ELT 101: Basic Electricity: AC/DC

Unit 4 Exam: Electrical Measurements

NAME_____

DATE _____

Circle the most correct answer (2 points each for a total of 44 points)

1) When making a voltage reading, the meter is connected in line with the voltage source.

A. true

B. false

2) When measuring current, the ammeter is always connected across the circuit.

A. true

B. false

3) Current is measured with a(n):

A. voltmeter

B. wattmeter

C. ohmmeter

D. ammeter

4) When measuring the resistance of a resistor, the ohmmeter is placed:

A. in series with the voltage source

B. across the resistor

C. in series with the resistor

5) When measuring current:

A. the voltage must be turned off

B. the meter is connected across the load

C. the meter is inserted into and becomes part of the circuit

D. the meter is connected across the voltage source

6) When measuring a current that is unknown, what is the best plan to make this measurement?

A. use the lowest current setting first and then move to the next largest

B. use the highest current setting first and then move to the next lowest

7) Autorange on a digital multimeter means:

A. the meter selects the best scale for the measurement

B. you must select the appropriate scale

C. the meter selects the correct measurement type

D. the meter beeps and turns off when not in use

8) A circuit has a battery and a resistor load across it. You place the meter leads across the battery, what are you measuring with your multimeter?

A. load voltage

B. current

C. load resistance

D. AC voltage

9) A DMM is a:

A. digital micro-ammeter

B. dynamic multi-meter

C. digital multi-meter

D. none of the above

10) Why is measuring voltage with a meter set to read current so dangerous?

A. because you have to break the circuit

B. because you're effectively placing a short across the point to be measured

C. because voltage can kill you, current can't

D. because measuring voltage is more difficult than measuring current

E. none of the above

11) Circuit ground: (check all that apply)

A. is only used for testing a circuit

B. is only used as a voltage measuring (reference) point

C. is usually the positive voltage reference point

D. is usually the negative voltage reference point

12) On a piece of electronic equipment's power plug, what is the purpose of the third (round) prong?

A. it is not necessary if the equipment has a metal case

B. provides a path to ground and grounds the equipment case

C. provides power to the device it is connected to

D. provides a ground for digital circuits

13) When measuring the voltage across a load, the voltmeter is always connected:

A. across the voltage source

B. in series with the voltage source

C. across the load

D. in series with the load

14) When measuring load current, the ammeter is always connected:

A. across the load

B. in series with the load

C. in series with the voltage source

D. across the voltage source

15) You have turned off power to a circuit, isolated the component, and then make a measurement with a known good ohmmeter. The reading:

A. will sometimes be correct

B. will always be wrong

C. will always be correct

D. must be made with the power on

16) In a shorted circuit, the voltage across the short would be:

A. normal

B. very high

C. very low

17) In a shorted circuit, the current through the short would be:

A. very high

B. normal

C. very low

18) In a shorted circuit, the resistance of the short would be:

A. very low

B. very high

C. normal

19) In an open circuit that is powered, the voltage across the open would be:

A. equal to the source voltage

B. high

C. low

20) In an open circuit, the resistance of the component that is open would be:

A. zero

B. normal

C. high

D. infinite

21) In an open circuit, the current through the open component would be:

A. low

B. high

C. zero

D. normal

22) Ground always means negative.

A. true

B. false

Match the symbol to the description (**2 points each for a total of 10 points)**

_____ earth ground A. 

_____ digital ground B. 

_____ chassis ground C. 

Points possible:

Multiple choice:	44
Matching:	6
	50

***** end of unit 4 exam *****