Practice Test answers
(Rough copy :))

1. C   2. A   3. D   4C   5A   6 D   7 B

8 A   9 C   10 C   8. B
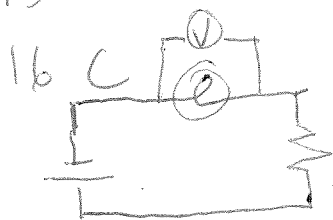
11.

12. B

13. A

14 G

15 E

16 C

17.

18 a $R = \dfrac{V}{I} = \dfrac{9}{0.3} = \boxed{30\,\Omega}$

b) $I = \dfrac{V}{R} = \dfrac{16}{2500} = .0064\,A$

$= 6.4\,mA$

19. Connect the load in series with the battery and ammeter using the connecting wires. Measure the voltage of the battery, use the ammeter to measure the current then calculate resistance using $R = \dfrac{V}{I}$.

17. When light bulbs are connected in parallel, there are more 2 pathways for the current to flow through. When one pathway is blocked (burnt out light) the current can still flow through the 2nd pathway.
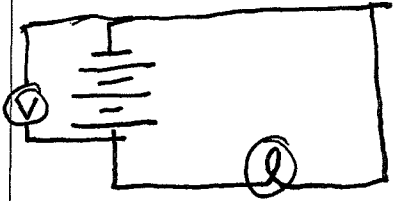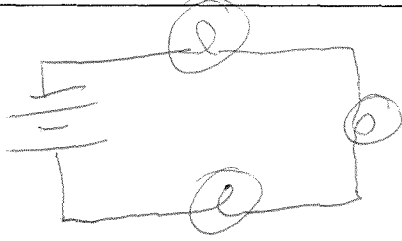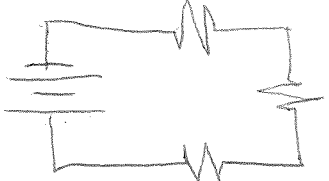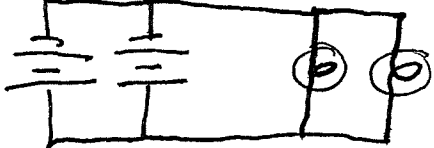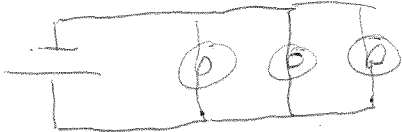
	Voltage	Current	Resistance
AKA in your own words.	The amount of energy the e- have – how bright can they make the light bulb.	how many electrons + how fast they are going.	Anything that slows down the e- and converts electricity to another form like heat or motion.
Official definition	The potential difference in energy between two points in the circuit.	The amount of charge (electrons) flowing through the circuit in a period of time.	A calculation of how difficult it is to pass an electrical current through a conductor.
Abbreviation	V	I	R
Device for measurement.	Voltmeter	Ammeter	Calculator – not directly measured.
Unit of measurement and abbreviation.	Volts (V)	AMPS or amperes (A) x1000 (mA) milliamps	Ohms (Ω)
Mathematical definition	$V = IR$	$I = \dfrac{V}{R}$	$R = \dfrac{V}{I}$
Describe using an analogy e.g. (water in a stream)	How much energy do the cars have eg. are they very fast = higher voltage.	A six lane highway = more cars (with a speed of 100 km/h) has a big current vs a single lane country road with a limit of 60 km/h	like when 4 lanes on the highway have to merge into 1 lane.

Here is an excellent article with more details for you: https://learn.sparkfun.com/tutorials/voltage-current-resistance-and-ohms-law

		Voltage	Current	Resistance
Series	Example circuit drawing			
	Explain	.There are 3 cells in series.	There are 3 light bulbs in series. Each will be quite dim.	There are 3 resistors in series - each one adds more resistance
	Calculate	$V_T = V_1 + V_2 + V_3$	Current stays the same	$R_T = R_1 + R_2 + R_3$
Parallel	Example circuit drawing			
	Explain	Voltage stays the same. Adding cells in parallel doesn't increase voltage	There is one battery. 3 lights in parallel. Each light will be quite bright.	Adding resistors in parallel decreases resistance and increases current
	Calculate	Voltage stays the same	$I_T = I_1 + I_2 + I_3$	$R_T = \dfrac{R}{n}$ ← the number of identical resistors