
61. Why do we produce household hazardous waste?
62. Can we use things that are less hazardous around the house?
63. Can household waste be disposed of safely?
64. What is litter?
65. Can littering effect animals and our environment?
66. Why do we say littering is wasteful?
67. Can littering cause accidents on the road?
68. Can people be punished for littering?
69. What should we do if we see someone littering?
70. What can we do to help clean up litter?
71. What can we do to teach children and adults not to litter?
72. Why are litter laws not enforced in our communities and counties?
73. How much litter is thrown on the ground each year in Mississippi?
74. Do you think people will stop littering if they are fined?
75. What is illegal dumping and burn barrels?
76. Why do we have illegal dumping and burn barrels?
77. Are illegal dumping and burn barrels bad for the environment and community?
78. Are there laws against illegal dumping and burns barrels?
79. How can the average person in Mississippi assist in stopping illegal dumping and burning waste?
80. Are illegal dumps cleaned up in Mississippi?
81. Is dumping garbage in the ocean considered illegal dumping?
82. How man illegal dumps are there in Mississippi?
83. Are people fined for illegal dumping and using burn barrels?
84. What are landfills and what do they look like?
85. Why do we have landfills and are they really necessary?
86. Are there different types of landfills?
87. How many landfills does Mississippi have in the state and how many are needed?
88. How do you decide where to put a landfill and what are the criteria for locating it there?
89. Why are there landfills near communities?
90. Are landfills used all year round?
91. What types of materials do you find in landfills?
92. How much garbage on average goes into a landfill each day in Mississippi?
93. Can we find other places to put garbage and other waste materials other than in landfills?
94. Can poor landfill management harm the surrounding land?



95. Can a landfill cause future problems with the environment and our underground water? Resources?
96. What will happen if we run out of space to build new landfills?
97. Can and do hazardous chemicals get put into landfills?
Can you build anything on a landfill after it is closed?
98. What happens to the garbage after it is put into a landfill?
99. Are there gases produced at a landfill and if so what happens to these gases?
100. What are some items at your home that can be recycled?



8. PERVIOUS CONCRETE

1. What is meant by concrete?
2. What does pervious stands for?
3. What does meant by sustainable development?
4. What is impervious surface?
5. What does meant by ground water recharge?
6. What is pavement?
7. What is meant by aggregate?
8. What are coarse and fine aggregates?
9. What does meant by ground water recharge?
10. What is meant by infiltration?
11. What is storm water?
12. What is meant by water cycle?
13. What does meant by water management?
14. What is permeability?
15. What does surface water meant for?
16. What is sub-surface water?
17. What is recycling?
18. What are recycled aggregates?
19. How aggregates are recycled?
20. What are demolition waste?
21. What is impact of increasing impervious area?
22. How increasing impervious area alters natural environment?
23. How does increasing impervious surface contributes to flood?
24. How does impervious surface affects quantity of ground water?
25. What are its effect on quality of ground water?
26. How does it reduces quality of ground water?
27. How does it imbalances natural environment?
28. What are its effects on trees and natural vegetation?
29. What are sea breeze and land breeze?
30. How does it controls water pollution?
31. What are cementitious materials?
32. What is cement?
33. What are admixtures?
34. What is load bearing capacity?
35. What is compressive strength?
36. What is grading of aggregates?
36. What is mix proportion?
37. Why does fine aggregates are not used?
38. What is the mix proportion to be used?
39. What does setting time meant for?
40. What does meant by interconnected voids?
41. What is rain water harvesting?
42. What is detention pond?
43. How strong does a pervious concrete pavement?
44. Can pervious concrete be used in any climate?
45. Can pervious concrete be used over clayey or impervious soil?
46. What about drainage issues in clayey content?
47. What does it meant to cure concrete?
48. How to control strength of concrete?
49. How to remove strain from concrete?
50. Why does concrete crack?
51. Where pervious concrete should be used?
52. What is its expected life span?
53. How it is installed?
54. What services do it offers?
55. Why is pervious concrete a sustainable solution?
56. What is retention?
57. What is sub-grade design?
58. What is clogging?



59. How does pervious concrete work?
60. How thick is the pervious concrete should be made?
61. At what extent should sub grade soil be compacted on which it is laid?
62. How strong is it with compared to regular concrete?
63. What is average infiltration rate?
64. What kind of traffic does the site get?
65. What is downstream for the site?
66. Is infiltrating storm water pollute ground water?
67. What is the life span of pervious concrete pavement?
68. What is use of interconnected voids?
69. What is evaporation?
70. What is condensation?
71. What is precipitation?
72. What does durability means?
73. What does workability stands for?
74. What is the need of recycling aggregates?
75. How it controls flooding?
76. What does a permeable surface means?
76. What is conventional concreting?
78. How light color of pavement affects the environment?
79. What is EPA?
80. What is range of infiltration?
81. What is supplementary cemetatious material?
82. How permeability test is done?
83. What is falling head test?
84. What are the apparatus used in permeability test?
85. Is there any other method to test permeability?
86. Why we used only falling head test?
87. What is the use of permeability test?
88. What is compressive strength test?
89. How compressive strength test is performed?
90. What are the apparatus used in compressive strength est?
91. What is the benefit of this project?
92. What is the need of building pervious concrete pavement?
93. How this idea is existing and modified?
94. What is motive of this project?
95. What is new in this project?
96. Is it economical than traditional concrete?
97. What knowledge does it provide to our society?
98. How is it helpful to young learners?
99. How it can be used in business purpose?
100. What is the cost of this project?



9. PLASMA PYROLYSIS TECHNOLOGY

1. Why do we generate waste?
2. Can't there be any alternative for plasma torch?
3. What is plasma?
4. Cannot we sterilize and reuse medical end products?
5. Doesn't plasma pyrolysis technology release greenhouse gases?
6. Are all the thermally stable bacteria that are killed are harmful and not at all useful?
7. What is done with the concentrated waste formed after incinerating?
8. How is plasma pyrolysis better than incineration?
9. Can there be any alternative for plasma torch?
10. Is plasma torch economically a good choice?
11. How does plasma torch works?
12. Why we are using transformer in our model?
13. what is the difference between step-up and step-down transformer?
14. How to calculate the no of turns in primary coil and secondary coil?
15. How does transformer work?
16. Why we are not preferring incineration method?
17. What is radioactive waste?
18. Is plasma pyrolysis technology economically viable?
19. What is the capacity of disposing waste in plasma pyrolysis technology?
20. What are the chemical reactions involved in the process?
21. What are dioxins and furans?
22. What are the various types of gases emitted in the disposal of waste?
23. Do the handlers lie in the safe zone while treating these waxes?
24. Can plasma torch be replaced?
25. Which kind of electrodes present in the plasma torch?
26. How much is the regular power supply we get in our home?
27. How will we reduce cost of power supply?
28. What are scrubbers?
29. What is meant by autoclaves?
30. What is meant by hydroclaves?
31. Why we are using inverter here?
32. Can Plasma technology work with A.C supply?
33. What is meant by sequestrations?
34. Why CO2 emission in this technology is not protected by scrubber?
35. How plastic materials are treated?
36. Can this technology produce pollution in other factors?
37. What are radioactive substances?
38. What is the basic meaning of plasma?
39. Is there any agency which covers the standard for pollution?
40. What is the full form of CPCB?
41. What is slaked lime?
42. What happens when we pass CO2 to slaked lime?
43. How much it will cost to make a CO2 scrubber?
44. What type of scrubber we are using in our model?
45. How can we treat the CO2 emitted?
46. Which type of material the chambers in ppt are made of?
47. How many hospitals in India have this technology?
48. What are the demerits of plasma pyrolysis technology (PPT)?
49. Which type of gas is passed through plasma torch?
50. Graphie electrode is cathode or anode?



10. FARMER SUPPORT SYSTEM

1. What is forecasting?
2. What is Nowcasting?
3. What is short range weather forecasting?
4. What are medium range forecasts?
5. What is long range forecast?
6. What is extended range forecast?
7. What type of forecasting we are doing in project?
8. How will we predict the rainfall?
9. What is machine learning?
10. When did machine learning develop?
11. What is difference between ML and AI
12. Is there further classification in machine learning tasks?
13. What is supervised machine learning?
14. What is unsupervised machine learning?
15. What are various machine learning approaches?
16. What approach we are using?
17. Why time series?
18. What model are we using?
19. What is full form of ARIMAX?
20. What does X mean?
21. What are the various factors that are responsible for rainfall?
22. How does temperature affect rainfall?
23. How does pressure affect rainfall?
24. How does cloud cover affect rainfall?
25. What are the seasons defined by the India Meteorological Department for the country as a whole?
26. What is maximum temperature?
27. What is minimum temperature?
28. What is atmospheric pressure?
29. How do we express the quantity of rainfall?
30. What is southwest monsoon?
31. What causes the monsoon?
32. Which are the prominent monsoon regions, other than India?
33. Is there an instrument to measure rainfall?
34. What are clouds?
35. How are clouds classified?
36. What are land and sea breezes?
37. What are the different methods used for long range forecasting?
38. Who is responsible for issuing operational long range forecast in India?
39. What method is used for the purpose?
40. Which are the countries that use empirical models for long range forecasts?
41. What is the difference between weather and climate?
42. What are the long range forecasts prepared by IMD and when are they issued.
43. What is the accuracy of the long range forecast for monsoon rainfall issued by IMD?
44. Why are weather forecasts sometimes inaccurate?
45. What is Satellite Meteorology?
46. What is a radar?
47. What is the working principle of radars?
48. Which area in India receives highest rainfall?
49. What is reason for such high rainfall?
50. Which area in India receives least rainfall?
51. What is Adriano
52. What is the use of UV sensors in this project?
53. What is a BMP-180?



54. How do we measure temperature?
55. How will we measure soil moisture?
56. How does Adriano receives power?
57. Why this hardware module?
58. Which language are commonly used for machine learning?
59. Which language we are using for our project?
60. What is tableau?
61. What is motive of this project?
62. How will this software benefit farmers?
63. What is data?
64. What are various types of data?
65. What is structured data?
66. What is unstructured data?
67. What is semi structured data?
68. What data is most widely found?
69. What dataset we are using in our project?
70. What is Big Data?
71. Does that mean 100TB is Big Data?
72. Does that mean Big Data is relative term?
73. When did Big Data originate?
74. How do we analyze Big Data?
75. What is Hadoop?
76. What are some of the tools of big data?
77. Which tool is best?
78. What is vertical scaling?
79. What is horizontal scaling?
80. What are major crops in India?
81. What are different categories of crops in India?
82. What are different crop seasons in India?
83. What is crop rotation?
84. What are environmental benefits of crop rotation?
85. What is Shiny framework?
86. Which technology is used for backend?
87. What is ARIMA model?
88. Who will answer the farmer's query?
89. What are the various types of precipitations?
90. What are the steps involved in water cycle?
91. How is a cloud formed?
92. What are the factors determining the distribution of rainfall?
93. Law on which the direction of wind is based?
94. Is time series forecasting a part of supervised learning?
95. What are the types of time series forecasting?
96. Can
97. We use neural networks for predicting trends?
98. What is ACF(Auto correlation function) and PACF(Partial autocorrelation function)?
99. What is stationary data?
100. Is ARIMA model an additive model?



11. MASVIK-1

1. What is the need of project?
2. Which material is used to make tank?
3. Why are we using poly propene to make the tank?
4. What is the formula for poly propene?
5. How we will join the tank?
6. What is welding?
7. What is Arduino?
8. Which machine is used to make the tank?
9. What is welding rod?
10. What is the function of Arduino?
11. Why are we using Arduino only?
12. Why we are not using metal to make the tank?
13. Metals are which type of agent?
14. What is hydration?
15. What is hydrogenation?
16. Which element is least electronegative?
17. What is density?
18. What do you mean by Desalination?
19. What is the main benefit of seawater desalination?
20. What happens to the salt that's off from the water?
21. How does desalination works?
22. What is equilibrium?
23. How can we get electricity from sun?
24. Do solar power system requires lots of maintenance?
25. What is the main components required to take use of the solar technologies?
26. How is a solar electric system designed and maintained?
27. On what principle will the generator works?
28. What is of AC generators?
29. What is faraday's law of electromagnetic induction?
30. What is the Different sources of mechanical energy?
31. Wh.at is the importance of the magnetic field in AC generator?
32. What are the two main parts of AC generator?
33. What is the difference between AC Generator and DC Generator?
34. What are the advantages of rotating field in an AC Generator?
35. What is the efficiency of a generator?
36. What is Motor?
37. How much different is a motor from a generator?
38. Why AC is preferred over DC?
39. How does water evaporates below its boiling point?
40. What is the difference between evaporation and Vaporization?
41. Define boiling point?
42. What are the factors affecting boiling point?
43. What is electromagnet?
44. What is Generators?
45. What is Windings?
46. Why do we use windings in the generators?
47. What is flux?
48. What is demagnetization?
49. How can demagnetization be achieved?
50. On what basis are the brushes placed in a generator?
51. What is EMF?
52. How is EMF induced in a generator?
53. What is static Equilibrium?
54. What is Dynamic Equilibrium?
55. Is the EMF induced dynamic or static in generators?
56. How can the maximum EMF be induced in a generator?
57. What do you mean by desalitic ?



58. What do you mean by Saline water?
59. Can we use potable water instead of saline water?
60. Why is seawater important?
61. What is solar energy?
62. What is desalination?
63. Can we use any other source of energy to evaporate water?
64. Why is solar rays?
65. What is evaporation?
66. What is Melting point?
67. What is the melting point of poly propene?
68. How much heat is required to melt the welding rod?
69. What is lens?
70. What is Mirror?
71. What is Ray?
72. Why can't we use a lens for focusing these rays?
73. Which mirror are we using?
74. What is concave lens and convex lens?
75. What is a plain mirror?
76. What is the difference among a concave mirror, a convex mirror and a plain mirror?
77. Why we use a convex mirror?
78. What is pressure?
79. How is bar related to pressure?
80. What are the various other units of pressure?
81. What is motion?
82. Explain 3 laws of motion?
83. What are turbines?
84. At what pressure does the turbine begin to rotate?
85. What is super critical & sub critical pressure?
86. What are the various types of generators?
87. How does arduino works?
88. What is Distilled water?
89. How to make distilled water?
88. Is distilled water safe for drinking?
89. Why can't we attain 100% efficiency?
90. At what temperature water evaporates?
91. What is the difference between normal salt and iodized salt?
92. What are different types of welding?
93. What is ammeter?
94. What is voltmeter?
95. What is time period and frequency?
96. What is power?
97. What is difference between emf and potential difference?
98. What is KCL and KVL?
99. What is admittance and Resistance?
100. What is the Importance of Project?

Anveshan
BRIDGING BRIDGES TO DISCOVER
SCIENCE & ENGINEERING FAIR



12. CLEARO AIR PURIFIER

1. What are Air Pollutants?
2. What is Air Pollution?
3. What is Air Pollution Control?
4. What is Air Pollution Monitoring?
5. What are Air Pollution Legal Aspects?
6. Why Be Concerned?
7. What is Air Quality?
8. What is Atmosphere?
9. What are the Effects of Air Pollution?
10. What do you mean by Indoor Air?
11. Pollution due to Mobile Sources?
12. What You Can Do?
13. What is a purifier?
14. Why are we making it?
15. Why you came to us for this project?
16. What role can we play in this?
17. What are the benefits we are going to have after doing this project?
18. Who are behind these ideas?
19. Why you chose air purifier as your project?
20. What is smog?
21. Effects of smog?
22. Why vehicles usage is not being reduced?
23. How effective is our project?
24. What is $\text{Ca}(\text{OH})_2$?
25. Why $\text{Ca}(\text{OH})_2$?
26. What is CO ?
27. Why CO ?
28. What is NO_x ?
29. What is SO_x ?
30. Why NO_x ?
31. Why SO_x ?
32. What is HEPA?
33. What is full form of HEPA?
34. What is meant by particulate air?
35. Why Only HEPA?
36. What is a sensor?
37. What is the role of sensor in our project?
38. What is the main idea of our project?
39. How many sensors are we using?
40. Why we are using 3 sensors?
41. What is the role of MQ-7 in our project?
42. What if we don't use MQ-7?
43. Is it replaceable?
44. Can we use anything else in place of MQ-7 which is more effective but cheaper in cost?
45. How we are supposed to attach MQ-7 in our project?
46. Can MQ-7 be used to detect anything else other than CO ?
47. What is the role of MQ-135 in our project?
48. What if we don't use MQ-135?
49. Is it replaceable?
50. Can we use anything else in place of MQ-135 which is more effective but cheaper in cost?
51. How we are supposed to attach MQ-135 in our project?
52. Can MQ-135 be used to detect anything else other than NO_x ?
53. What is the effective cost of MQ-135?
54. What is the effective cost of MQ-7?
55. What is the name given to our project?
56. What inspires you to perform this kind of project?



57. How you came to know about importance of air purification?
58. Being a Delhite how you can control pollution on a large scale?
59. What are the steps which we as a student should adapt to control air pollution?
60. What is the need of making us all understand about this project?
61. Why all of a sudden you all want us to know about air pollution and its effects?
62. You 4 were alone capable of designing this project on your own so what was the need of making us a part of this project?
63. What if we spoil your project or we are not able to understand what you are trying to convey?
64. What is that third sensor we are using in our project?
65. What is the role of that sensor?
66. Is it replaceable?
67. What basically is SDS011?
68. What if we don't use it?
69. Anything more effective than this sensor but cheaper in cost?
70. Only these 3 sensors are being used?
71. Why it is hardly available?
72. What is its efficient cost?
73. Where all these sensors are attached to?
74. What is Arduino mega?
75. Is it too hard for us to understand its working?
76. What is the role of Arduino mega in our project?
77. How it is behaving as a brain of our project?
78. What if we remove it from our project?
79. What is the purpose of attaching it in our project?
80. How much is its efficient cost?
81. Is it easily available?
82. Please explain the proper working of arduino mega in our project.
83. How we are attaching it in our project?
84. What if we change the position of arduino mega in our project?
85. What is a LED?
86. What is its role in our project?
87. What is a diode?
88. How it works?
89. How many LEDs we are using in our project?
90. Where are these LEDs positioned?
91. Why they are attached to sensors?
92. What if we connect a single LED to all the sensors?
93. Can we use less LEDs to reduce the cost?
94. Why a set of two LEDs is attached to one sensor?
95. What is a critical condition?
96. What is a normal condition?
97. Which light glows if the one sensor detects high amount of concentration in pollutants?
98. What if both light glow together?
99. When does the normal light shows up on LED?
100. How we know which LED is corresponding to which sensor?



13. VCR SYSTEM USING WATER COOLED

1. What is refrigeration?
2. What is refrigerant?
3. What is cooling effect?
4. What is main components of VCR system?
5. What is compressor?
6. What is the type of compressors?
7. Why taking refrigeration in TR?
8. What is 1 TR ?
9. Why using R134a as a working refrigerant?
10. What is cop?
11. State difference between COP and Efficiency.
12. What is unit?
13. How a compressor is work?
14. On open door of fridge is it cool the room?
15. What is recent using refrigerant by engineers?
16. What is air conditioning system?
17. What is disadvantage of VCRS?
18. Why not using R22 as working refrigerant?
19. What is future scope of your projects?
20. On obtaining great cooling which refrigerant is use?
21. What is eco-friendly refrigerant?
22. Is VCR system deplete the ozone layer?
23. If it does then still why we are using it?
24. What is refrigerator?
25. What is the work of expansion valve?
26. What is the temperature range up to which we work for cooling?
27. What is no. of moles?
28. Why we use accumulator in VCR system?
29. What is latent heat?
30. Is our project is 100% efficient?
31. What is the difference between evaporation and vaporization?
32. Define boiling point.
33. What are the factors affecting boiling point?
34. What parameters should be taken care of while using a compressor?
35. What is the role of coolant in condenser?
36. What is the use of expansion valve in the refrigeration?
37. How does surface of condenser affect the working of refrigeration?
38. What is ozone layer depletion?
39. How can maximum COP be achieved?
40. On what basis are the refrigerant placed in equipment?
41. What are the effects of refrigerant on atmosphere?
42. In a refrigeration system cooling depends on what factors?
43. How is refrigerant pumped in whole system?
44. What is the function of compressor?
45. What is the ideal value of voltage for a device?
46. What is the function of condenser?
47. How will it affect global warming?
48. Which machine is used to maintain flow of cooling medium in condenser?
49. How can the maximum cooling be produced in a refrigerator?
50. What is the range of pressure for compressor?
51. What is value of latent heat for refrigerant and water?
52. Can we use potable water instead of tap water?
53. Why have we given our prime importance to condenser?
54. Why are we focusing on global warming?



55. Is the process of improvement in COP done elsewhere across the globe?
56. Can't we use any other source of energy to cool the condenser?
57. Why are we focusing refrigerant R-134a?
58. Won't evaporation occur as time passes away?
59. Why aren't we using the water that we obtained as the end product of this experiment?
60. Can this process be carried out anywhere?
61. Does the whole setup of VCERS can be used for heating?
62. Can we use this process to air conditioning of room?
63. Can we focus the solar energy by any other means?
64. Why can't we use refrigerant R-22 for refrigeration?
65. Which type of heat transfer element are we using?
66. Why can't we use a flat condenser for this purpose?
67. What is the difference among a heat exchanger and a condenser?
68. Why aren't we using parallel flow in condenser?
69. How is bar related to pressure?
70. What are the various other units of pressure?
71. What are expansion devices?
72. At what pressure does the turbine begin to rotate?
73. What is super critical & sub critical pressure?
74. What are the various types of refrigerants?
75. What type of current do we obtain in our homes?
76. Why can't we use a rotary compressor?
77. What is the difference between a rotary & reciprocating compressor?
78. How do we attain cooling at the end?
79. What are the various advantages of this product?
80. What are the disadvantages of this product?
81. How can we overcome these disadvantages?
82. How can we increase the efficiency of this product?
83. How can we use this cooling that is generated?
84. Don't you think this system would further cause pollution?
85. Can we move around our apparatus?
86. Is any further treatment required to the water obtained?
87. What is the function of evaporator?
88. Will this work on different environmental condition?
89. Are there any alternatives applicable on different environmental condition?
90. With the recent climatic conditions how will you protect it from storms?
91. What can we do with the evaporator?
92. Is the water safe for refrigerant?
93. What is the difference between evaporator and condenser?
94. Can't we use a solar panel in our project?
95. Can we use any other renewable source of energy?
96. Why can't we attain 100% efficiency?
97. Has anyone else worked on it before?
98. Why can't we directly produce cooling by solar energy?
99. At what temperature water evaporates?
100. What is your benefit by creating this project?



14. WEIGHING IN MOTION

1. What is WIM?
2. Why it is used?
3. What are the other methods of weighing?
4. What are the units of the measurement?
5. What is weighing station?
6. Why weighing is necessary of vehicle?
7. What are the system available in the market of WIM?
8. How WIM is different from normal weighing methods?
9. What are sensors?
10. How does sensors work?
11. Why sensors are used?
12. Which are the sensors used in WIM?
13. What is load cell?
14. What is piezoelectric material?
15. How piezoelectric material works?
16. What is the advantage of using piezoelectric sensor over other?
17. What are the other sensors used for measuring the load?
18. What is static loading?
19. What is dynamic loading?
20. What are the difference between the static and dynamic loading?
21. What is dampers?
22. Why dampers are used?
23. What are the different types of dampers available in the market?
24. Which damper is used widely and why?
25. What is telescopic twin cylinder dampers?
26. What material is used in the damper?
27. How a damper works?
28. What is the effect on the system if we not use dampers?
29. What is damping
30. How damping is achieved in the dampers?
31. What is spring?
32. Why springs are used?
33. What is stiffness?
34. What are the different forms of the spring?
35. Which spring are commonly used?
36. What is leaf spring?
37. Why leaf spring is used?
38. How leaf spring works?
39. What are the components of leaf spring?
40. Why master leaf is supported other leaves?
41. What is tapered leaf springs?
42. What are the types of leaf springs?
43. How leaf springs is attached to the systems?
44. What are the other places where we see the utilization of leaf spring?
45. Why leaf spring is used as compared to the other springs?
46. How the load is distributed on the leaf spring?
47. What are the load?
48. What is reaction?
49. What is vibration?
50. Why it is necessary to take care of the vibrations produced in the system?
51. What are the general places we see the vibration?
52. What are the different loads which a leaf spring can sustain?
53. What is bending moment?
54. What is bending?
55. What is homogeneous material?



56. What is non-homogeneous material?
57. What is rigid material?
58. What is real material?
59. Why rigid material is considered?
60. What is stress?
61. What are the different stresses induced in the system?
62. What is beam?
63. What are the loads a beam supports?
64. What is the difference between bar and beam?
65. What is the column?
66. How column is different from beam?
67. What is axle?
68. How axle is different from beam?
69. Why cross section of beam is most important?
70. Why the cross section of beam is selected in our project is of this shape?
71. What are the loads to be carried by beam?
72. How load is applied on the beam?
73. Why beam is used in structures?
74. What are the forces needed to be considered while calculating the dimension of beam?
75. How the force is distributed over beam?
76. What are the different types of loading on beam?
77. What is inductive loop?
78. Why inductive loop is used?
79. What is the inductive loop we are using in the project?
80. How the inductive loop works in our project?
81. What are the different system to be controlled by the inductive loop?
82. Why inductive loop is necessary?
83. What are IR sensors?
84. How IR sensor works?
85. What is the size of our system?
86. What is the capacity of system?
87. What is capacity of our system?
88. What is range?
89. What is the range of measurement of our system?
90. What is least count?
91. What is least count of our system?
92. How our system works?
93. How it is different from other systems available in the market?
94. What is the computer data base?
95. How we compare the loads from database?
96. What is pinning?
97. What is pavement?
98. What is Gross Weight?
99. What is Dry Weight?
100. What is ADC?



17. BIO ATM

1. What is meant by BIO AVM?
2. What is the main benefit of this machine?
3. Is BIO AVM damaging in nature?
4. How biometric sensor works?
5. What kind of data can be measure by the wrist band?
6. How does BIO AVM works?
7. How cashless transaction will be done?
8. How live doctor will communicate with the patient?
9. How much energy is required to operate this machine?
10. In which areas this machine more helpful?
11. Explain optical character recognition (OCR).
12. What is the principle behind this machine?
13. How can we take data from patient?
14. Do BIO AVM need a lot of maintenance?
15. What are the main components required to take data from wristband?
16. What is the medicine holding capacity of the machine?
17. In India how many people lives in rural areas?
18. How the cashless transaction will useful?
19. on what principle does the motors works?
20. What is the working principle of dispenser box?
21. At which frequency wrist band will work?
22. What are the various sources of mechanical energy?
23. What is the significance of the rotating springs?
24. What are two main parts of dispenser box?
25. How the ambulance will reach at the machine location?
26. What is the Principle of panic button?
27. What is the efficiency of this AVM machine?
28. How patient will enter Aadhar card number?
29. In how many language this machine can operate?
30. How patient will select their symptoms?
31. How medicine facilities will improve?
32. Define sensors.
33. What are the factors affecting medicine facilities?
34. What parameters should be taken care of while selecting symptoms?
35. What is the role of bio-metric sensor in cashless transaction?
36. What is the use of arduino in the dispenser box?
37. What kind of motors will be used in this machine?
38. How doctors will available 24x7 for live consultancy?
39. How patient will believe in machine?
40. On what basis are the motors placed in the machine? Q41. What are the effects of cashless transaction?
42. In a DC machine torque depends on what factors?
43. How DC motor works?
44. What is the function of inner poles?
45. What is the ideal value of voltage for this machine?
46. What kind of material will be use in manufacturing of the machine?
47. How this machine get power 24x7?
48. Which device is used to charge a battery?
49. How this machine will get internet connectivity?
50. How villagers will operate this machine?
51. What is AVM?
52. Can we use cash instead of cashless transaction?
53. How you will solve the problem of scarcity of medicines?
54. Why are we focusing on rural areas?
55. How many people dies due to lack of facilities in rural areas?



56. Can we use any other source of energy to operate this machine?
57. Why are we focusing more on rural as compare to urban areas?
58. In which areas we can implement this machine?
59. How this machine will get the bank information of individual by their aadhar card?
60. Is this aadhar transaction safe?
61. Does the whole setup of BIO AVM require a rural or can it be done at a non rural region?
62. Can we use this process to distribute free medicines?
63. How this machine will be helpful for passengers?
64. How this machine will differentiate between different medicines?
65. How you will aware the peoples about this machine?
66. What is the accuracy of this machine?
67. What will be the size of wrist band?
68. How the band will measure body temperature?
69. What is the accuracy of wrist band?
70. Data send by the wrist band will be in form of analog or digital?
71. How OCR will work?
72. Can OCR able to read any type of font?
73. How patient will communicate to the doctors?
74. What are the various types of medicines?
75. Is this machine is useful for some serious diseases?
76. Is this machine require any kind of security?
77. What is the difference between a DC & AC current?
78. What is the role of panic button in the machine?
79. What is the response time of ambulance?
80. What kind of primary medicines will be in machine?
81. How can we overcome these disadvantages?
82. How can we increase the efficiency of this product?
83. How can we use electricity for this machine?
84. Is this machine is eco-friendly in nature?
85. Can we move around our apparatus?
86. Is any further treatment required to the patients?
87. Is machine can give only required quantity of medicines?
88. Is there any database require for this machine?
89. Is IOT play any role in manufacturing of this machine?
90. How we will deal with the bottle medicines?
91. What can we do with the open medicine?
92. How machine read expiry date on every medicine?
93. What is the probability to given wrong medicine?
94. Can we use a solar panel in our project?
95. Can we use any other renewable source of energy?
96. Why can't we attain 100% efficiency?
97. Has anyone else worked on it before?
98. Where you will implement this machine at initial stage?
99. How you will earn by this project?
100. What is your benefit by creating this project?



18. THE SOSHELL

1. What is SOShell?
2. What is the main benefits of a helmet?
3. How to design and implement helmet standards?
4. What are the main innovations in SOShell?
5. How does SOShell works?
6. Whom does SOShell benefits the most?
7. What security steps are being taken to make the helmet?
8. How is SOShell different from other helmets?
9. Are there any existing helmets similar to SOShell in Local or Global market?
10. What are the steps taken to make SOShell rider friendly?
11. What are the steps taken for helmet awareness in public?
12. How is SOShell connected to healthcare?
13. What are the main components used in developing this helmet?
14. What are the resources needed in implementing the helmet programme?
15. What are the various helmet legislations and enforcement?
16. How big is the motorcycle injury problem?
17. Why don't people wear helmets?
18. What are the major injuries caused in a road accident?
19. What are EMS (Emergency Medical Services)?
20. What are some standards set by govt. for helmet manufacturing?
21. What is a Helmet?
22. What is a Bluetooth?
23. What does SOS stand for?
24. What is ISM band?
25. What is Accelerometer?
26. What is a Gyroscope?
27. What is frequency?
28. What is operating frequency for Bluetooth?
29. What is a microcontroller?
30. What are the applications of microcontroller?
31. Why microcontroller is used?
32. What are sensors?
33. What are pressure sensors?
34. How does a sensor work?
35. What are the basic changes identified by sensors?
36. What are impact sensors?
37. What are pressure sensors?
38. What is a battery?
39. What are different types of batteries?
40. What is a USB?
41. What is li-ion battery?
42. What are polymer batteries?
43. What are Ni-Mh batteries?
44. What are Ni-cd batteries?
45. What are AA batteries?
46. What are AAA batteries?
47. What is the importance of strap in a helmet?
48. What is the basic difference between AC and DC?
49. What is the frequency of AC in India?
50. What is GPS?
51. How GPS works?
52. What is an operating system?
53. What is an Android?
54. What are apps?
55. How is the SOShell connected through mobile application?
56. What are the importance of using an mobile application?



57. What are the various features of the mobile application?
58. What are the various emergency contacts used in SOShell after crash?
59. What is Do Not Disturb (DND) mode?
60. What is the advantage of DND?
61. How DND gets activated through SOShell?
62. What is SOS ignition lock?
63. What is the advantage of SOS ignition lock?
64. How SOS ignition lock gets activated through SOShell?
65. What are speed alerts?
66. What are the advantages of speed alerts?
67. How speed alerts are send through SOShell?
68. What is a breadcrumb trail?
69. What are the advantages of breadcrumb trail?
70. How breadcrumb trail is recorded through SOShell?
71. What is Anti-Theft?
72. What are the advantages of Anti-Theft?
73. How Anti-Theft works?
74. What are the measures taken for road safety?
75. What is integrated circuit?
76. What is resistor?
77. What is capacitor?
78. What is inductor?
79. What is bandwidth?
80. What is frequency spectrum?
81. How can you define current?
82. What is the SI unit for current?
83. What is the difference between electrical and electronics?
84. Define 1 Ampere of current?
85. What is charge?
86. What is the charge of an electron?
87. What is the SI unit of charge?
88. Who discovered electricity?
89. Explain the famous kite experiment?
90. What is an atom?
- 91 Explain different models of a atom?
92. What are the advantages of doing a project?
93. What have you learned from this project?
94. State different applications of this project?
95. What are the benefits you get by creating this project?
96. Does sos shell could be modified?
97. Which level of technology is used in sos shell?
98. Is this project being helpful in enhancing your academic knowledge?
99. What are the values does sos shell provide to its customers?
100. What level of safety does sos shell provide?



 BUILDING BRIDGES TO DISCOVER

 SCIENCE & ENGINEERING FAIR



19. TRESPASSING DETECTOR

1. What is the aim of the project?
2. What do you mean by trespassing?
3. What do you mean by detector?
4. What is the origin and inspiration of this project?
5. What are the practical components used in this project?
6. What is a sensor?
7. What are the sensors which we say in our daily life?
8. Sensors in our body?
9. What is current?
10. What is a battery?
11. What are the types of current?
12. What is the conventional direction of current?
13. What is the actual direction of current?
14. What are electrons, protons and neutrons?
15. What is energy?
16. What are the forms of energy?
17. What are positive charges?
18. What are negative charges?
19. What is ground?
20. What is Cartesian plane?
21. What are coordinates?
22. What are the benefits of coordinates?
23. How can we read and write coordinates from Cartesian plane?
24. What is z-axis?
25. What if we interchange the x, y and z axis with each other?
26. What is a breadboard?
27. What is the internal structure of a breadboard?
28. How can we make connections using a breadboard?
29. What is an electric circuit?
30. What do you mean by complete circuits?
31. What is your benefit by creating this project?
32. Has anyone else worked on it before?
33. Which microcontroller are we using?
34. What is flow diagram?
35. Flow diagram of the project?
36. What is a microcontroller?
37. Can using a microcontroller be dangerous?
38. What are the specifications of the microcontroller that we are using?
39. Does using a microcontroller require extra care?
40. Why can't we attain 100% efficiency?
41. Can we move around our apparatus?
42. How can we increase the efficiency of this product?
43. On what principle does the generator works?
44. Which sensor are we using?
45. What is PIR?
46. What is the use of PIR in this project?
47. What is web camera?
48. What is the use of a web camera in our project?
49. What is the resolution of web camera we are using in the project?



50. What are the various advantages of this product?
51. What are motors?
52. Which motor are we using?
53. What is the use of that motor in our project?
54. What is male side of connecting wires?
55. What is female side of connecting wires?
56. What are conductors?
57. Define insulators?
58. What do you mean by good and bad conductor?
59. What do you mean by good and bad insulator?
60. What is a resistor?
61. What is electrical energy?
62. What is mechanical energy?
63. How does a sensor work?
64. What are generators?
65. What is the basic working principle of a motor and a generator?
66. What is the difference between a motor and a generator?
67. What is the range of a PIR sensor that we are using?
68. How can we increasing the range of sensing the movements?
69. Till what limit can the range of sensing the movement be increased practically?
70. What are DC and AC currents?
71. What are the current, voltage or power requirements for our project?
72. What source of current are we using?
73. Are we just observing the movements or are we using a triggering device such as a gun for better security?
74. How can we use a triggering device along with our project?
75. What would be the other requirements for using this triggering device?
76. Can this project work anywhere?
77. Can this project work on foggy/cloudy/rainy?
78. What would be an alternative on foggy/cloudy/rainy days?
79. What is the range of temperatures between which the project would work?
80. How can a person in a control room see the movements occurring at a remote location?
81. What is motion tracking?
82. How is motion tracking being used in the project?
83. What is the future scope of this project?
84. What are the disadvantages/limitations of this product?
85. How can we overcome these disadvantages/limitations?



20. CONSERVE ENERGY IN TRAFFICS

1. What is a traffic light?
2. How many color indications are there in traffic light?
3. What is the meaning of different colors used in traffic light?
4. What are the different traffic signs?
5. What is smart traffic light?
6. What are the components of smart traffic light?
7. What is microcontroller?
8. Which microcontroller is used in this model?
9. Which memory element is used in the smart traffic light system?
10. How many pins are there in microcontroller used?
11. How microcontroller works?
12. Which programming language is used to burn microcontroller?
13. How program is burnt into microcontroller?
14. Which compiler is used to program microcontroller?
15. Which software is used to design circuit of smart traffic light system?
16. Which version of software is used?
17. Does the circuit is simulated on software?
18. What do you mean by Density detection of traffic?
19. Which component is used for density detection?
20. What do you mean by sensors?
21. What is Infrared sensor?
22. Why sensors are used?
23. Explain the types of sensors.
24. What are transducers?
25. Differentiate between sensors and transducers.
26. Does IR sensors come in modules?
27. How many pins are there in IR sensors?
28. What are the different components in IR sensor package?
29. What is the function of transmitter and receiver?
30. What is the detection range of IR sensors?
31. What are infrared rays?
32. What is the wavelength spectrum of infrared rays?
33. Is Infrared rays visible to human eyes?
34. What are the different applications of infrared rays?
35. What are LEDs?
36. What are diodes?
37. How LEDS work?
38. What do you mean by biasing of diode?
39. LED works on which biased condition?
40. What is the power input of Led?
41. What are Crystal oscillator?
42. Why crystal oscillators are used?
43. What is the function of Oscillator?
44. What are the different components in oscillator circuit?
45. Which power is use to drive microcontroller circuit?
46. What is DC and AC Power?
47. How DC power is generated?
48. What is the advantage of DC power?
49. What is Rectifier?
50. What are the different types of rectifier?
51. What is bridge rectifier?
52. What is the advantage of bridge rectifier?
53. What is DC connector?
54. Which device is used to provide input to DC connector?
55. What is Voltage regulator?
56. Which Voltage regulator is used here?
57. How many legs are there in LM7805?



58. What is input voltage range of LM7805?
59. What is the output voltage of LM7805?
60. Why capacitors are connected to output of voltage regulator?
61. What are capacitors?
62. How capacitor works?
63. What is the behavior of capacitor in ac and dc circuit?
64. What do you mean by charging and discharging of capacitor?
65. What is time constant?
66. What are dielectrics?
67. Why reset button is used in the circuit?
68. On which algorithm smart traffic light works?
69. What are the main reasons of traffic congestion?
70. What are the advantages of smart traffic light?
71. What are resistors?
72. Why resistors are used in series with LEDs?
73. What are color codings of resistor?
74. Which materials are used in the manufacture of resistors?
75. Does Led comes in different colors?
76. How emission of light takes place through Led?
77. How microcontroller decides density of traffic on lanes?
78. What is luminous intensity?
79. What is the unit of measurement of luminous intensity?
80. Where are traffic lights installed?
81. Is the operation of traffic light automatic or manual?
82. What do you mean by green channel?
83. How priority of lanes are decided?
84. Where IR sensors are laid on roads?
85. How density of traffics are decided?
86. Define time sharing algorithm.
87. What is the advantages of smart traffic light over current traffic light?
88. What is the cost of working model of traffic light made?
89. What are the different processes involved in making of this project?
90. What is PCB?
91. What is itching and drilling process?
92. Why sandpaper is used before itching?
93. Which solution is used for itching?
94. How designed circuits are printed on board?
95. How much time is required for itching?
96. What is the use of electric iron or press in making PCB?
97. Distance between legs and pins of component is measured in which unit?
98. What are the challenges to this model?
99. What are the future scope of this project?
100. How the use of this project can be advantageous to the society?



21. SMART STREET LIGHT

1. What does Smart street light means?
2. Why we are doing this?
3. What is present condition of street light in India?
4. How this project conserve Energy?
5. What are all electronic component used in our project?
6. Why we are using LED instead of Normal CFL?
7. How many hours does the street light glows in India.
8. Is this project has been implemented in our country in large scale earlier?
9. What all are the advantages of Smart street light project?
10. Why arduino only works on 5v-9v battery?
11. What is the cost of arduino and other components?
12. How will the lights automatically turn off in day time?
13. How will the lights automatically turn-On in night?
14. Why are we in this Project?
15. How the cars will be detected by this system?
16. Which device will do the same?
17. How it will detect small animals like dogs, cats etc
18. Why till now, this type of project is not implemented by our government?
19. What is LDR?
20. How it works?
21. How its resistance did varies with time?
22. Total cost of the project
23. How big will be our project?
24. How many LDR, IR sensor will be used?
25. Does this Project is Working project or a concept.
26. Why IR sensor is only used?
27. Why LDR is only used?
28. What is arduino?
29. Why only Arduino is used?
30. Does this project cause pollution?
31. How will the project presented to the audience?
32. What is smart Bus stops?
33. How smart bus stops work?
34. Is there any Smart bus stops in India right now?
35. What is its resistance during day time?
36. What is its resistance during night time/dark environment?
37. What material is used to make a LDR?
38. What is the use of LDR in our project?
39. Can't we use LDR in place of IR sensor?
40. How is LDR different from a common resistance?
41. Is LDR a sensitive device?
42. What is IR sensor?
43. Can IR sensor look through window?
44. Can IR sensor look through dust and smoke?
45. Does the sensor have to be aimed perpendicular to the surface?
46. How critical is focusing the IR instrument?
47. How does distance to target affect the IR sensor?
48. How critical is water on the surface of the target I'm sending?
49. How often should IR sensor be calibrated?
50. What is the purpose behind th project?
51. How will the LDR detect day or night?
52. What if a butterfly sits on the LDR?
53. What happens in a cloudy day?
54. What is our planning for rainfall security?
55. How are we detecting vehicles?
56. Will the lights be switched when some insects flew by the sensor?



57. What happens if the sensor will be covered by some leaves or else?
58. What's the plan for slow moving objects as walking people or cattle?
59. If some vehicles stop in between the road what will happen?
60. Is there any kind of accident alarm system?
61. What happens if some anti-social type people will show an accident for loots purposes?
62. What do you think about some special zebra crossing?
63. What is the idea about smart bus stops?
64. Will we require to train some specialist for these system?
65. What is our backup for sudden fault in lights?
66. Where will be this system best in use?
67. What is the plan for the busy roads?
68. Will our project prove beneficial for the roads in greater Noida that are usually vacant at nights?
69. What do you think for drunk drivers?
70. Is there any second option in place of IR sensor
71. What type of wire are you using for arduino connections?
72. What are the specialties of jumper wires?
73. Why are we replacing the roadside reflectors?
74. What specifications will be there for smart bus stops?
75. What is full form of LDR
76. How the resistance of LDR does depends on intensity of light?
77. What are the applications of LDR?
78. What are the applications of IR sensor?
79. What is the role of LDR in camera shutter control?
80. What is a LDR controlled transistor?
81. Why is LDR also called photo resistor?
82. What are the type of LDR available?
83. What is the doping level in an LDR?
84. Tell me about wavelength dependency of a photo resistor?
85. What is the time latency property of the LDR?
86. Why is cadmium sulfide commonly used for making LDR?
87. What is an arduino UNO?
88. Why is arduino commercially available as preassembled form?
89. What type of input will an arduino takes digital/ analog?
90. Why is an USB port given in arduino?
91. By what programming languages the microcontrollers are programmed?
92. What is relay?
93. When did the arduino projects started and why was it started?
94. What are the basic applications of arduino in practical life?
95. What does this word "arduino" means?
96. What was used in place of arduino when it was not discovered?
97. Where was the arduino projects initially started?
98. What is PCB?
99. Why is arduino an open source hardware?
100. What is breadboard?



22. THE THIRD EYE

1. What does HUD stands for?
2. What does an HUD do?
3. What is the working principle of HUD?
4. Why are we making this project?
5. What is head mounted display?
6. What is an embedded system?
7. Why our project is an embedded system?
8. What are the hardware components of our project?
9. What is the software part in this project?
10. What is a microcontroller?
11. What is a microprocessor?
12. What are IC's?
13. What is the difference between microcontroller and microprocessor?
14. What is ALU?
15. What is CPU?
16. What is memory?
17. Difference between RAM and ROM?
18. What is an ARDUINO?
19. Is ARDUINO a microcontroller or microprocessor?
20. What are the types of ARDUINO?
21. Which type of ARDUINO are we using?
22. What is ARDUINO Pro mini?
23. How many pins are there in ARDUINO Pro mini?
24. What is the working voltage for ARDUINO Pro mini?
25. What does VCC and GND mean?
26. Which microcontroller is used in Arduino pro mini?
27. What does atmega328 mean?
28. Which software are we using?
29. How can we program the Arduino?
30. What is compiling and uploading?
31. Which language is used in Arduino software IDE?
32. Why are we using Arduino pro mini?
33. What is a Display?
34. What is LED?
35. Define LCD?
36. What is OLED?
37. What is the difference between led and lcd?
38. Why are we using OLED over LCD?
39. What is the size of OLED?
40. OLED has no backlight, what does it mean?
41. On which protocol does this OLED works?
42. What is the pixel of OLED?
43. What is the working voltage for OLED display?
44. How can we measure the size of display?
45. What is battery?
46. What are the basic types of battery?
47. What is lithium polymer battery?
48. What are the advantages of LiPo battery over other battery?
49. What is the rating of battery that is used in the project?
50. What does the rating of battery mean?
51. Is this battery rechargeable or non rechargeable?



52. What is lithium?
53. What are polymers?
54. What is the process of charging and discharging of LiPo battery?
55. What is cathode and anode?
56. What is cation and anion?
57. What is Bluetooth?
58. Which type of Bluetooth are we using?
59. What is serial and parallel communication?
60. Is Bluetooth a serial comm. Or parallel comm.?
61. What is the frequency at which Bluetooth works?
62. What is baud rate?
63. Is Bluetooth a wired communication or wireless communication?
64. What is the range of Bluetooth communication?
65. Does the Bluetooth require internet connectivity?
66. How many connections can be made using a single Bluetooth device?
67. What is FTDI programmer?
68. Why we require a programmer?
69. What is optics?
70. What is refraction?
71. What are the laws of refraction?
72. What is a lens?
73. What are the types of lens?
74. Which type of lens are we using in the project?
75. What is real and inverted image?
76. What is virtual and erect image?
77. What is reflection?
78. What are the laws of reflection?
79. How a mirror is formed out of glass?
80. Which is the best reflector of light?
81. What is plane mirror?
82. What is convergence and divergence?
83. Why are we using convex lens?
84. Is convex lens converging or diverging?
85. What is the rating of convex lens?
86. What does focal length of a lens mean?
87. What is the projection method of image on transparent glass?
88. What is 3D printing?
89. How does 3D printing work?
90. What is 3D printing used for?
91. What is PCB?
92. What is the purpose of using glass reflector?
93. What is retina?
94. What is the near and far point of normal human eye?
95. What are the major challenges?
96. What are the different fields where it can be used?
97. How it can be used in different fields?
98. What are the advantages of 'the third eye'?
99. What are the applications of this project?
100. What is the future scope of this project?



23. THE BIONIC HAND

1. What is Prosthesis?
2. What is Prosthetic Hand?
3. Who is the developer of latest bionic hand?
4. What is the basic principle of the bionic hand?
5. Explain the working of the model “The Bionic Hand”.
6. Which type of power supply is used?
7. What is battery?
8. Explain different types of battery?
9. Name the cost effective bionic hand that is available nowadays.
10. What makes your project different from others?
11. Who can use it?
12. Who can use your model “The Bionic Hand”?
13. Mention some of the limitations of your project.
14. The outer body is made up of which material?
15. Which software is used to design the hand? What are the limitations of this software?
16. What is 3D printing? Is there any other method to obtain higher accuracy?
17. What is velostat?
18. What is conductive fabric?
19. What do you mean by Arduino?
20. What are generally used microprocessors?
21. What is an EMG Sensor? Is there any alternative for EMG sensor?
22. What are surface electrodes?
23. How many types of IC's are used in your project?
24. Mention some IC's which are used in daily life.
25. Which types of motors are used in your project?
26. Define motor.
27. Why have you used servo motor in your project?
28. How many joints are there in your project Prosthetic Hand?
29. What are pressure sensors?
30. How touch sensor works?
31. Which type of wire is used in your project?
32. How the signals from the body are obtained?
33. Under what conditions the working of prosthetic hand fails.
34. What is the lifetime of the hand?
35. Is your Prosthetic Hand water resistant or corrosion resistant?
36. Is it able to perform all the task? If specific mention.
37. What made u think of this project?
38. What is the weight that can be lifted by your prosthetic hand?
39. Under what circumstances the working of hand fails.
40. Is it temperature resistant?
41. What are the factors that affect the functioning of model?
42. What are some of the curious facts related to the project?
43. Is the attachment of upper limb permanent, if temporary can it be frequently removed.
44. Is there any external injury that the user had to undergo?
45. Name different types of motor. What are generally used motor?
46. What is 3-D printer?
47. on what principle 3-D printer works?
48. What are different types of pressure sensors?
49. Which type of mechanism is used in working model of a finger?
50. Which type of sensors are used in the project?
51. What are different types of sensors?
52. What is potentiometer?
53. What are different types of microprocessors?
54. What is conductivity?
55. What is resistivity?



56. What are different types of filaments?
57. What is a gear?
58. What are different types of gear?
59. What is a bevel gear?
60. Why worm & worm gear are used?
61. Which programming language is used?
62. What is binary language?
63. Different types of filaments used in 3-D printing?
64. Why 3-D printing is done. Any another alternative used?
65. What is gear ratio?
66. What are vibratory motors?
67. What is the principle of vibratory motors?
68. What is torque?
69. What is rpm?
70. Which colour of wire is used in the positive terminal?
71. Which colour of wire is used for the negative terminal?
72. What is direct current?
73. What is alternative current?
74. What is threading?
75. Name different type of nerves?
76. Which nerve is responsible for the movement of palm?
77. Which type of nerve is responsible for the movement of thumb?
78. What is a capacitor?
79. What is a diode?
80. What is the purpose of potentiometer?
81. Define cell?
82. Define tissue?
83. What is the difference between muscle and tissue?
84. Define organs. What are different types of organs?
85. What is the difference between organ and an organ system?
86. What are flexor muscles?
87. What are different types of joints in our body?
88. What is a data? How is it transferred?
89. What is the load capacity that the prosthetic hand can undergo?
90. Define sense organs. How many sense organs we have?
91. Name different types of sense organs?
92. Is your prosthetic hand a clone of your actual hand?
93. What are the key factors that should be kept in mind before using the prosthetic hand?
94. What makes you think of this project?
95. What happens if nerves does not respond?
96. Is it a tedious task to use the prosthetic hand?
97. What are the conditions when the user gets a shock?
98. Is the prosthetic hand able to differentiate between hot and cold water?
99. Can the prosthetic hand cope up with the actual hand?
100. Can the prosthetic hand be used for carrying heavy tasks? What are its limitations?



24. WORLD CLOUD FOR EVENTS

1. What is word cloud?
2. What are mean, median and mode?
3. What is Twitter.com?
4. What do you mean by microblogging?
5. What is python and its uses?
6. How have we used python in our project?
7. What is API?
8. Twitter provides different kind of APIs, which one are we using?
9. Difference between search API and streaming API?
10. What kind of data are we using in the project?
11. What is the difference between Twitter and other social media sites?
12. What do we understand by hashtag used to collect data from Twitter?
13. Why is there a limit in collecting data using API?
14. What all comes under the category of text data?
15. Why are we only using text data and no other kind of data?
16. What is the purpose of this project?
17. What is the role of math's in this project?
18. What kind of hardware will be required to take this project at a higher scale?
19. Is continuous internet required for this project?
20. Why is Twitter so popular?
21. Why did we choose Twitter as our data source?
22. What do you understand by data source?
23. On what basis are we selecting our data source?
24. What is new in our project?
25. What is the working principle of our project?
26. Why is it called word cloud for events?
27. How long would a naïve person require to make this project from scratch?
28. What stream should I pursue in my higher classes to take up computer science engineering?
29. What is the difference between a Facebook post and Twitter tweet?
30. What is an HTTP request?
31. Why is the length of tweet 280 characters?
32. How are we collecting tweets?
33. How and where are we storing the collected tweets?
34. Why does other social media sites does not allow data collection?
35. How does tweet help in formation of word cloud?
36. What role does Python play in this project?
37. How is Python useful for me?
38. How does python work in general?
39. How can a student like me start to learn python?
40. How does one start to program in python?
41. What does Twitter Search in python stand for?
42. What do you mean by cuss words?
43. How can we control the use of cuss words in our project?
44. Why do we Import Time * statement in our code for data extraction?
45. What does data extraction mean?
46. Why do we need to extract data?
47. What is it design principle?
48. What's the role of Statistics in this project?
49. Define Statistics?
50. Why should one learn statistics when he or she is becoming a computer science engineer?



51. Why are we causing a delay in the running of code?
52. What is exception handling?
53. How is it being used in our program of data extraction?
54. What are loops?
55. Which loop are we using in our project?
56. How is it different from other kind of loops?
57. What are classes in python?
58. What are functions in python?
59. Differentiate between classes and function in python?
60. What is the role of the file 'OUTPUT.txt'?
61. What do you mean by 'R'?
62. How is R programming language different from python?
63. Why are we using R for data visualization?
64. What is data visualization?
65. What is the role of data visualization in this project?
66. Why do we need data visualization?
67. What kind of data visualization are we using in our project?
68. What are libraries in R?
69. Why do we need libraries in R?
70. What all libraries are being used in this project?
71. Explain tm, wordcloud and memoise library?
72. What does a framework mean?
73. What do you understand by shiny framework?
74. What all frameworks does R support?
75. Why are we using shiny framework?
76. What are the advantages of shiny framework?
77. What are the disadvantages of shiny framework?
78. How does shiny works?
79. What do you understand by Ui.R, Server.R and Global.R?
80. Why do we create 3 files rather than creating a single file?
81. If one file, go missing will the functioning of the project be affected?
82. Why do we see different colours in the wordcloud?
83. How will this project be beneficial to the society?
84. What is the role of libraries in our program?
85. Why did we not visualize data using Python only?
86. Why did we not collect data using R only?
87. How did we connect Python and R together?
88. To practice my coding skills should one study R or Python?
89. Which helps in better understanding of statistics R or Python?
90. When should one learn R and when should one learn Python?
91. Which is better Python or R?
92. How can we download Python to learn and practice?
93. From where can we download R and learn about it?
94. Do we have to pay for their downloads?
95. What do u mean by open source?
96. Is it safe to use open source software?
97. How many tweets can we get from Twitter in one go?
98. Is the delay function used so that we get data from Twitter without any restrictions?
99. What kind of restrictions can Twitter impose on us if we exceed the data limit repeatedly, despite their warnings?
100. What other ways are there for data extraction other than use of API?



25. CABRIOLET VECHI-EEE

1. What is the meaning of 'Cabriolet Vechi-EEE'?
2. What is a tongue – controlled drive?
3. From where we get this idea?
4. What are current and voltage?
5. What is the difference between Electrical and Electronic devices?
6. What is a switch?
7. What is a sensor?
8. What is Hall Effect?
9. Why it is named as Hall Effect?
10. What is the working of Hall Effect sensors?
11. How the Hall Effect sensor senses the presence of magnet?
12. What are magnetic field lines?
13. What is magnetic flux?
14. What is force?
15. Difference b/w a cell and a battery?
16. How does a battery get charged?
17. Why the battery has two terminals?
18. What are microcontrollers?
19. What is the difference between microcontroller and computer?
20. What is the meaning of AVR?
21. Why are we using the AVR microcontroller?
22. How we burn the code in ac IC?
23. Why we are using a 40 pin microcontroller only?
24. What is the function of AVR microcontroller in our project?
25. How does the microcontroller give the directions to the motor?
26. On which voltage we are working?
27. Is the magnet placed on the tongue is harmful?
28. How does a motor works?
29. Why magnet present in the motor?
30. How does current flow in the wire?
31. What is DC current?
32. What is AC current?
33. Why DC is not used in the home?
34. How to covert AC to DC?
35. What is the process to convert DC to AC?
36. How the inverter at our home works?
37. Does an inverter give a pure AC signal?
38. What are types of DC motors and their applications?
39. Give some examples of AC motors?
40. Why DC motors are used in our project?
41. How electricity is generated?
42. By how many ways electricity can be produced?
43. What is the difference between renewable fuel and non-renewable fuel?
44. Can we charge our battery with help of solar energy?
45. How to distinguish between an AC and a DC motor?
46. What are windings?
47. What are the functions of field winding and armature winding in a DC motor?
48. Why a magnet is present inside a motor?
49. What is DC motor?
50. What is the working principle of the DC motors?
51. Why our project using a DC series motor?
52. Why the motor heats up after some time?
53. Why a motor cannot work on 100% efficiency?
54. What is a relay?
55. How does a relay works?
56. Why the project uses a tongue to drive the vehicle?



57. Can we control the vehicle by our hand or any other part of body also?
58. Can we use this drive to fly an aeroplane?
59. How our project is better than other available alternatives?
60. For whom we are making this project?
61. Who has the benefit of this project?
62. What is meant by the word 'Divyang'?
63. How many types of disabled persons can use this vehicle?
64. How to place the sensors near the tongue?
65. How to control the speed of the vehicle?
66. What are the different methods to control the speed of a DC motor?
67. What is the Voltage Control method to regulate speed of a DC motor?
68. What is a transformer?
69. What are the types of transformer?
70. Why we need to do AC to DC conversions?
71. Why transformer does not work with DC?
72. Why we have not made a wheelchair?
73. What all safety features involved in the project?
74. What is GSM?
75. What is GPS?
76. Why we need to implement the GSM-GPS in the project?
77. Where the SIM is placed in GSM module?
78. What all information a GPS module can provide?
79. What is the need to install a Web Camera?
80. Is the Web Camera having bidirectional voice communication feature?
81. What features can we implement to attach a health kit?
82. By which sensor temperature is measure?
83. What is a code?
84. How do we do coding in the microcontroller?
85. What is software?
86. Which software do we use for coding?
87. What is C language?
88. From where we get electricity?
89. Why we are not using AC power in our project?
90. Can we use AC power for the project as it is easily available?
91. How the tongue is controlling the vehicle (movement of tongue)?
92. What is the work of microcontroller in the project?
93. How microcontroller works as a BRAIN in the project?
94. What does sensor do in tongue control drive?
95. What is the role of magnet in tongue control drive?
96. What is an electron?
97. What is an atom?
98. How we can use the project for the blind person?
99. What is ultrasonic sensor?
100. How we drive the vehicle in left, right and forward direction?



26. AUTOMATIC REFRIGERATOR

1. How does the project work?
2. What is an Arduino?
3. Does this project does eliminate human efforts, how?
4. What are ultrasonic sensors?
5. How does an ultrasonic sensor work?
6. When would I use an ultrasonic sensor?
7. What are the limitations of ultrasonic sensors?
8. Why only ultrasonic sensors are used?
9. What environmental conditions affect an ultrasonic sensor?
10. Why do I need to let my ultrasonic sensor warm up before I operate it?
11. Are ultrasonic sensors slower than photoelectric sensors?
12. What sorts of targets should I avoid when using an ultrasonic sensor?
13. Why are we using Arduino?
14. What input supply is given to Arduino?
15. What is the output of Arduino?
16. What is a micro switch?
17. Why a micro switch is used?
18. Does moisture affect or damage Arduino?
19. What will happen if micro switch is not used?
20. Is there any replacement for micro switch?
21. What are the types of Arduino board?
22. What is Lab view front panel?
23. To what level is the water bottle filled inside the fridge?
24. What is relay board?
25. What will happen if relay board is not used?
26. Are the components like Arduino, relay board, ultrasonic sensors easily replaceable?
27. Which programming language is used to program Arduino?
28. What are the applications of this project?
29. How much cost will be involved in its making (excluding the cost of refrigerator)?
30. Can it be used in any type of refrigerator?
31. To which pin sound sensor is connected to the Arduino?
32. What do ultrasonic sensors measure?
33. What is your benefit in creating this project?
34. Had anyone else worked on it before?
35. Does it provide purified water?
36. What if we directly connect tap water pipeline to refrigerator, replacing water purifier?
37. What are the other projects in which Arduino can be used?
38. Can this mechanism malfunction?
39. Does the temperature affect the working of sensors and Arduino?
40. What type of current do we obtain in our homes?
41. What type of current do we need for the project to run?
42. Where are ultrasonic sensors used?
43. How far can ultrasonic sensors measure?
44. How do I select the right sensor range for my application?
45. How accurate are Ultrasonic sensors?
46. Can ultrasonic sensors be used to protect the life or safety of people?
47. How wide is the ultrasonic beam?
48. Is the ultrasonic beam dangerous for humans?
49. What happens if the ultrasonic beam hits other objects?
50. How easy are sensors to install?
51. How do I maintain my ultrasonic sensors?



52. Do I need a computer to use these sensors?
53. How does relay board connections take place?
54. How does sound sensor measure the water level?
55. What is need of water tank?
56. What is use of water supply?
57. How does water supply take place?
58. What is need of water purification?
59. How does water purifier connected to water tank?
60. Maximum and minimum limit of water stored in water tank is?
61. Can the bottle be filled above the pre-fixed level?
62. What is the cost of Arduino board?
63. How does water gets into the water bottle?
64. Which pump is used?
65. What are the specifications of the pump?
66. What is the life of ultrasonic sensor?
67. What the LED's of ultrasonic sensors signify?
68. Can the refilling water level can be changed?
69. Can the ultrasonic beam pass through bottle without refraction?
70. What happen if we place completely filled water bottle?
71. Can we control the water flow rate during refilling?
72. What is a breadboard?
73. What are the internal connections in breadboard?
74. Does this mechanism saves water wastage also?
75. What is the water flow rate, during water filling in bottle?
76. What is the maximum size of water bottle can be used (neck diameter and length of bottle)?
77. Power required to operate Arduino board?
78. Which kind of DC plug is used to operate Arduino board?
79. What happen if power cut happens during refilling process?
80. Will the refilling process continue after electricity is back?
81. Can we give input to this control unit by a separate DC battery?
82. What voltage battery is sufficient?
83. Does 9V battery work?
84. Is there any chance of getting electric current in water?
85. What is the final output of "AUTOMATIC REFILLING OF WATER BOTTLE SYSTEM"?
86. How does connection carried out?
87. Does sensor working depend on fridge's door opening and closing process?
88. Can this system fill pre half-filled water bottle?
89. Can this system use to fill multiple bottles at a time?
90. What will be the further modifications or advancements possible in this system?
91. Can this system be used for any other Refrigeration system?
92. Does cooling of refrigerator create any effect on the working of ultrasonic sensor?
93. Basic program used to refill bottle using Arduino system?
94. Can the program be changed or edited in Arduino?
95. Why different color connecting wires are used?
96. Why red color wire is used for positive terminal of the supply?
97. What kind of commands are used in programming?
98. From where did you get the idea of this project?
99. Can we use it to re-fill ice-tray?
100. Possible future scope of this project?





Anveshan

BUILDING BRIDGES TO DISCOVER
SCIENCE & ENGINEERING FAIR

