Detection Circuit

ENGR 1182.03
Lecture
Learning Objectives of Lab

- Students will learn about –
  - Electronic circuit components
  - Building the binary voltmeter circuit from a schematic drawing
  - Troubleshooting electronic circuits
  - Binary numbers and binary-decimal conversion
Binary Voltmeter Calibration Circuit

DMM

0 to +5 VOLTS

10K POT

LEDs

SHORT WIRE

BINARY DISPLAY

D7 (MSB)

V Input

Gnd
TASK 1 - Check the Breadboard Setup

Connect to 5 v. Power Supply

Measure the Power Supply Voltage,
\[ V = \underline{\text{______}} \text{ Volts} \]
TASK 2 - Binary Voltmeter Circuit

- Insert Binary Voltmeter Board
- Insert eight LEDs
- Connect Gnd on Binary Voltmeter Board to Ground on Breadboard.
- Connect the DMM Positive wire to V Input
- Connect a wire from Vinput first to +5 Volts and then to Ground. Verify all LEDs turn on and off respectively.
TASK 3 – Binary Voltmeter Calibration Circuit

- Place the TrimPot as shown and:
  - Connect Pin 1 to Ground
  - Connect Pin 3 to +5 V
  - Connect Pin 2 to V Input on the Binary Voltmeter
Use the *Lab Procedure Document* for detailed instructions!
# Calibrate the Binary Voltmeter Circuit

## Worksheet A

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<th>Volts</th>
<th>Binary Number</th>
<th>Decimal Value</th>
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DAD Verification

Fluorescein Detection Circuit

Check DAD - Polarity is critical. Have instructors check.