**Circuitiesta**

**Event Focus:**

***Circuitiesta*** *is an event where the participants get the opportunity to show off their understanding and skills in designing circuits. The event encourages the participation of all those students, irrespective of their streams, who fantasize the art*

*of making circuits.*

**Event Synopsis:**

*This will be a group event with maximum 2 participants in each group.This event will consist of three rounds.First two rounds will be the elimination round and the last round will be the deciding round.*

* *First round consists of 30 MCQ type questions with 1 mark per question. Allotted time for the MCQ round will be 20 minutes. There will be no negative marking in this round and the elimination will be done as per the total marks obtained by the groups. In case of any tie, the group submitting answers in lower time will get priority.*
* *Second round will also an elimination round where the groups will be given problem statements and they have to physically make those circuits on the bread boards provided and with the given components. Allotted time will be 1 hour. The group finishing first will get higher priority than the others.*
* *Third round is the deciding round where the groups again have to make a circuit for a certain problem statement. This circuit will be a non-regular and tricky circuit.The group which finishes first wins the event.*

**Challenges:**

*This event will be focusing mainly on the basic ideas of circuit design. The participants are expected to learn and by heart the use of various ICs, components and some basic circuits. No need to bother about the specifications of the components as they will be provided after thorough testing.*

**Outcome:**

*Through this event, the participants will get an insight about the importance of basic circuits and also get an idea about the general as well as innovative use of these components.*

**Help:**

*Volunteers will be required during the event for maintaining proper discipline and to restrict any use of unfair means. Also, some help is required in organizing the event space and in purchase of the required materials.*

**Target Participation:**

*As per previous years data, the target participation will be around 30 groups.*

**Sample Questions:**

**Round 1:**

*1. If 1A current flows in a circuit, the number of electrons flowing through this circuit is-*

*(a)0.625\*10^19 (b)1.6\*10^19*

*(c) 1.6\*10^-19 (d)0.625\*10^-19*

*2.The resistivity of the conductor depends on-*

*(a) area of the conductor. (b) length of the conductor.*

*(c) type of material. (d) none of these.*

**Round 2:**

1. *Make circuit of NAND gate using transistor and verify the truth table.*

**Round 3:**

1. *Make a design of any type of filter and show the output response in CRO. All necessary components will be provided to you.*

**Requirements:**

|  |  |
| --- | --- |
| **Components Name** | **No. of pieces** |
| 1. *7400 (NAND Gate)* | *15* |
| 1. *7402 (NOR Gate)* | *15* |
| 1. *Bread Board* | *15* |
| 1. *Wire (Single core dc wire for bread board)* | *10 Meter* |
| 1. *Battery ( 9V)* | *30* |
| 1. *Diodes (IN4007)* | *50* |
| 1. *LED (5mm)* | *30* |
| 1. *Toggle switch* | *30* |
| 1. *Resistances (10 ohm)* | *100* |
| 1. *Digital multimeter* | *2* |
| 1. *Wire cutter* | *2* |
| 1. *Insulating tape* | *1* |
| 1. *Fevicol* | *1 Bottles* |
| 1. *A4 sheets* | *50* |
| 1. *Op-Amp* | *10* |
| 1. *Capacitance* | *30+* |
| 1. *CRO* | *7* |
| 1. *Tweezer* | *15* |
| 1. *Chip Holder* | *30* |