

Question S2:

Photos below show four different types of probes you can find in an electronics lab. Which instrument uses them and what type of measurement is each of them used for?



Probe to measure differential voltage ✓



Probe from an oscilloscope you can measure the phase and the voltage



Probe from an oscilloscope



Probe to measure the voltage

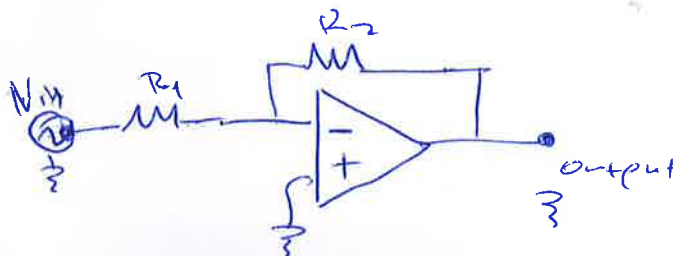
0.5/2

Question S3:

This question is to test your experience in designing circuits and working with real components. Please sketch a principal schematic diagram of a small signal amplifier, AC coupled, working frequency 10 MHz and a gain of 1000 (linear). Use any component of your choice (transistors, operational amplifiers etc.) but consider their real parameters and limitations. You don't have to calculate exact values of the components but write the reasons for your design choices and indicate typical limitations you have to consider.

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with that circuit I can control the input and output resistance, so I can control the gain




Question D4:

Name at least 3 families of digital logic circuits with their characteristic parameters (e.g. typical voltages, maximum speed, quantitative power consumption etc.)

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Question S1:

Please identify the attached components in terms of the component type, package size and feel free to add other typical parameters you can tell without reading the detailed data-sheet.



X capacitor

X impedance

✓ gates



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X BNC