Electromania

Points: 40
Event Type: Medium Prep Team Event

Preamble:

The event will be a 2 stage event where one part will be conducted before the mid-semester exam and one after. The evaluation will also be 2 staged. The competition will be focusing on developing an all-round electronic skill using logics and ICs correspondingly. The problem statements are designed so as to help you develop high-end project skills starting from solving basic problems. The secretaries of the corresponding halls will be the immediate point of contact for any doubt or reference.

For proceeding to stage II, the teams have to first complete the Stage-I i.e. the Prelims. Stage I submission is on 8th September. The teams qualifying the first round will proceed to stage II of the event that will be conducted after the Mid Semester Exams (Final dates will be communicated).

Problem Statement:

Stage 1:

Build the circuit for a countdown timer which will notify the user after the pre-set time has elapsed. One can also build an alarm clock as a sub-part but will then be awarded points accordingly.

The problem Statement for Stage 2 will be released after Stage 1

Team Structure:

- Only **Y19** are allowed to participate.
- Maximum **5 members** are allowed per team. All the members of a team should belong to the same pool.

General Rules :

- The participating team must necessarily register themselves for the event.
- There can be any number of teams from each pool.
- You will be issued components only after you have submitted an abstract of your idea.
- The teams must adhere to the spirit of healthy competition.
- Judges reserve the right to disqualify any team indulged in misbehavior.
- In case of a tie, the judge's decision will be final.

Problems (You can attempt only one)	Points
Single-digit up-counter (Alarm Clock)	20
Single-digit down-counter (Countdown timer)	40
Double-digit up-counter (Alarm Clock)	50
Double-digit down-counter (Countdown timer)	80

Additional Judging Criteria	Points
Setting multiple time (without touching wires of the circuit)	30
Resetting of Timer after the set time	20
Accuracy of the timer	10
Good Bread-Boarding Practices and Circuit Design	10

- In case of any dispute, the judge's decision would be the final decision.

Tasks and Constraints:

- Only non-programmable IC's can be used.
- You have to make your circuit on breadboard.
- Use of any micro-controller is prohibited.
- It is **compulsory** to use the seven-segment display in your circuit to display time.
- You have to display the time elapsed (in seconds) on the seven segment display in case the timer is an up-counter and time left (in seconds) in case of down counter.

Important notes:

- The score of Stage 1 will be **added** to the score of Stage 2 to make the final score-sheet of Electromania.

Qualification in the next round is subjective to the overall performance in competition and can be based either on performance in the pool or overall score-sheet.