1. **Demonstrate the each design process using the example given below. Choose example Roll no wise**

| 1 | Sound Pollution is high at various spots in the city. Need is to control it. For control we need measurement. How can this be done at low cost with a suitable product? |
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| 2 | Want a good umbrella that can be folded and kept in the pocket immediately after use in the rain.(non wetting) |
| 3 | Need to segregate bio-degradable and non bio degradable wastes. |
| 4 | Need a machine to wash and iron the clothes. |
| 5 | Need to connect different size hoses to different pipe sizes with one connector(Universal connector) |
| 6 | Seamless travel card to be used in all modes of city and urban transport. |
| 7 | Elderly persons want assistance in for walking in the room at night. |
| 8 | School children have to carry extra heavy bags daily to school. Design an alternative for school bags to carry the heavy book loads. |
| 9 | Fans run in the night at full speed even though the temperature has come down. |
| 10 | Modify the design of a cloth hanger to increase its usability and marketability. |
| 11 | Reduce the fatigue of head load workers. |
| 12 | Scooters are not comfortable to travel in rains. How to make it comfortable in the rain? |
| 13 | Water bottles that can be opened with one hand. |
| 14 | Drinking water is scarce in coastal area as the ground water becomes saline. |
| 15 | Black board erasing is not healthy and proper due to the dust from the duster. |
| 16 | Traffic lights cannot accommodate varying pattern of traffic during the day. |
| 17 | Intelligent traffic signs that alerts the driver by displaying the details on the dash board. |
| 18 | Pedestrians are more in our cities. Can one use the energy spent by them for some useful purpose? |
| 19 | Need to verify the quantity of cooking gas in a cylinder. |
| 20 | Design a screw which can be tightened only. |
| 21 | Roads and drains stink due to many reasons. Can this stink be reduced? |
| 22 | Drivers do not dim the head lights when facing another vehicle in the night. |
| 23 | A simple device that can be used to write on touch screens with ease. |
| 24 | Need a simple rubber tapping device for use by the unskilled. |
| 25 | An emergency hand charger for mobiles. |
| 26 | A device for automatically positioning solar panels against the sunlight, irrespective of the seasons. |
| 27 | Painting of high rise building is risky. Want a method that is safe and economical. |
| 28 | It is difficult for the disabled to move about in the train compartments and corridors. |
| 29 | The energy spent on fitness machines is wasted. |
| 30 | Chairs with one centre leg save material. Can such designs be used for auditoriums? |
| 31 | There is still water in waste water. How to tap it? |
| 32 | Waste paper for innovative application? |
| 33 | Read Electricity meters remotely and transmit the details. |
| 34 | Need an Ink that disappears after few hours from the paper so that the paper can be reused. The written matter can be copied when the ink is visible. |
| 35 | Remote plucking of coconuts. |
| 36 | Need a bike that can be peddled forward or backward. |
| 37 | Need Mobile charging ports in bikes and cycles. |
| 38 | Chalks used on black boards are thrown out before they are used fully due to the difficulty in holding or due to breakage. |
| 39 | Use of electricity as a prepaid service. |
| 40 | A simple device or app for one to know the speed of any moving vehicle, from outside. |
| 41 | Mobile charge which use renewable resource for charging |
| 42 | Method for reducing heating of vehicles parked in sunlight |
| 43 | An alternative for college ID which students forget |
| 44 | A new design for window |
| 45 | A new design for class room |
| 46 | Automatic animal feeder system |
| 47 | A new travel bag |
| 48 | Design a dining room for school to reduce crowd |
| 49 | Water bottles that can be opened with one hand. |
| 50 | Suggest design changes for a torch (with sketch) that can add value to it and improve its efficiency. How these modification reflect on market |
| 51 | A portable electric guitar |
| 52 | A new toilet for a building |
| 53 | Describe the concept of generating design alternatives and choosing a design  through designing a face mask with the help of sketches |
| 54 | Illustrate the design thinking process through designing a walking stick for  elderly people |
| 55 | Design a parachute mechanism for safe landing an egg which is dropped from a  height of 3 meters using iterative design thinking process with the help of  sketches |
| 56 | Design modifications for a nail cutter to avoid nails falling on the floor while cutting |

**57 Design of a woman's wallet**

**58.Design of wardrobes**

**59.Design of playhouse for kids**

**60.Design of lamp for bedroom**

**61.Design of various staircase alternatives**

**62 Design of machine used for medical data collection of bed ridden patients**

**63.Design a machine to collect the readings in a farm**

**64.Design alternatives to teach in kindergarten**

**65.Design a machine to save the people from areas where rescue is not possible**

**66.Design a machine that is used for cleaning purpose**

**67.Design to prevent driver drowsiness.**

**68.Design various sanitizer dispensers**

**69.Design fire extinguishers**

**70.a machine to clean kitchen utensils, dry it**

**71.design an extension box**

2.**.Graphically communicate the design of a thermo flask used to keep hot coffee. Draw the detailed 2D drawings of the same with design detailing, material selection, scale drawings, dimensions, tolerances, etc. Use only hand sketches**

**3.Come up with as many alternative uses for products listed as you can using divergent thinking**

**1.Bookmark**

**2.. Paper clip**

**3..Pen**

**4.Fork**

**4.Conduct a survey among daily cycle users/riders and find their suggestion on how to better the experience. After the survey define the goals to be met to better the riding experience of cycle. Develop idea about the plausible solutions of exercise 5 and list/draw various ideas.**