



## Analog Circuit Design

### **Introduction:**

“We live in a digital world but we are fairly Analog creatures - Omar Ahmad”. Analog electronics offers a very elegant design with many components and would act as an impetus to the digital world. The modern electronics technology will play an ever-increasing role in the quality and variety of our lives. It is very necessary to realize the importance of Analog electronics. We here at Wissenaire'21 will give you an opportunity to test your knowledge in the field of Analog electronics.

### **Event description:**

Analog electronics constitutes of basic elements like Resistors, diodes, transistors (like BJT and MOSFET) and Op-Amps with which many circuits like amplifiers, filters, clippers, clammers are built. Here we will test your understanding on these Analog circuits and off-course basic fundamentals.

### **Event format:**

Participants will be given a design experiment where they have to design a circuit and simulate it in the “LT spice software” and results with screenshots of LT spice schematic and required graphs should be attached in the final report.

- Every participant is provided with some specifications for every experiment, where they have to calculate some values and then build a circuit and finally simulate it.  
Ex: If for a low pass filter, 3dB cut-off frequency is given as 10Hz, and if it is mentioned that one can take capacitance value in the interval  $[10\mu\text{F}, 100\mu\text{F}]$ , R can be determined and then these values should be given as component values when doing simulation in LT-spice.
- Participants after completing the simulation should save the graphs and also schematic diagrams along with some brief explanation about the experiment, the results they got should form a final report.
- Along with all the things asked to submit in the previous point, participants should also answer some questions (like one or two lines) related to the experiment, given in the question paper at the time of event and should include them in the final report.

### **Rules and regulations:**

- Each participant is allowed only once to appear for the event.
- Everyone should confine to their given specifications unless one is left free to assume certain values.
- The final report should be made very concisely (whatever is asked answer that).



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- No extra time is provided, even though it is done online, participants are expected to utilize the time wisely for doing simulations and making a final report.

**Eligibility Criteria:**

Participants from any branch of engineering who is familiar with Analog electronics and LT spice software can participate in the event.

**Contact Details:**

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