Electronics Worksheet

1. What are the three required parts of any circuit? Give one specific example of each.

   a.
   b.
   c.

2. 1 Amp = 6.24×10^{19} electrons move through a wire every second.

3. What is the equation for Ohm's law? $V = I \times R$

4. Prefixes.

Nano (n)	Micro (μ)	Milli (m)	Kilo (k)	Mega (M)	Giga (G)
10^{-9}	10^{-6}	10^{-3}	1000	10^{6}	10^{9}

5. Fill in the table.

Component	Schematic Symbol	What it does?
Fixed Resistor		• Resistance (Ohms Ω) • Tolerance (% of nominal value) • Power rating (watts)
LDR		• Light Department Resistor • The resistance changes as intensity of light changes.
Capacitor (polarized)		• Capacitors store charge • Pass high frequency and Block D.C • One end is + one is −.
Capacitor (non-polarized)		• Capacitors store charge • Pass high frequency and block D • Does not have a positive or negative port.
Diode		• Restricts current in one direction • Some give out light (LED) • Others maintain fix voltage.
LED		• Light emitting Diodes • Type of diodes designed to emit light • can be visible or IR. • 2V voltage
Ground		• Ground in the power distributor grid litterally "the ground" that's all around you when you are walking outside • All circuits must complete the circuit by returning to "−" side of the circuit • A ground completes all circuits by "grounding" flow of electricity

6. Write down the colour code values below from 0 to 9. Tolerances are: Gold = 5%; Silver = 10%; No fourth band = 20%.

0	1	2	3	4	5	6	7	8	9
Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White