

Group Name _____

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 1) One ampere of current is present when one coulomb of charge passes through a conductor in one second. 1) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 2) Determine the potential difference if it takes 300 mJ of energy to move a charge of 67 microcoulombs. 2) _____
A) 45 kilovolts B) 0.45 kilovolts C) 4.5 kilovolts D) 450 kilovolts
- 3) If an electrical circuit can operate for 10.0 hours with a 2-Ah battery, what is the average current that the circuit demands? 3) _____
A) 5 amperes B) 2 amperes C) 20 amperes D) 0.2 amperes

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 4) The free proton is the positive charge carrier in a solid conductor. 4) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 5) What is the charge in coulombs if 8.5 mA of current flow through a surface every 90 ms? 5) _____
A) 770 microcoulombs B) 770 millicoulombs
C) 770 nanocoulombs D) 770 coulombs
- 6) Germanium and silicon are examples of 6) _____
A) battery electrolytes B) insulators
C) semiconductors D) conductors

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 7) DMM stands for _____. 7) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 8) How must ammeters be connected in a circuit when used to measure current? 8) _____
A) Directly across the component
B) In series with the component being measured
C) Varies with circuit construction
D) Varies with the component being measured
- 9) What is the color code for a resistor whose value is 650 ohms? 9) _____
A) Green, Black, Brown B) Blue, Green, Brown
C) Brown, Black, Green D) Green, Blue, Brown
- 10) Doubling the length of a conductor 10) _____
A) increases resistance by a factor of 4. B) doubles the resistance.
C) cuts the resistance in half. D) decreases resistance by a factor of 4.

- 11) A superconductor is 11) _____
- A) a conductor of electric charge that exhibits zero resistance only in zero-gravity conditions.
 - B) a conductor of electric charge that has virtually no resistance when subjected to very low temperatures.
 - C) a conductor of electric charge that exhibits a negative resistance effect.
 - D) a conductor of electric charge that has sufficient cross-sectional area to make its resistance nearly zero.
- 12) Which *one* of these statements is true of the ohmmeter? 12) _____
- A) It is used to measure resistance of a single resistor in a network without removing the resistor from the circuit.
 - B) It should be stored with the selector switch in the resistance mode.
 - C) It displays a resistance of zero if the leads touch each other, and an infinite reading if there is no connection at all.
 - D) It is used to measure resistance in a circuit only if the circuit is powered by low-voltage batteries.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 13) A fuse is a device whose sole purpose is to ensure that voltage levels do not exceed a safe level. 13) _____
- 14) Ohm's law shows that current is directly proportional to the applied voltage and is inversely proportional to resistance. 14) _____

Answer Key

Testname: TUTORIAL 1 IN CLASS QUESTIONS 2015

- 1) TRUE
- 2) C
- 3) D
- 4) FALSE
- 5) A
- 6) C
- 7) Digital Multimeter
- 8) B
- 9) B
- 10) B
- 11) B
- 12) C
- 13) FALSE
- 14) TRUE