BOĞAZİÇİ UNIVERSITY

Physics Department

PHYL201 Applied Exam-1: AMMETERS

Fall'26 **Duration: 30 minutes**

TOTAL SCORE
/ 6

Name & Surname: _____ **Student ID:** _____

Lab Section: _____ **Table #:** _____ **Date:** _____

ATTENTION!

Your exam will be graded **STRICTLY** based on the final answers written inside the designated boxes. **However, if your answer is correct, your calculation sheet will be checked to verify your work. Correct answers without supporting valid calculations will receive NO credit.** You MUST include the correct **values**, **significant figures (sf)**, and **units** to get full credit.

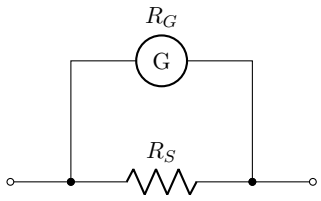
Device Specifications & Initial Measurements:

Read the values below from your device and note them down before starting your calculations.

Galvanometer #: _____ $R_G =$ _____ $I_G =$ _____ $I_R =$ _____

Constant: $\rho_{cw} = 1.34 \times 10^{-3}\ \Omega/\text{cm}$

Q-1) Ammeter Construction (Internal Circuit is given below)



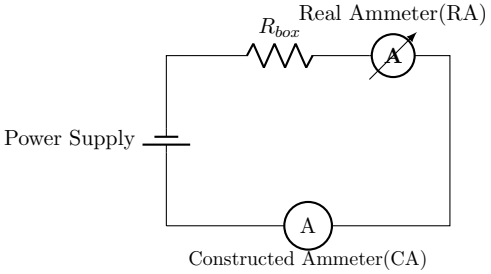
Calculate the Shunt Resistance (R_S) and the required Length of the Copper Wire (L). Please use the extra blank sheet provided for your calculations. Write your final answers in the boxes below.

(1.5 pt) $R_S =$

(1.5 pt) $L =$

Q-2) Testing the Constructed Ammeter (Test Circuit is given below)

Construct the ammeter by cutting $L + 2.0$ cm of copper wire and connect it to the galvanometer. Test it in the circuit below, setting R_{box} to 2 or 3 ohms. Use the **500 mA** scale of the Real Ammeter.



Read the values and calculate the percentage error.
(Pay attention to significant figures and units!)

(0.5 pt) $G_x =$

(1 pt) $I_{CA} =$

(0.5 p) $I_{RA} =$

(0.5 p) $R_{box} =$

(0.5 pt) % Error =

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EXTRA CALCULATION SHEET

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